

# SCOTTISH TOBACCO AND RHUBARB: THE NATURAL ORDER OF CIVIL CAMERALISM IN THE SCOTTISH ENLIGHTENMENT

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In a field on Pendreich farm in Midlothian, two miles from Dalkeith, a crop of tobacco was maturing in the summer of 1782. The owner, William Simpson, had returned from South Carolina three years earlier to claim his inheritance upon the death of his father. The land had been neglected for a long time and required large outlays of capital to be restored to full use. Simpson hoped that the profits from tobacco might recoup some of these costs. Accordingly, “no expence” was spared in rearing the exotics. They were raised in hotbeds and transplanted to “rich old ley ground” newly opened by the plow. Before long, the tobacco plants reached “a considerable height, and were fully cloathed with leaves.”<sup>1</sup> Then, just before harvest time, a storm hit the neighborhood, devastating the crop overnight. Almost every plant was stricken and destroyed by the hard wind, leaving Simpson’s glorious plan of improvement in tatters. Yet not everyone saw the storm as an unmitigated evil. Simpson’s friend Andrew Wight believed that the disaster was in fact a blessing in disguise, putting a merciful end to a foolish venture.

Simpson’s farm was but one of many in the region to carry tobacco at this time. Shortly after Cornwallis’s surrender at Yorktown, hundreds of acres across Scotland were planted with the crop. Cultivation centered on the market town of Kelso in the Borders. Wight estimated the land under tobacco at no less than one thousand acres in 1782. Wight arrived in Kelso at the end of a four-thousand-mile tour through Scotland commissioned by Lord Kames and the other commissioners on the Board for the Annexed Estates to survey the state of improvement in Scottish farming. Despite Wight’s enthusiasm for the reform of husbandry, he testified

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to the diffusion of the new crop in his report to the board with barely concealed unease: "I cannot approve of extraordinary profits upon a single article. They are like gaming and tend to make people despise moderate profits."<sup>2</sup> This mania had begun on Dr. Charles Jackson's farm in 1779 and then gradually spread to adjacent properties. Andrew Blakie, the seedsman and gardener in Kelso, helped diffuse the crop. Macdowell of Cavertownmill had "been smitten like everybody else."<sup>3</sup> Alexander Oliphant, tenant of the Duke of Buccleugh, had planted a large field. Tobacco could be found on the estate of Baron Rutherford as well. In fact, the crop was cultivated in Perthshire, the Lothians, in the Vale of York, and as far north as Inverness at this time. Yet for Wight, the rapid diffusion of British tobacco was a sign of myopic greed rather than true improvement. The plant offered the prospect of quick profit, but only at the expense of far more useful crops that could provide for the subsistence of the people.<sup>4</sup>

Wight's unease flowed from a deep source. The tobacco fields of Kelso presented a concrete challenge to the sacrosanct division of labor between the nation and empire enshrined in the Navigation Acts. Metropolitan soil should be reserved for the cultivation of basic foods, whereas luxuries like tobacco should be imported from warmer lands. "Our climate," Wight asserted, is "averse to the growth and cure of the crop."<sup>5</sup> But how natural was this order? Many natural historians and improvers in the late Enlightenment rejected the traditional conception of empire, both in theory and practice. Through information networks and voluntary associations, they promoted a host of projects that upset the conventional order of the expanding fiscal-military state and its major interest groups. These schemes of import substitution undercut both colonial and foreign trade in favor of an economic strategy of national autarky within the British Isles.<sup>6</sup>

Unfortunately, historians have failed to appreciate the full extent of this phenomenon. Christopher Bayly's seminal account of agrarian ideology in the wake of the American War of Independence included a very useful emphasis on internal improvement.<sup>7</sup> For Bayly, John Sinclair's Board of Agriculture and the Scottish natural historians played a powerful role in the making of agrarian patriotism. But Bayly tended to see internal and colonial development as part and parcel of the same paternalist and neo-absolutist ideology. Richard Drayton and John Gascoigne in turn have followed Bayly's lead with studies of the botanical networks centered on Kew Gardens.<sup>8</sup> Both helpfully stress the debt of British improvement to continental models of governance and expertise. Yet like Bayly, they conflate empire and nation in their accounts, missing the tension between natural histories of national self-sufficiency and imperial autarky. Liberals and conservatives who were suspicious of empire and foreign trade saw in ecological exchange and acclimatization the possibility of an alternative environmental and economic order. The trials in Kelso were part of a broader movement of *civil cameralism* in late eighteenth-century Britain.<sup>9</sup>

On the continent, the eighteenth-century science of cameralism—*Kamer-alwissenschaften*—became an academic discipline when Frederick Wilhelm established a chair in the subject at the University of Halle in 1727. In the formal sense, cameralist science was a genre of technical writings devoted to increasing the tax base of a principality. But the term can also be employed in the wider sense favored

by the historian of science Lisbet Koerner in her seminal biography of the Swedish natural historian Carolus Linnaeus.<sup>10</sup> For Linnaeus and other improvers, the objective of good government was to husband natural resources through schemes of import substitution. With the help of naturalists and agricultural improvers, government officials could increase the value of their territory by discovering neglected local resources and by diversifying local flora and fauna with plants and animals from abroad. This strategy of ecological exchange was facilitated by Linnaeus's binomial nomenclature and sexual classification scheme, which made it possible to assemble local inventories of flora and fauna into a universal taxonomic science. The reorganization of national agriculture went hand in hand with schemes of internal colonization, aimed at civilizing rebellious subjects and transferring settlers to new zones of cultivation. In this way, states without recourse to overseas colonies might still prosper and compete with transoceanic empires.<sup>11</sup>

In Britain, the strategy of import substitution met with intense interest in the final decades of the eighteenth century. But political and social peculiarities conspired against any wholesale adaptation of continental cameralism. Instead, different factions of improvers appropriated the project of acclimatization and ecological exchange for quite different ends. The best-known case is that of Sir Joseph Banks and Kew Gardens. Banks helped popularize Linnaeus's new method among British naturalists but in the process transformed it into a "neo-mercantilist" tool of the imperial state. For Banks, economic botany promised to diversify the ecologies of the remaining British colonies after the American War of Independence. The goal of national autarky was projected outward toward the empire. These schemes involved moving cash crops across great distances: tea plants from China to British India, breadfruit from Tahiti to the West Indies, and so forth. Thanks to his close ties with leading figures in the fiscal-military state, Banks was able to build a global network of naturalists from the West Indies to New South Wales.<sup>12</sup>

However, in other circles of British society, continental cameralism provoked a very different response. The promise of ecological exchange was eagerly embraced by Scottish natural historians and agricultural improvers keen on experiments in acclimatization and wasteland reclamation. John Hope sought to emulate Linnaeus by introducing cash crops like rhubarb and Chinese tea to the Scottish climate in the Royal Botanic Gardens in Edinburgh. John Walker promoted flax, potatoes, and kelp in order to transform the Highland economy. Improvers elsewhere in Scotland introduced larch, rhubarb, and Merino sheep, among other exotic imports. There was nothing new about the practice of ecological diversification in Britain, but in the late Scottish Enlightenment, this economic strategy was recast as a broader political and social movement, aimed at undermining the commercial-legal framework of the empire and the vested interests that defended this structure.<sup>13</sup> A long series of Scottish figures espoused the advantages of internal colonization, including John Hope, John Walker, Henry Home, John Campbell, James Anderson, John Knox, George Dempster, David Young, John Sinclair, Archibald Cochrane, James Headrick and William Aiton. While few of them denounced empire and long-distance trade categorically, they all agreed that import substitutes and internal improvement constituted a cheaper and morally superior alternative to external commerce and conquest.<sup>14</sup>

Yet Scottish cameralism differed in one crucial respect from its continental counterpart. It was predominantly a movement in civil society, rooted in informal networks and voluntary associations. In a speech to the members of the British Wool Society in 1791, Sinclair stated the case against government intervention bluntly. Wherever the state became involved in schemes of “national improvement,” public funds were “improvidently expended” and the practical trials neglected or “carelessly tried.” As soon as public assistance was retracted, such projects perished “at once.”<sup>15</sup> To minimize fraud and waste, he suggested, the goals of ecological diversification and national self-sufficiency should instead be promoted by voluntary associations like the British Wool Society. Agricultural improvement succeeded best, as Sinclair’s ally Robert Heron put it, when “information [was] conveyed without the use of force.”<sup>16</sup> By banding together and sharing natural knowledge, proprietors could learn about new methods of improvement and stimulate grassroots improvement through awards and premiums to tenant farmers. Sinclair and other Scottish improvers thus pioneered a hybrid form of “civil cameralism,” distinct from the “neo-mercantilist” variation of Linnaean natural history espoused by Banks.<sup>17</sup>

The rest of this essay presents two glimpses of “civil cameralism” at work: the introduction of rhubarb and tobacco to Scotland. These cases offer vivid examples of several cardinal features of civil cameralism. The prospect of cash crops at home turned the idea of the mercantilist economy on its head by spurning long-distance trade and bringing the periphery to the center. In this sense, agricultural trials and ideological critique went hand in hand. The diffusion of seeds and crop knowledge made possible novel forms of resistance to the mercantilist interests of the fiscal-military state. In the case of rhubarb, the targets were the East India and Russia Companies; for tobacco, the Glasgow merchants. The second major feature of civil cameralism was its debt to the Enlightenment science of acclimatization and resource inventory. Scottish improvers proved especially receptive to the cameralist projects of Linnaeus, since they were so attuned to the problem of agriculture in a northern climate and in northern soil. The story of the rhubarb plantations shows in some detail the concrete links forged between natural expertise and ecological diversification. Such connections were a matter not merely of taxonomic precision, but also of the transfer of local knowledge from the periphery, in this case travel accounts from central Asia and planter experience from the Chesapeake. The third cardinal feature of civil cameralism was the mobility and low access costs of acclimatization techniques. Seed and plant knowledge were easily diffused and widely shared. The Kelso tobacco trials illustrate how quickly an informal network of farmers and landowners could emerge in the right circumstances. Tobacco was widely recognized as an imperial crop, at the heart of a particular long-standing vision of the British Atlantic. This explains why the Glasgow merchant lobby moved so rapidly and decisively to outlaw the domestic crop. Paradoxically, then, the significance of the Scottish tobacco experiment must be judged by its brevity—a swift diffusion followed by ferocious reaction. A crop in the wrong place was a dangerous thing to the vested interests of long-distance trade.

#### LAXATIVE AUTARKY

Seeds of the “true” rhubarb (*Rheum palmatum*) were first brought to Britain by Scottish physicians at the Russian court in Saint Petersburg. James Mounsey,

the archiater of Czar Peter III, introduced the plant in 1762, but may have been preceded by John Bell of Antermony forty years earlier. In the eighteenth century, the leafy stalk of the rhubarb was not yet appreciated as a culinary delicacy. Instead the dried roots of *Rheum palmatum* served as a purgative in medical practice. Medicinal rhubarb promised relief for the deranged digestive system of patrician consumers. Linnaeus praised it as a “divine medicine” capable of curing pulmonary disease and fevers.<sup>18</sup> Hope defined its medical properties as a “strengtheners and astringent,” suitable for “frequent use as a purge.”<sup>19</sup> Two hundred thousand pounds worth of the plant was imported to Britain each year from Russia and China by 1792.<sup>20</sup>

Edinburgh physicians Sir Alexander Dick and John Hope dreamed of establishing a native trade in Turkey rhubarb by distributing Mounsey’s seeds among Scottish landowners. They wanted to bolster the place of Scottish agriculture in the British economy while dealing blows to the Russia Company and the East India Company alike. They were encouraged by recent trials by Linnaeus who claimed to have transplanted “Tartarian rhubarb” as well as Chinese rhubarb to the Swedish climate in the 1750s. Before long, both Dick and Hope were growing crops in the vicinity of Edinburgh. Hope took advantage of his position as Regius Keeper of the Royal Botanic Garden to manage a large-scale experiment. Success seemed imminent at this point. James Anderson remarked in 1777:

Not ten years ago, the rhubarb-plant was reckoned so peculiarly confined to the regions of Tartary, that the Russian emperors regulated the quantity brought to the market, and fixed the price, in the same manner as the Dutch at present do the clovers and mace, and made us pay annually near two hundred thousand pounds for this article alone; which is now found to grow in our gardens to as great perfection as in any other part of the earth, and will ere long become as common as the wild dock, if it is not attended to.<sup>21</sup>

In 1778 Hope’s harvest was ready for a commercial trial. He estimated a small profit of £12.8.8 for his London sales. By 1784 he had managed to create a local monopoly, acting as the sole supplier of the drug to the Royal Infirmary in Edinburgh. At Hope’s death two years later, he left a plantation of three thousand rhubarb plants next to the Botanic Garden at Leith Walk.<sup>22</sup>

Hope’s venture competed with several rural plantations. It seems that John Mounsey distributed seeds not only to the Duke of Atholl but also to the Earl of Bute. Through other hands, rhubarb reached the Earls of Hopetoun, Buchan, and Hyndford. Atholl, Hopetoun, and Buchan committed themselves to serious trials, vying for a stake in the anticipated windfalls of the new cash crop. The habitat of *Rheum palmatum* gave them some reassurance of success. John Bell advised Hope that rhubarb flourished “within the limits of a certain temperate climate.” He added: “The plant is far from being of the tender kind, the Climate from whence it is brought being dry, as well as the Soil, but Cold frosts with little snow for the space of 3 or 4 months.” In his *Travels from St. Petersburg . . . to diverse parts of Asia* (1763), Bell indicated that the best rhubarb grew at the sources of the Irtysh along the 47<sup>th</sup> parallel and also in the hills near Lake Baikal among the Mongol Tartars. More encouragement came from the successful transplantation of *Rheum palmatum* to the apothecary garden in Saint Petersburg, where it grew in “soil

light deep and dry not hurt by cold. Its native climate high and cold.” The Earl of Buchan managed to raise a good crop of rhubarb in the rich and deep Scottish loam of his estate near Dryburgh in the Borders. He reported that the demands of the plant were no more exacting than that of the common carrot.<sup>23</sup>

Among the magnates, only the third Duke of Atholl attempted to grow *Rheum palmatum* in the Scottish Highlands. The first mention of this crop on his estate dates from 1767, when his brother Charles Frederick complimented the duke on the “fertile state of our true Rhubarb plant.” They both recognized the value of the plant as an import substitute. Charles Frederick wanted to see the crop “communicated to many Gardens, and have that valuable Root a native of Great Brittain for which we are now obliged to Tartary and China.” The duke seems to have held out hopes for windfall profits that might bolster his fortunes. A later letter from Captain James Murray to the fourth duke did not waffle on this point: “I am more and more of opinion if well attended to, [the rhubarb culture] may turn out to great advantage and indeed you will find it very necessary to attend to every branch of your own business, for at present you certainly are the poorest Duke in Great Britain as to income for you really cannot afford to spend 3,000 a year.”<sup>24</sup> There were also geographical and social circumstances favoring the crop. Landlocked Atholl had no stake in the early kelping industry. The rising demand for Highland wool was not yet apparent. Rhubarb may also have appealed to what Leah Leneman has called the “paternalist” sensibility of the third duke.<sup>25</sup> This was a cash crop that promised to improve his income with a minimum of social disruption. Because it was cultivated on a relatively small plot of ground, partly in the kitchen garden at Blair Castle, there was no need to modify the pattern of landholding on the estates, that is, no pressure to consolidate farms and remove tenants. On the eve of the emigration panic in 1773, the Duke of Atholl wrote Sir James Grant: “We ought to live and lett live—by squeezing the very Vitals of the Poor I believe I coud squeeze 6 or 700 a year more out of them than I have at present but neither the Blessing of Providence nor the Approbation of my own heart would attend it so I am better as I am.”<sup>26</sup> On this score, rhubarb was a doubly humane source of income, a cure for both social and bodily ills.

From the outset, the enterprise showed considerable promise. The duke contacted Dr. Monro at the Royal Infirmary of Edinburgh and requested him to test the Atholl rhubarb in medical practice. The doctor treated the opportunity as a form of polite exchange and reciprocated with a parcel of five seeds from the bread tree of Jamaica and a promise of more exotic nuts and seeds to come. By early 1770 Monro had the Atholl rhubarb “powdered at the Hospital” and distributed in small doses to several patients. The results proved its efficacy beyond any doubt. With a zeal for precision, Monro reported the productive outcome: “I gave a scruple (or 20 grains) to one Patient and half a Drachm (or 30 grains) to another; the one who had the scruple, had three stools, and the one, who had the half drachm, four.” In each case, it operated “with ease, as the best Rhubarb would have done.”<sup>27</sup>

The profusion of Blair rhubarb caught the attention of the Welsh naturalist Thomas Pennant on his visit to Atholl. He gave the crop a prominent place in the description of Blair in his best-selling *A Tour in Scotland*. Pennant assured

his readers that Atholl would soon supply Britain with enough roots to ensure a permanent laxative autarky:

[Murray's] benevolent design of rendering common and cheap this useful medicine, is blessed with the utmost success. The roots which he had cultivated in the light soils, familiar to those of the Tartarian deserts, the native place, increase to a vast size: some when fresh having been found to weigh fifty pounds, and to equal in smell, taste, and effect to those we import at an enormous expense to our country.<sup>28</sup>

The key to proper management lay in the careful drying of the root. Pennant contrasted Atholl's rational culture with the sloppy method employed by the Mongol hunters of Tartary, who gathered rhubarb "in all seasons" and drew up "the roots indiscriminately," leaving them to dry on the roofs of their tents "without further care." Atholl's studied approach would ensure the definite superiority of Scotch rhubarb over the foreign kind. No wonder then if the duke in turn received Pennant with warmth and interest. They began a correspondence about Pennant's zoological plates, mineral collecting, "moose deer," Patagonians, and the history of Blair Castle. Atholl also became friendly with Reverend John Lightfoot, Pennant's companion on the second tour and the author of *Flora Scotica*. "I hope the Monopoly of the Empress of Russia with respect to Rhubarb will soon have an End," Lightfoot wrote, "and that she will be undersold at the Market of Blair." Pennant's visits seem to have reinforced Atholl's taste for the new fashion of northern exploration and improvement. The inventory of the third duke's library confirms this impression.<sup>29</sup>

The untimely death of the third duke in 1774 did not put an end to the prospects of Highland rhubarb. His son John Murray carried on the experiment for another decade. By 1775, the factor Thomas Bissett reported about plans at Blair Castle to "have a large plantation of Rhubarb from thousands of young plants spring from last year's seed of the old. The soill there in the kitchen garden seems to agree well with them." He added that the rhubarb in Dunkeld was managed attentively. At Blair, James Stewart estimated that "at least 3,000 plants" could be extracted "from the seed shaken in the very ground where the Rhubarb grows." Two plots had already been planted in the kitchen garden. The fourth duke aimed to expand the area of cultivation to the land of his tenant John Robertson. Stewart observed that there was "at Blair above 1000 plants from four to ten years old all in good health and order," but that the Dunkeld kind was ailing. The *Statistical Account* of the parish of Dunkeld reported that rhubarb, "to the value of L. 160 Sterling, was sold in one season, to a London druggist, at the rate of 8s per lb." Ten years later, in the fall of 1785, the fourth duke wrote to Major General Murray in Westminster, asking for advice about a rhubarb competition. Since the Major General was on friendly terms with Banks, the duke was pressing him for information about "a medal soon to be given by the society of Arts for the greatest quantity of British Rhubarb." The Society of Arts had already rewarded Mounsey and Dick for introducing rhubarb to Britain. Perhaps the duke intended to enlist Banks on the side of Highland rhubarb against his rivals elsewhere. But at the same moment in time, a new exotic crop began to eclipse rhubarb in the duke's mind. Atholl became increasingly absorbed with trials involving larch timber as a substitute for oak and other hardwoods. In the next three decades, his servants planted an

estimated fourteen million larch seedlings on his estate. National autarky in naval timber became an *idée fixe* with the duke. He even had a thirty-two-gun frigate built in larch to persuade the Admiralty of its superiority as a building material. Atholl's rhubarb venture thus turned out to be just a brief apprenticeship for a much more ambitious form of civil cameralism.<sup>30</sup>

The duke's switch from rhubarb to larch was probably timely. The campaign of the Society of Arts to promote rhubarb in England gained ground in the last decade of the eighteenth century. In contrast with the Scottish information network of gentlemen farmers, the English growers were middling chemists, merchants, surgeons and pharmacists. Rhubarb was no longer just a prop for the Scottish landed interest. Sir William Fordyce suggested that the plant should be cultivated by "all who are possessed of a garden, or a spot of ground, however inconsiderable." The "poorest and lowest of the people" would in this manner have access to "one of the most useful simples, or medicinal vegetables hitherto known."<sup>31</sup> In Fordyce's new vision, the plant was robbed of its genteel pedigree—not just a rare and exotic astringent, but a drug for the constipated masses. Yet this democratization of native rhubarb coincided with a collapse of demand. By the early 1820s a medical botanist concluded that despite sustained effort, "no market could be found" for British rhubarb and that "of late years, its growth had been entirely neglected."<sup>32</sup>

### SCOTTISH SMOKE

When Dr. Charles Jackson sowed two acres of tobacco on the outskirts of Kelso in the Scottish Borders in the spring of 1779, he was reviving a long tradition of provincial resistance to the imperial state and its vested interests. The New World crop of tobacco had arrived in Europe with the other fruits of the Columbian exchange: potatoes, maize, silver, and syphilis. Dutch farmers cultivated the plant as early as 1610. In England, Henry Somerscales provoked a panic among the Virginia planters when he planted tobacco in 1619 at Winchcombe, Gloucestershire. To protect the Chesapeake tobacco staple and royal customs revenues, the English Crown moved to suppress domestic cultivation. *The Proclamation to Restrain Tobacco Planting in England and Ireland* denounced domestic tobacco as "crude, poisonous and dangerous for the Bodies and Healths of our Subjects."<sup>33</sup> King James I enlisted the College of Physicians to verify the superior quality of Virginia tobacco. But James's 1619 edict did little to settle the matter. Poor farmers persisted with the crop in many parts of England. For reasons of climate and soil, English cultivators seem to have preferred the pungent *Nicotiana rustica*, occasionally used by New World shamans, over the milder and more aromatic Virginia variety *Nicotiana tabacum*. Even so, Gloucestershire tobacco was passed off as the Chesapeake leaf in the London markets. It took concerted effort by the Crown to suppress the crop. The 1619 proclamation was followed by several others. Justices of the peace, special commissioners, and even cavalrymen were dispatched to extirpate the weed. Local farmers in turn mobilized to defend the crop. The struggle persisted down to the end of the seventeenth century.<sup>34</sup>

In Scotland, however, there was reason to believe that tobacco growers had the law on their side. The Act of Union in 1707 had left a convenient loophole by failing to outlaw tobacco north of the border. When imports from the Chesapeake



fell during the American War of Independence, Jackson saw a chance to launch domestic tobacco as a patriotic import substitute in 1779. "The date of the experiment will I trust point out the motives, and be the best apology I can make for this intruding upon your Lordship," Jackson told his local ally Sir Gilbert Elliot of Minto.<sup>35</sup> Meanwhile, no less an authority than Adam Smith had insisted in *The Wealth of Nations* (1776) that the American cultivation of tobacco was a political rather than a natural necessity: "The cultivation of tobacco," he wrote, "has upon this account been most absurdly prohibited through the greater part of Europe."<sup>36</sup> Although Smith failed to discuss the Scottish case, his critique was easily co-opted by Jackson's network.

An assembly of Kelso landowners and tenants convened at a general meeting on August 12, 1782. The meeting had been announced in the Edinburgh newspapers and drew a "respectable" crowd to the Council house in Kelso. The nascent Scottish tobacco lobby was led by a committee of gentlemen, including the Duke of Roxburgh, and chaired by Elliot of Minto, but the intellectual vision came from Jackson. At the assembly, Jackson spelled out what Smith had only hinted at in *The Wealth of Nations*: Scottish tobacco was a rational substitute for the American crop. Jackson drew up the resolutions of the group in a memorandum, which was intended for the *Edinburgh Evening Courant* but does not appear to have been published. Tobacco could thrive in Britain as well as it did in the New World: "That it may be cultivated equal to America is admitted." In fact, Scottish tobacco had several advantages over the American kind. The temperature and "humidity of the atmosphere" in Britain permitted a "much greater Quantity" of produce "per acre." Labor and transportation costs were lower. British production did not require the "use of Slaves" but instead could provide free women and children with gainful employment. Jackson denied the common charge that tobacco exhausted soil fertility. He also made light of the fear that wet weather could make local tobacco curing a difficult task. In the event that conditions proved truly adverse, he suggested a treatment "of drying vegetables in a confined house where steam is circulated in tubes." This was, he thought, a method "amazingly well adapted for Tobacco." Finally, he declared that domestic cultivation would put an end to the long tradition of smuggling tobacco, which had reached alarming proportions. Instead of customs, each "Plantation and vendor" would pay a license of five pounds each, "to be collected as Happy and Charg'd when packd before moved from the Plantation and not to extend any further."<sup>37</sup>

Natural knowledge played a decisive role in the tobacco project. Like Mounsey and Hope, Jackson combined the authority of the physician with that of the agricultural improver. Throughout the August resolutions of the Kelso meeting, Jackson drew on his own experience of New World practice. He told the assembly that he had researched tobacco cultivation closely during a long sojourn in Virginia. Along the banks of the York River, the "Luxuriant and rich" "Meadow land" was "equally valuable with any of ours."<sup>38</sup> But there was no reason to think that American tobacco should prevail simply because the soil was equal in quality. Jackson's argument was echoed by a number of other agricultural improvers and natural historians of the period, many of whom had also promoted experiments with British rhubarb. In *A Tour in Scotland and Voyage to the Hebrides*, Pennant recommended tobacco plantations in the mild, insular climate of the Hebrides.

Pennant's friend and correspondent Daines Barrington defended the culture of tobacco in a paper to the Society of Arts in London. The Society then approached Jackson for an account of his successful trial. Like Jackson, Barrington rejected any legal restraints on domestic tobacco production.<sup>39</sup> Meanwhile, Hope cultivated *Nicotiana tabacum* together with rhubarb in the Royal Botanic Garden in Edinburgh. The American-born explorer Jonathan Carver submitted a *Treatise on the Culture of the Tobacco Plant . . . Adapted for Northern Climates* to the Society of Arts in 1779. Carver recommended trials with the *Nicotiana tabacum* of Virginia, particularly in sandy soils resembling the native land of the American tobacco plantations. He gave a detailed account of the plight of tobacco plants in English gardens, concluding that they matured quite well, as long as they escaped heavy rains and early frost. Carver too favored the repeal of the English ban on tobacco.<sup>40</sup> In later years, domestic tobacco was defended by the improver David Ure, a Glasgow-educated clergyman and geologist who became associated with Sinclair's Board of Agriculture. He claimed in the *General View of the Agriculture of the County of Roxburgh* (1794) that "the growth of tobacco, in this country, might have been brought to a high degree of perfection" had the government not placed a political bar on cultivation. Both "climate and soil were extremely favourable" to the crop.<sup>41</sup> Another agriculturist, William Marshall, observed extensive tobacco culture in Yorkshire at the end of the American war. Though he had not seen the plants in the ground, he guessed that it was probably a variety of the *Nicotiana rustica*, purchased from "seed-shops" and then passed from one farmer to another. Evidently, Simpson tested a broad range of varieties on his Mid-Lothian farm. Whether Jackson got his seed for the Kelso experiment directly from America or from a Scottish source like Hope is not known. It is also not clear whether his crops were the Virginia variety or *Nicotiana rustica*. Yet whatever the pedigree of the seed, the quality was evidently very impressive. According to Wight, "judges of tobacco in London . . . pronounced" it "equal to the third best sort" in Virginia."<sup>42</sup>

Mounting political resistance to Scottish tobacco provoked the August meeting of Jackson and his allies. The critics included, not surprisingly, the powerful Glasgow merchants who owed their fortunes to the Chesapeake tobacco trade. In fact, Jackson encountered "so much opposition from the Glasgow people in the sale of his tobacco" that he was forced to ship it to the London market instead of vending it locally. But when Jackson attempted to send a hogshead of his tobacco to London in the winter of 1781–82, it was detained by the Customs officers at Berwick and impounded in the King's warehouse there. This happened despite the fact that the cask was carrying a certificate by the Justice of the Peace in Roxburgh, Sir James Douglas, attesting that it was genuine Scottish produce legally bound for the London market. The Berwick officers still found the shipment suspect and asked for advice from the Customs Board in London. Jackson in turn involved Elliot, asking him to forward a letter to the chancellor of the exchequer to render a verdict on the legality of Scottish tobacco. The matter dragged on into the spring. By May it was evident that the new chancellor—John Cavendish—was hostile to the project.<sup>43</sup>

On June 19, the question of Scottish tobacco cultivation came up in the House of Commons. Cavendish moved to extend the ban on domestic tobacco to all of Great Britain, plugging the long-standing legal loophole. Cavendish was

a member of the Whig club and an opponent of war with the Americans. In the Commons, Sir Adam Fergusson of Kilkerran observed that “tobacco had been cultivated to a considerable extent in Scotland” since the reign of James II. It would not be “just” or “consistent with the articles of Union, to destroy a plantation which then existed.”<sup>44</sup> Cavendish replied with a lightly veiled reference to the Glasgow merchants “that with respect to foreign markets, tobacco of the growth of Scotland might be productive of inconveniences to this country.” He added an administrative-legal plea for uniformity: “there had always been an objection to the entering of it at the custom house of London.” A ban on the northern crop would put “Scotland and England . . . on the same footing.” Fergusson has been described as a “crony” of Henry Dundas—the rising star of Scottish politics in the period, but on this point, Fergusson seems to have diverged from Dundas’s line of argument. Like Elliot and the Duke of Roxburgh, he supported the rights of Scottish landowners and tenant farmers to grow legal crops on their lands.<sup>45</sup> After Cavendish’s proposal passed without a division, his opponents suggested a compromise. On June 21, a bill was brought in “to allow the growth of Tobacco in Great Britain, for a limited time.” The idea, which seems to have originated with Elliot, was that Jackson and the other tobacco growers had acted in good faith and therefore deserved to be paid for their labors either by selling the current harvest on the market or receiving an indemnity. Scottish farmers had to submit an affidavit about the size of their crop by August 20 in order to sell it on the British market. They would also have to pay a duty on their produce, though the act left the exact amount unspecified. The new bill received royal assent on July 5.<sup>46</sup>

Despite such depressing news, Jackson and his allies mounted a furious rearguard action to oppose the bill and mitigate its effects. The resolutions at the August 12 meeting insisted that the ban was motivated by political prejudice rather than natural knowledge. The next step was to mobilize expertise and support. The act stipulated that the Scottish tobacco producers must pay the same duty as the “British colonies or plantations in America,” but it was far from certain what this might mean when regular trade had been disrupted for so long. Elliot waited on Adam Smith in Edinburgh to discuss the situation. Smith was not only a known liberal critic of the tobacco trade but also at this point a commissioner of customs in Scotland. The following day, Smith produced an “authentic account of the amount of the Duty imposed on Tobacco raised in Scotland,” which suggested that the full amount of the duty would be 16 pence per pound. This was an outrageous penalty, even considering that American tobacco sold at record levels of 2 shillings and 5 pence during the war. Before 1775 the duty on American tobacco had been 8 pence per pound. After the interview with Smith, Jackson and Elliot decided to appeal directly to a number of high-ranking politicians, including William Pitt, Lord Shelburne, and Henry Dundas. The aim was to petition Parliament to repeal the “whole duty laid on the home consumption.” Elliot explained to Dundas that Lord Cavendish had been “misinformed” about the true value of the crop, “for the duty is actually double its average value, and very much exceeds the highest price of the last year’s crop.” Dundas in turn was sympathetic: “For my own part I think your Representation is irresistible, and I cannot have a doubt parliament will give the Relief you pray for, and I think under all the circumstances of the care it ought to be a total relief.” Yet a month later, Dundas still had no progress to

report, having broached the matter only in the most “general” terms with William Pitt. As the fall ended, it was all too obvious that the tobacco harvest in the Kelso area had failed. The season proved unusually harsh with heavy rains in the summer and then early frosts that devastated the crop. Northern Scotland suffered famine conditions when winter came. In January Jackson met with Dundas in Edinburgh. The Lord Advocate advised that Jackson give testimony in Parliament to win more support. Jackson spent February and March in London, waiting on politicians. After two months he was able to secure a new deal. Tobacco farmers would be given an indemnity of 4 pence per pound of tobacco if they turned their stores over to the Customs Office to be burned. But Jackson’s own harvest had already been sold and could therefore not be indemnified. To cover Jackson’s lobbying expenses, the leading members of the tobacco network organized a subscription in 1784. A broken man, Jackson passed away the following year, but not too soon to see his bold project go up in smoke.<sup>47</sup>

Yet Jackson’s visit to London seems to have touched a nerve with at least some political observers. The member for Cardiff, Sir Herbert Mackworth, took up the cause of British tobacco in a Commons speech on March 14, 1783. A member of the Society of Arts with commercial interests in the mining industry, Mackworth became a major backer of the abolitionist movement a few years later. He reminded his audience that the legislation regarding tobacco had been established in the first place only to give Virginia “its staple produce.” Why then not repeal the tobacco laws since they no longer served the national interest? Tobacco plantations had been introduced in both Ireland and Scotland, setting a practical example for the kingdom as a whole: “It was therefore high time for England to turn her thoughts seriously to so material an object of commerce.” Mackworth also criticized the Scottish tobacco duties: “The Cultivation of Tobacco had been permitted in Scotland, but under such restrictions as amounted to a Prohibition.” Lord Surrey, Charles Howard, agreed with Mackworth that the “Idea deserved Attention, not only on its own Importance, but the Authority whence it proceeded.”<sup>48</sup> However, Howard urged the Commons to postpone any decision on this question until the delicate diplomatic negotiations with the United States had been settled. A month later, the *Public Advertiser* complained that the “present Parliamentary Pother about American Trade” was “strange and unintelligible to every cool Observer.” Why seek to placate the Americans when the “late, blessed Peace” had now made them “Aliens to all Intents and Purposes”? “What are those mighty Benefits of American Commerce that so much Noise is made about?”<sup>49</sup> Most raw materials sent out of the thirteen colonies could be had from the West Indies or sources “much nearer to home.” In particular, tobacco could be “raised among ourselves in the greatest Plenty and Perfection” if only the ban was lifted. Presently, “every Englishman ought forthwith to be permitted to smoke a Pipe, as freely as to eat the Bread, of the Fruits of his own Toils.” There was no reason to “continue to take the Tobacco of our American Brethren . . . at a Ten-fold Expence” unless “some Statesman” blocked the measure for the sake of British exports.<sup>50</sup> In fact, this was precisely the argument that Lord Sheffield, John Holroyd, made in his influential pamphlet, *Observations on the Commerce of the American States*. Like Adam Smith, Holroyd recognized that tobacco had been grown around Europe for a long period. He noted that many nations on the continent had become major suppliers during

the American war. Flanders and Russia grew enough to export large quantities. Tobacco was also raised in Holland, Brandenburg, and the Ukraine. The future of Chesapeake tobacco was by no means assured. Though European tobacco in general was neither as “strong” nor “so high flavoured as American,” it could be improved greatly “under proper cultivation and management,” especially by making use of drying houses on the American model of production. Labor was also cheaper in Europe, while “manure [was] more plentiful, and freight . . . less.” Besides, the “finest” grade of tobacco was produced in the West Indies and South America rather than the Chesapeake. The reason to continue with the American tobacco trade after independence was neither the price nor the quality, but the market it gave British manufactures. “For want of sufficient returns, large quantities of tobacco must come to Great Britain, and we can afford to give the best price for it, by taking it in exchange for our manufactures.”<sup>51</sup> Together with Banks, Charles Jenkinson, and William Eden, Holroyd promoted a policy of “neo-mercantilism” in the decade after the American War of Independence. The import of “coarse tobacco” from the United States was a necessary ruse to keep Americans in the thrall of British manufacturing interests. But Holroyd’s argument also quietly admitted what Jackson and Smith had argued all along: the strength of tobacco export in North America rested neither on advantages of cost nor quality.<sup>52</sup>

#### IMAGINING THE END OF EMPIRE

The crisis of American independence and the emergency of the French Revolutionary Wars ushered in something of a Golden Age of import substitution among Scottish improvers. One of the most vocal critics of mercantilist trade was the radical publisher and political economist James Anderson. In a series of books and periodicals, he warned that empire was a “delusive dream” that had blinded the British people to the true foundation of economic development at home.<sup>53</sup> In 1790 Anderson founded the journal *The Bee*, devoted specifically to disseminating information about internal colonization and ecological exchange. Among Anderson’s subscribers and correspondents were Jeremy Bentham, George Washington, and Thomas Jefferson. *The Bee* was full of acclimatization proposals—for larch, poppies, Merino sheep, and other plants and animals. Some of the crops were intended as domestic substitutes for exotic commodities produced by slave labor: Silesian milkweed would replace cotton fiber and sugar beets would stand in for West Indian cane sugar. But like Hope, Anderson was also intrigued by the acclimatization of exotics, including trials in silkworm production. Together with Sinclair, Anderson founded the British Wool Society in 1790 to protect and preserve the Shetland sheep breed.<sup>54</sup> Other priorities among Scottish improvers included wasteland colonization, hemp culture, and alkali production. The professor of natural history at the University of Edinburgh, John Walker, joined forces with the Highland Society of Scotland in the 1780s and 1790s to promote kelp “plantations” as a substitute for Spanish barilla imports. Like Adam Smith, Walker believed that the New World transplant of the potato could radically improve the condition of the rural poor everywhere in Britain. He promoted Irish “lazybed” culture among Highland landowners, calling it a “domestic conquest, far preferable to one of a foreign nature.”<sup>55</sup> Archibald Cochrane, the chemical inventor and ninth Earl of Dundonald, argued that wasteland reclamation could make Britain self-sufficient

in food and raw materials like timber, hemp, and flax. Rather than depending on “precarious supply . . . from foreign States,” the “inexhaustible” peat mosses of Scotland and Ireland would provide all the “internal products of our Own Island.” Cochrane also invented a new tar extracted from coal rather than wood to lessen British dependence on Baltic naval stores.<sup>56</sup>

All of these efforts followed the same strategy, seeking to strengthen and diversify the national economy by means of private initiatives in civil society. Sinclair’s *Statistical Account of Scotland* was the magnum opus of internal improvement. In this monumental effort of twenty-one volumes (1791–99), Sinclair mobilized the Scottish clergy to gather information about local agriculture, population, and natural history at the parish level. Sinclair’s survey embodied Scottish civil cameralism in both a descriptive and prescriptive sense. These parish reports offer a rich record of improvement projects in the late Enlightenment. Sinclair’s aim was to establish a “Prussian” economy for Britain with self-sufficiency in food production, strategic stores, and industrial raw materials.<sup>57</sup> Hence, the *Statistical Account* recorded a broad range of crop trials, including tobacco, cudbear, rhubarb, foreign oats, Merino sheep, and larch. At the same time, it favored an ambitious liberal model for the circulation of useful knowledge. The appeal to the Scottish clergy was founded on voluntary participation, without formal coercive force or emolument. Enlightenment in Sinclair’s model was a process of informal learning and virtuous emulation. The parish reports provided a medium by which landowners and improvers could learn freely from each other about new crops and methods.<sup>58</sup>

Flax rearing was one of the most frequently discussed topics in *The Statistical Account of Scotland*. Scottish linen manufacturing grew sevenfold over the period from 1730 to 1790, but this success required ever-increasing flax imports from Russia and the Dutch Republic. Many improvers worried that the industry was dangerously vulnerable to external fluctuations and disruptions of trade. Scotland’s first agricultural society, led by Robert Maxwell, promoted self-sufficiency in flax as early as in the 1740s. The government-funded Board of Trustees, founded in 1727, also encouraged domestic flax culture with a system of premiums for the best growers. This interest in import substitution grew in strength during the American War of Independence, in part because Irish linen had become dependent on flax seed from New York and Pennsylvania, and in part because the price of Dutch seed rose substantially. Yet a move toward domestic production raised two difficult questions of natural history: What type of flax seed was best suited to the native climate? Were domestic seeds prone to degeneration and therefore in need of continual renewal? John Walker favored American seed for the Highlands and Hebrides. The surveyor Angus Macdonald promoted native Scots seed after testing it along with a Dutch variety. The Board of Trustees sided with Macdonald, recommending a variety cultivated in Haddington near Edinburgh. Ironically, domestic flax may have been too fine for the Scottish linen manufacturers, who preferred the more coarse varieties produced in Russia. The question of seed was in turn closely related to other problems of promotion. John Naismith warned in 1790 that the board’s activities had proven wholly insufficient in meeting manufacturing demand, producing only a quarter of the needed flax. During the French Revolutionary Wars, Dutch flax imports were interrupted again, leading to more calls for domestic production. Macdonald warned the members of the

Highland Society of Scotland that “no manufacture can be firmly established in a country which does not produce the raw materials it employs.”<sup>59</sup> The preacher and chemist James Headrick (an assistant of Sinclair) believed that Highland internal colonization, including flax culture, could make Britain into a “world” unto itself, self-sufficient in every important resource. A leading member of the Board, Lord Stonefield, complained that the structure of the premium system was misguided. Sinclair in turn attacked the Board for discontinuing the practice of distributing seed for free. The numerous comments on flax culture in Sinclair’s *Statistical Account of Scotland* should be read against this background of crisis and critique. The reports offered a synoptic map of Scottish cultivation, demonstrating its viability, not just in the central areas of linen manufacturing, but also on marginal soils far beyond them. At the same time, *The Statistical Account* presented a major departure from the board’s strategy. It published information of best practice and encouraged Sinclair’s readers to coordinate informally, bypassing the centralized organization and premium system of the Board of Trustees. This new strategy seems to have been effective. W. H. K. Turner notes that Scottish flax cultivation in fact peaked at the end of the Napoleonic Wars with more 16,500 acres dedicated to the crop. However, once the wartime emergency had passed and import costs fell, the area of diffusion contracted rapidly. When the first official statistics of land use became available in 1868, flax covered only 1,546 acres in Scotland. While a comprehensive analysis of this process lies beyond the scope of this account, it is clear that Scottish flax followed closely the pattern that we have already observed in other import substitution schemes.<sup>60</sup>

Scottish rhubarb, tobacco, and flax all shared a strong family resemblance. The goal was national self-sufficiency facilitated through informal networks and voluntary associations. Enlightened natural history played a decisive role in encouraging expectations of a malleable environment. The schemes also shared a common vulnerability. They were launched in the uncertain years after the American War of Independence and reached their zenith during the French Revolutionary and Napoleonic Wars. This peculiar association with wartime crisis accounts for the evanescence of these schemes. By definition, they were epiphenomena of empire, vulnerable to blocking moves by imperial lobbies, at a distinct disadvantage in the legal and economic framework favored by the fiscal-military state. Yet too much hindsight obscures the widespread historical appeal of this movement. Many Scottish improvers saw national autarky and ecological diversification as a more prudent long-term strategy than long-distance trade or colonial conquest. Rhubarb, tobacco, larch, flax, Shetland sheep, sugar beets, and other import substitutes were vital means of reimagining the fate of the nation in an age of imperial crisis.

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#### NOTES

1. Andrew Wight, *Present State of Husbandry in Scotland*, (Edinburgh, 1784), 4:626.
2. *Ibid.*, 589.
3. *Ibid.*, 594.
4. *Ibid.*, 124, 587–89, 594–96, 602, 609, 626; William Marshall, *Rural Economy of Yorkshire*, 2 vols. (London, 1788), 2:79–82; A. A. Erskine, *Tobacco Growing in Great Britain and Ireland* (London: Nichols, 1886), 31–32. For an alternative origin, see David Ure, *General View of the Agriculture of*

*the County of Roxburgh* (London, 1794), 43. On the precise date and diffusion of Jackson's crop, see National Library of Scotland [henceforth cited as NLS] MS 11198: 89, 141.

5. Wright, *Present State*, 4:609.
6. For more on import substitution in this context, see Fredrik Albritton Jonsson, *Enlightenment's Frontier: the Scottish Highlands and the Origins of Environmentalism* (New Haven, CT: Yale Univ. Press, 2013), especially chapters 4 and 6.
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32. Morton, *John Hope*, 16–17; D. M. Turner, "The Economic Rhubarbs: A Historical Survey of their Cultivation in Britain," *Journal of the Royal Horticultural Society* 63 (1938): 355–70; Foust, *Rhubarb*, 126–29.
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58. For cash crops and exotic introductions, see *OSA*, for example, Tobacco: II: 324, V: 94–95, XVI: 372; Cudbear: XV: 113–15; Rhubarb: XX: 439; Dutch oats: I: 216, XX: 338; Tartarian oats: XVII: 585; Polish oats: III: 136, VIII: 23; Russian barley: XI: 601; Merino sheep: IV: 219, 519, V: 300, IX: 317, XI: 38, XVII: 586, XVIII: 73, 571; Larch: III: 9, V: 56, IX: 460, XII: 151, XV: 3, 67, 144–45, 220, 254, 291, 439, XVII: 196, 354, XVIII: 73, 459, XIX: 156, 387, 428, XX: 31.

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60. W. H. K Turner, “Flax Cultivation in Scotland: An Historical Geography,” *Transactions of the Institute of British Geographers*, no. 55 (1972), 134–39; *THSS* 1:60; 2:242, 462, 469; *OSA* (select examples), V: 416, VI: 77, 94, 343, 398, VII: 270, 381, VIII: 477, IX: 145, XI: 109, XIII: 133, 179, XVI: 473.

