

**Manuscript version: Author's Accepted Manuscript**

The version presented in WRAP is the author's accepted manuscript and may differ from the published version or Version of Record.

**Persistent WRAP URL:**

<http://wrap.warwick.ac.uk/113094>

**How to cite:**

Please refer to published version for the most recent bibliographic citation information. If a published version is known of, the repository item page linked to above, will contain details on accessing it.

**Copyright and reuse:**

The Warwick Research Archive Portal (WRAP) makes this work by researchers of the University of Warwick available open access under the following conditions.

Copyright © and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners. To the extent reasonable and practicable the material made available in WRAP has been checked for eligibility before being made available.

Copies of full items can be used for personal research or study, educational, or not-for-profit purposes without prior permission or charge. Provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

**Publisher's statement:**

Please refer to the repository item page, publisher's statement section, for further information.

For more information, please contact the WRAP Team at: [wrap@warwick.ac.uk](mailto:wrap@warwick.ac.uk).

## Potatoes and the Hispanic Enlightenment<sup>1</sup>

Among the new publications tempting Spanish readers in 1785, alongside a comedy about jealous women, a how-to manual on forensic surgery, and a six-hundred page translation of the rulings of the Council of Trent, was a modest pamphlet about potatoes. Its author was an ex-patriot Irishman, Henry (or Enrique) Doyle. Doyle had for some decades resided in Spain, pursuing an undistinguished career in textile manufacturing. He had already drafted several essays on religious themes, which had made no impact whatsoever on the Spanish reading public. His writings on potatoes, however, were a phenomenal success. The 1785 pamphlet was followed in 1797 by a longer treatise issued with royal approbation at the behest of several important ministers, which was into its fourth edition by 1804. Newspapers and journals hailed Doyle as a patriotic and enlightened contributor to public happiness, and seconded his ambition of extending potato cultivation across the length and breadth of Spain.<sup>2</sup>

According to Doyle, the potato was a virtual wonder-food. Drawing on his familiarity with Ireland, he informed Iberian readers that the tuber was “healthy and nourishing”, and in northern countries adorned the tables of the rich while also sustaining the poor, “who eat scarcely any other food, and with this diet stay healthy and robust”. It was immensely versatile, as it could be consumed:

in many different ways—boiled, roasted, fried, in salads, in stews or mixed with other vegetables. Peeled and dressed with salt, garlic, oil and water it is a good,

very cheap food for the poor. Eaten with butter they are nourishing and enjoyable. Cooked, peeled, and mixed with sugar, lard and eggs they can be used to make tarts, puddings and other delicate pastries; dissolved in broth or milk it is a healthy and nourishing food for nursing infants and children.<sup>3</sup>

Doyle expatiated on the potato's many merits, which included not only its culinary qualities, but also its potential as an animal feed, the ease of cultivation, and its medical ability to correct acrid humours.

Doyle's *Tratado sobre el cultivo, uso y utilidades de las patatas ó papas, é instrucción para su mejor propagación* [*Treatise on the Cultivation, Use and Usefulness of Potatoes, or Papas, and Information for their Greater Propagation*] was not an anomaly. His passionate and verbose celebration of the potato—the 1804 edition ran to some 250 pages—was one of hundreds of works published across late eighteenth-century Europe dedicated to the tuber. Agronomists, gentlemen farmers, botanists, priests, philosophers and other patriotic individuals penned treatises, conducted experiments, sponsored agricultural competitions, disseminated seed potatoes, and in general mounted a sustained and pan-European effort to encourage the cultivation and consumption of potatoes. Although many edible plants from Siberian buckwheat to wild rice also attracted interest, the volume, geographical spread, and messianic tone of these potato-texts is remarkable.<sup>4</sup> What explains such pervasive interest in the new-world potato?

This article examines potato promotion in the eighteenth-century Hispanic world. Hispanic potato-celebration extended beyond Europe, uniting enlightened communities across Spain's empire. The potato's advocates in Spain and its colonies considered the vegetable from the perspective of new ideas about the relationship between food, healthy

populations, benevolent governance and the wealth and grandeur of nations. On both sides of the Atlantic, for men such as Doyle potatoes formed part of a larger complex of enlightened improvements that would lead, ultimately, to a stronger and more wealthy state. These new ideas about the centrality of nourishing food to the practice of governance criss-crossed the empire, helping to establish the potato as a symbol of enlightenment. Such trans-Atlantic conversations were a characteristic feature of the Enlightenment. Indeed, as scholars increasingly argue, the Enlightenment cannot be understood separately from these global conversation, which in many ways *were* the Enlightenment.

The potato's eighteenth-century Hispanic career also reveals the varied local articulations of enlightened ideas. While the potato was a popular object of investigation in many parts of Europe and its colonial hinterlands, savants in Spain and the Indies had a unique relationship with the tuber. As they often noted, it was Spaniards who first introduced potatoes to Europe, and who therefore deserved credit for the increase in human well-being that they insisted it enabled. At the same time, in its Spanish American homeland the potato was a low-status food associated with the indigenous population. There, enlightened celebration of Spain's special relationship with the bounteous potato collided with the hierarchical nature of colonial society. Examination of pan-Hispanic potato promotion schemes illuminates both the global reach of enlightened discourse, and also its intensely local character. The Enlightenment constituted a process of movement and exchange, of objects and knowledge, whose meanings changed as they travelled. This essay's overall aim is thus to explain why, at a certain moment, individuals across

the Hispanic world began to celebrate potatoes, and what this tells us about the Enlightenment.<sup>5</sup>

### Precious Root

The tuber was the beneficiary of an enormous propaganda campaign in late eighteenth-century Spain aimed at promoting this “precious root”.<sup>6</sup> Charles III himself sponsored the publication of Doyle’s treatise and in 1784 advised patriotically-minded Spaniards to encourage greater use of potatoes. Landlords in various parts of the peninsula followed suit, urging their tenants to plant the tuber.<sup>7</sup> Even before the monarch threw his weight behind them, potatoes were embraced by the “economic” societies established in increasing numbers in the second half of the eighteenth century in many Spanish cities. These organisations brought together avowedly enlightened members of the bourgeoisie and aristocracy for the purpose of advancing useful knowledge within an explicitly patriotic framework. Agricultural improvements loomed large in their concerns. Alongside their investigations of new fodder crops and superior manures they consistently championed the potato as an excellent source of food for both people and animals.<sup>8</sup> Economic societies in Madrid, Aragón, and elsewhere employed their standard repertoire of techniques—sponsored competitions, published essays, practical experiments—to encourage their cultivation and consumption. The Real Sociedad Económica Matritense de Amigos del País for instance regularly offered premiums for the farmer who harvested the largest potato crop. The Real Sociedad Económica de Valencia did likewise. The Basque Society also offered prizes and conducted experiments in potato cultivation and the manufacture of potato bread, an object of particular

fascination across Europe. They, like their counterparts in other parts of the peninsula, translated an array of agricultural treatises on the potato, because, as they explained in a 1786 report, they had long considered the potato “one of the most important crops that could be introduced to the benefit of the country”. They also arranged for Doyle’s pamphlet to be read publically, to disseminate his promotional message.<sup>9</sup> Botanists similarly experimented with new varieties and new methods of cultivation, and publicised their findings in journals and memoirs. The potato, reported Claudio Boutelou, head gardener at the Real Jardín Botánico de Madrid, “is without doubt the most valuable item we have received from the new world”. Potatoes, rather than silver, thus constituted the America’s greatest contribution to European well-being and prosperity.<sup>10</sup>

This potato-talk resonated across the pages of Spanish newspapers such as the state-sponsored *Semanario de agricultura y artes dirigido a los párrocos*, which was founded in 1797 with the express purpose of disseminating useful knowledge on all manner of agricultural enterprises.<sup>11</sup> Its many articles on potatoes explained new methods of cultivation and storage, described how to convert them into animal food, and detailed the tastiest ways of consuming them.<sup>12</sup> The *Semanario*’s editors for instance calculated the relative productivity of potatoes and wheat, concluding that wheat was more labour intensive, used more fertiliser, and produced a vastly lower yield.<sup>13</sup> It published extracts from English and French works on the potato, as well as, naturally, an enthusiastic review of Doyle’s treatise.<sup>14</sup> Interested subscribers were offered seed potatoes gratis so that they could conduct their own experiments.<sup>15</sup>

The *Semanario* moreover published letters from readers reporting on their successes in growing potatoes and cajoling others to eat them.<sup>16</sup> Particularly extensive

correspondence came from the parish priest of the town of Linares, in Salamanca. Having read about the benefits of using potatoes in place of wheat flour when making bread, he determined to encourage their use among his parishioners and tenants.<sup>17</sup> As he insisted, society received far greater benefit from such practical schemes to “improve and increase our supply of food”, than from abstract, esoteric knowledge about great men or historical events of past eras.<sup>18</sup> His first missive prompted letters from other subscribers requesting details, which the priest provided in a series of updates.<sup>19</sup>

The potato’s many promoters were quite clear about the reasons for their interest: potatoes ensured a healthy population and so were of vital importance to the state. Doyle for instance was explicit about this associations between potatoes, population and political economy. As he explained in his 1797 treatise:

As a population grows and multiplies, so it becomes necessary not only to improve the soil and increase the area under cultivation, but also to take advantage of other roots, plants and vegetables suited to the quality of the land and suitable for ordinary people to eat to sustain themselves, in order to keep commerce in balance at moderate prices at all times. Writers agree that the potato supplies this necessary help both because it is abundant and cheap, and also because it is healthful.<sup>20</sup>

Spain’s well-being, he concluded, depended not only on the government but also on the “zeal and vigilance of good patriots”, who should therefore promote potato consumption by the poor. All this, he made clear, would rebound to the benefit of the economy overall. After all, he insisted, “expensive food and cheap labour are incompatible”.<sup>21</sup>

Doyle's text provides a clear example of the close associations between food, healthy populations, political economy and the new models of governance that began to emerge in the late eighteenth century. In particular, enlightened discussion of new foods was inseparable from the on-going debate over the concept of "population". Philosophers, *économistes*, officials and other members of the republic of letters engaged in a prolonged examination of the relationship between the number of people inhabiting a territory and its wealth. Adam Smith expressed well the close connection between the two when he asserted that "the most decisive mark of the prosperity of any country is the increase of the number of its inhabitants".<sup>22</sup> As Michel Foucault argued some decades ago, these population debates signalled a new approach to the exercise of power.<sup>23</sup> These new strategies of power linked the management and regulation of populations to the economic and military strength of the state. The strength, size and productivity of the population thus became increasingly central to new models of governance that viewed the inhabitants of a territory as a resource to be analysed, developed and utilised. The state needed to understand, and thereby control, the large forces that themselves shaped the population. "The population", in other words, was far more than a miscellaneous collection of individuals inhabiting a territory. It was an essential resource. Good governance entailed knowing how many people inhabited the national territory, their economic (and non-economic) activities, and, especially, whether they were fit, healthy and able to work.<sup>24</sup>

A healthy and economically-active population required an ample supply of nourishing food. For this reason a nation's strength was closely correlated with its possessing "the greatest possible quantity of foodstuffs", as the enormously influential

economic theorist Jean-François Melon noted.<sup>25</sup> A plentiful supply of food not only ensured a healthy and growing population but also lowered the cost of living, and with it the cost of labour. That, in turn, would stimulate commerce and industry, another fundamental responsibility of any enlightened monarch. Such concerns were not purely theoretical. Advocates of these new ideas also hoped that by implementing more effective agricultural and commercial structures states could avoid the politically destabilising effects of food shortage. Famines such as the one that struck Naples in 1764 reverberated across the continent, provoking riots in Madrid, for instance.<sup>26</sup> Debates about the merits of free trade in grain, the quest for more efficient foods such as the potato, and investigations into innovative agronomic techniques all reflected this new focus on the relationship between governance, food and population.

The quality of the food supply, for the eighteenth-century science of the state, was thus both a matter of public order, and also a central component of a larger model of political economy that associated national wealth and greatness with the energy and vigour of the working population. In this way, abundant, healthy food became increasingly central to the exercise of governance. It is this reconceptualisation of the relationship between food and the wealth and power of nations that explains why countries from Switzerland to Sweden began encouraging the cultivation of potatoes, and why eighteenth-century *philosophes* and scientists so assiduously investigated their many qualities.

A substantial body of scholarship has demonstrated that Spanish officials, scientists and philosophers closely followed and engaged with these pan-European debates about population, political economy and the role of efficient agricultural

production in fomenting commerce and industry. Spanish writers evaluated the merits of new economic ideas such as those of Adam Smith or the physiocrat François Quesnay. They read French treatises on the potential of innovative agronomic practices to transform commercial agriculture, and they composed their own contributions to these international conversations.<sup>27</sup> Enlightened Spaniards moreover shared the widespread conviction that healthy and economically-active subjects were essential for the success of the state. “There is not a single politician”, asserted one, “who does not accept the clear fact that the greatest possible number of law-abiding and hard-working men constitutes the happiness, strength and wealth of any state”. To demonstrate this was easy, he affirmed, since even the dimmest mind could appreciate that agriculture, commerce and the arts, the basis of all wealth, increased in proportion to the size of the productive population. A vigorous population also allowed a state to resist foreign invasion, he noted, concluding “I do not believe it is possible to deny this self-evident truth”.<sup>28</sup> “A state’s true resources lie in the happiness and robustness of the body politic, in an extensive and prosperous agriculture, in manufacturing, [and] in merchants”, agreed Francisco Cabarrús, an important trader and the founder of the Banco de San Carlos.<sup>29</sup>

Spanish writers also shared the consensus that any population, however large, was useless if it was not actively engaged in productive labour. In a treatise on how to energise Spain’s economy commissioned by Ferdinand VII, Bernardo Ward for instance reiterated that “the most fundamental element of any economic system is ensuring that men are usefully employed”.<sup>30</sup> The labour potential latent in the population was an essential resource, and good governance consisted precisely in unlocking this potential. Failure to do so was, he stressed, “the most culpable and damaging omission the State

could suffer”.<sup>31</sup> For Ward, as for so many other writers, managing the population constituted the core of effective governance.

Spanish promotion of the potato referred directly to these close connections between energetic populations and the wealth and power of the state. Throughout his treatise Doyle for instance stressed that although the potato was eaten with pleasure by the wealthy, its utility lay fundamentally in its potential as a food for working people. He reiterated that it was highly nourishing, and that potato-eaters were “healthy and robust”. Like many other writers, he cited the hearty Irish peasant as evidence for the potato’s healthful, sustaining qualities. Moreover, because these peasants consumed potatoes Ireland was able to export millions of pounds of wheat, to the benefit of landowners and the treasury.<sup>32</sup> A working population subsisting on potatoes therefore fuelled agricultural and commercial success, at least from the perspective of the state and large landowners. The priest from Linares made a similar point when he suggested that greater cultivation and consumption of potatoes would halt the ruinous expense occasioned by Spain’s reliance on wheat imports, which served to enrich neighbouring states who, he predicted, would one day use this wealth to attack Spain.<sup>33</sup> The connections between cheap food and a strong state were also demonstrated by the potato’s oft-praised potential as a food for soldiers. Doyle recommended its use in the muniton bread commonly served to recruits, and later editions of his treatise pointedly observed the potato’s popularity among regimental soldiers in Madrid.<sup>34</sup>

Further adding to its appeal was the potato’s ability to promote lactation in nursing mothers, and to provide a suitable substitute for breast-milk, both qualities which Doyle addressed in his treatise.<sup>35</sup> Infant feeding and its links to infant mortality were

topics of keen interest in many parts of Europe, precisely because a strong and productive population depended on its ability to reproduce itself. Spanish books on the topic proclaimed this association clearly in their very titles: *Concrete Causes of Mortality in Foundlings during their Early Years: Remedies for this Serious Evil, and Method for Making them into Useful and Christian Citizens to the Notable Increase to Spain's Population, Strength and Wealth*, reads the title of one such work from 1801. Its author, a priest and trustee at Pamplona's general hospital, stated explicitly that recovering these doomed babies for the state would increase the population of soldiers and workers: "how many individuals—which we now lack—would we have for public works! How many labourers! How many honest grenadiers!". Not surprisingly he endorsed potatoes as a highly suitable food for orphans.<sup>36</sup>

The active promotion of the potato in late eighteenth-century Spain demonstrates well how the health of individual members of the population became linked to the overall health and stability of the state, and its economy. Late eighteenth-century interest in the potato reflects these new models of statecraft, and the increasing focus on building the energetic populations that would allow the state to reap "the benefits of citizens being usefully occupied", as Charles III put it in 1784.<sup>37</sup> By promoting potatoes these enlightened bureaucrats, savants and priests both advanced the interests of the Spanish nation, and also demonstrated to other members of the republic of letters their patriotic commitment to public happiness and the common good.

### Colonial Potatoes

To what extent did this association between food, population, and the wealth and happiness of nations extend to Spain's colonial possessions? Colonies played a key role in the new models of statecraft that were under construction in Bourbon Spain. Motivated by enlightened debates over the true sources of national wealth and grandeur, statesmen sought to reform Spain's relationship with its new world possessions to better conform to these new ideas. Converting the Indies into a productive source of revenue was a central aim of Bourbon reformers. The loose, inefficient structure of Spain's empire irritated these men, who complained that Britain and the Netherlands were far more effective in utilising the advantages offered by colonies. Their campaign to modernise agricultural and commercial practices thus embraced both Spain and its American empire.<sup>38</sup>

At the same time, the precise value of colonial spaces within the wealth-population calculus remained unclear. Did an increase in the colonial population translate into an increase in the state's "happiness, strength and wealth" in the same way as in Spain itself?<sup>39</sup> Enlightened statesmen were uncertain. On the one hand, under-population in the Indies was regularly identified as an obstacle to economic growth by both peninsular and colonial writers. Animated by such concerns a newspaper in New Granada for instance announced a prize of fifty pesos for the best essay on how to solve the problem of under-population. As the advertisement for the competition stated, "without an increase in the population the kingdom will never experience true happiness".<sup>40</sup> Reformers in both Spain and the Americas displayed a particular interest in the size, health and vitality of the creole population. Projects in sanitation or quarantine systems, criticism of ill-chosen wet nurses, and other endeavours consistently sought to build up the fragile bodies of creoles.<sup>41</sup>

Overall, however, advocates of reform on both sides of the Atlantic were most exercised by the “apathy” that supposedly engulfed much of the American population. This, rather than an absolute shortage of people, was identified as the real obstacle to growth. After all, as the Bourbon official Bernardo Ward noted, “when one says that a sovereign’s wealth consists in the number of his vassals, one means the number of *useful* vassals, since a million idle vagabonds and professional beggars, far from being useful, are an impediment to the state, which would be much better off, and wealthier, without them”.<sup>42</sup> The problem of the Indies, most critics agreed, was not under-population but under-employment. The winning essay to the New Granadan competition explained this clearly. Citing writers such as Ward, it stated that “a kingdom cannot be said to be well populated, even if it is bursting with inhabitants, if the latter are not hard-working and engaged in useful labour”.<sup>43</sup> The Americas were apparently full of perfectly capable people who were not doing anything productive. An increase in the American population was thus not a central aim of enlightened projects of reform. As a result, the close associations European philosophers perceived between healthy populations, food supply, and the wealth of nations loosened when placed in a colonial context. If anything, food was said to be excessively abundant, making it all too easy to live a life of idleness and inactivity.<sup>44</sup> Nourishing foods retained their powerful symbolic charge as an emblem of good governance, but their practical ability to increase the working population was far less relevant.

Colonial discussion of the potato demonstrates well this cleavage between the practical and the discursive. The vigorous European pro-potato propaganda resonated strongly with the concerns of enlightened savants in Spanish America eager to

demonstrate their commitment to the pursuit of useful knowledge and the public good. Creole elites across the Indies lauded the potato as a distinctly American contribution to human happiness, and emphasised Spain's (and their) commitment to advancing botanical science through the investigation of valuable new-world foodstuffs. Their discussion of the potato helped articulate a colonial vision of paternalist improvement and benevolence. At the same time, colonial potato-boosters engaged in few practical schemes designed actually to increase potato consumption.

A clear example is provided by the Real Sociedad Económica de Amantes de la Patria de Guatemala, founded in 1796 by members of the landed and merchant elite.<sup>45</sup> Like its analogues in Spain, the Guatemalan Society was committed to the dissemination of useful knowledge. Improved agricultural techniques featured largely in its concerns. As the Society stressed, its remit was “the perfecting of agriculture and the mechanical arts”. Most of its attention to agriculture was focused on commercial crops; the “decay” of cacao cultivation was a topic of persistent concern, as were efforts to develop the linen industry.<sup>46</sup> The Society similarly experimented with new fodder crops such as Guinea grass, for which it sought out seeds and published guides to cultivation.<sup>47</sup> The Society was also concerned with the kingdom's food supply. Its newspaper, the *Gazeta de Guatemala*, echoed the views of Spanish economic theorists that it was impossible for arts and industry to flourish when food was expensive or scarce. It monitored the availability and cost of basic foodstuffs such as maize, and reported on fluctuations in both.<sup>48</sup>

Members of the Guatemalan Society were perfectly familiar with the potato's lofty reputation in Spain. It subscribed to Spain's principal agricultural journal, the

*Semanario de agricultura y artes*, which enabled members to follow that paper's regular reports on the potato's merits and its promotion by states and economic societies across Europe.<sup>49</sup> As a result the Society was well-placed to replicate the enlightened potato talk that featured so prominently in Spanish publications. The *Gazeta de Guatemala* and the Society's annual reports for instance reprinted extracts from the essays of the celebrated Count Rumford, famous for his low-cost potato soup. The *Gazeta* likewise reproduced Spanish recipes for economical potato bread such as the one popularised by the letter-writing priest from Linares, who believed it would reduce his parishioners' reliance on expensive wheat.<sup>50</sup>

In contrast to the situation in Spain, however, in Guatemala potatoes were in short supply. Potato bread, or Rumford soup, scarcely provided useful alternatives to local staples, which were based on maize. Nor did the Society make any other effort to increase potato consumption among Guatemalans, a major aim of analogous European organisations. They sponsored no competitions for the largest potato harvest, disseminated no seed potatoes, and published no pamphlets explaining cultivation techniques "in simple language", although they adopted all these methods in their efforts to promote Guinea grass and other commercial crops. In lauding potatoes, the Society's aim, evidently, was not to address practical concerns about food supply.

Rather, potato-talk was enlightenment-talk. The Society's enthusiasm for the potato reflected its commitment to an Atlantic conversation about enlightenment—what the historian Jordana Dym calls a 'shared Enlightenment agenda'. As scholars have long argued, such conversations to a significant degree *were* the Enlightenment. When colonists in Guatemala (or philosophers in Prussia) referred to enlightenment they had in

mind not only practical schemes for the betterment of mankind, but also a desire to keep up to date with new developments, and the conviction that the exchange of ideas would in itself lead to greater harmony and human happiness. *Ilustración* was a discursive practice and a state of mind.<sup>51</sup>

Discussion of potatoes thus demonstrated the Society's fluency in the language of improvement, public happiness and good governance. This, of course, was one of the functions that colonial botany served in Spain itself. As the historian Daniela Bleichmar has noted of the novel plants grown in Madrid's botanical garden, "their value lay in their foreignness, and the botanical garden used them to strengthen its prestige", quite independently of the success of any particular scheme of agricultural promotion and acclimatisation. In Spain and Guatemala, as elsewhere, botanical knowledge was a form of cultural capital.<sup>52</sup> Recipes for potato bread therefore appeared in the *Gazeta de Guatemala* alongside up-to-date references to European philosophers, debates over the merits of breast-feeding, public health campaigns, and the need to modernise agricultural practices. In this way the Society's members were able to inscribe themselves into the republic of letters, regardless of the practical impact of their endorsement of the potato.

The gulf between the potato's importance as an emblem of enlightenment and its relevance as a foodstuff is particularly clear in the case of Peru, where Spaniards had first encountered the potato in the sixteenth century. The Peruvian analogue of the Guatemalan Society was the Sociedad Académica de Amantes de Lima, founded in 1790 by a group of largely creole intellectuals based in the viceregal capital. Its members enthusiastically embraced the rhetoric of utility, reason and enlightenment. Their journal, the *Mercurio peruano*, published from 1791, returned repeatedly to the need to foment

agriculture, commerce and industry, and displayed a keen awareness of the importance of natural history, in particular, to wealth and improvement. As the botanising bishop of Trujillo observed in a letter reprinted in the *Mercurio*, knowledge of natural history and geography was vitally important to governance.<sup>53</sup> The journal likewise detailed the useful and unusual plants cultivated in Lima's botanical garden and described Spain's numerous state-funded botanical expeditions around the world. 'states have always viewed the acquisition of new plants as matters of public interest . . . Our capital has not been dozing in this regard: we do not lack inquisitive patriots who for the last thirty years have laboured to adorn our fertile country with whatever they can acquire from the vegetable kingdom', the journal boasted in 1794.<sup>54</sup>

The Peruvian Society lauded Spain's role in introducing the potato to Europe, which in its view helped disprove hostile assertions that Spain's colonisation of the Americas had contributed nothing to the advancement of humanity. *Philosophes* such as Voltaire or the Abbé Raynal might claim that the world had derived no benefit from these colonial endeavours, but for Peru's enlightened savants the potato offered an effective rebuttal.<sup>55</sup> Viewed from this perspective, the potato was evidence of Peru's, and Spain's, contribution to knowledge and participation in the community of enlightened states. Spanish writers made similar claims. The potato alone, insisted the letter-writing priest from Linares in one of his many communications to the *Semanario*, vindicated all the labours of Spain's under-appreciated conquistadors.<sup>56</sup> The same point was made by other contributors to the journal, who agreed that through the potato Spaniards had provided nourishing sustenance for an ungrateful world.<sup>57</sup> These writers were particularly annoyed by the widely-held (and enduring) view that potatoes had in fact been brought to Europe

by Walter Raleigh. They patiently explained that it was Spaniards to whom the universe was indebted.<sup>58</sup> (French philosophers were unconvinced by such defences of Spanish colonialism. “How dare you try to balance the scales with the cochineal insect [and] the potato?”, complained the Scientific Academy of Lyon.<sup>59</sup>)

At the same time, enlightened Peruvians could not have been less enthusiastic about potatoes when it came to eating them. Europeans first encountered potatoes in the Andes, where they formed an important part of the local diet, alongside maize, quinoa and a range of vegetables. Settlers quickly associated this unfamiliar tuber with the indigenous population. As one of the earliest European descriptions stated, the potato was “a certain food eaten by Indians”.<sup>60</sup> Chroniclers and travellers consistently stressed the centrality of potatoes to the indigenous diet, and described in detail both the ways in which potatoes were consumed and the novel methods employed in making *chuño*, the long-lasting freeze-dried potatoes that formed a staple for the region. These foods, colonial writers agreed, were “the bread *of the Indians*”.<sup>61</sup>

Potatoes were moreover important within Andean religion, a fact of which colonial writers were well aware. The Jesuit naturalist and theologian José de Acosta for instance noted in his 1590 *Natural and Moral History* that Amerindians venerated certain oddly-shaped potatoes, “which they call *llallahuas* and kiss and worship”. In pre-colonial times potatoes were often presented as offerings to deities, constituting both a gift and a meal. Catholic investigations into the persistence of “idolatry” revealed that potatoes continued to feature in clandestine religious ceremonies well after the establishment of the colonial state. Such documents record offerings of potatoes, alongside coca leaves, llama fat, guinea pigs and other objects also strongly associated with the indigenous

world. These associations endured in both community memories and on-going agricultural practices. The Andean chronicler Felipe Guaman Poma de Ayala for example described clearly the interconnections between the agricultural cycle, and in particular the planting and harvesting of potatoes and maize, and the religious rituals that once underpinned the Inca state. Other accounts recorded the veneration of the Potato Mother, daughter of the earth goddess Pachamama, and the adventures of Huatya Curi, the mythic “Baked Potato Gleaner”. Multiple sources also described the cyclical connections that linked human bodies to plants and the universe. From both a culinary and a cosmological perspective, the potato belonged to the Amerindian world, a position that it has to some degree maintained.<sup>62</sup>

In the Viceroyalty’s hierarchical culture, this was scarcely an endorsement of the potato’s relevance as a food for Europeans or creoles. Indeed, there is some evidence that even before the arrival of Europeans potatoes did not enjoy a particularly high status as a foodstuff.<sup>63</sup> To be sure, the realities of life in the colonial Andes meant that in practice potatoes penetrated deeply into the foodways of the settler class. The pampered nuns at the convents of Santa Teresa and Santa Catalina in Arequipa regularly consumed potatoes, as their account books reveal. Even chuño, sprinkled with sugar, sometimes found its way onto such tables. The colonial diet was inevitably a compromise between practicality and aspiration, as scholars such as Jeffrey Pilcher have shown.<sup>64</sup> Nonetheless, for the *Mercurio*’s writers and readers, potatoes were strongly connected to the indigenous world, and therefore to poverty and backwardness. The *Mercurio*’s discussion of the tuber largely reproduced this set of associations. “Paltry” and “miserable” were the words most closely linked to potatoes in its pages.<sup>65</sup>

Worse, some Peruvian writers suspected that potatoes were actually unhealthy. In the thesis that earned him a medical degree from the University of Montpellier, the Limeño José Manuel Davalos attributed the ailments typically afflicting the city's residents to their overuse of local foodstuffs, most notably heavily seasoned pork, manioc and potatoes. Citing Linnaeus, Davalos noted that the potato "is a true species of *Solanum*, and hence it is easy to judge it to be suspect. If used frequently it produces a harmful effect even in small quantities".<sup>66</sup> The *Mercurio* likewise published warnings about the lethal effects of excessive potato consumption by travellers, especially when accompanied by spicy foods and alcohol. At best travellers could hope for indigestion, but a fatal dysentery was more likely.<sup>67</sup> The doctor Hipólito Unanue, one of the founders of the Society, agreed that these windy roots, eaten by Lima's poor, tended to turn sour in the stomach, and so were best avoided.<sup>68</sup> Far from promoting potato consumption, Peru's community of patriotic savants discouraged its use.

In reality, potatoes were a significant commercial crop in eighteenth-century Peru. From the earliest days of the colony potatoes had formed part of the tribute demanded of Amerindians, because Spaniards recognised their potential as a commodity. They remained an important item of commerce within the viceroyalty and between neighbouring colonies. Grown by indigenous and non-indigenous farmers alike, potatoes were traded up and down the Andes and along the Pacific coast, providing a handsome profit for those able to mount a large-scale trade, as the *Mercurio* itself documented. Potato prices in the Lima market in fact increased during the years of the paper's publication.<sup>69</sup> Within the pages of the *Mercurio*, then, "potato" was at once a profitable commodity, a despised food, and an example of Hispanic enlightenment.

### Conclusions: Potatoes and the Hispanic Enlightenment

These stories reveal much about the role of food in the eighteenth-century enlightened imagination. The historian Javier Usoz has noted that during the Enlightenment “writing about economics . . . was the equivalent of writing about politics and governance”.<sup>70</sup> The same might be said regarding writings about food. The close associations between strong populations, nourishing foods, and enlightened governance meant that elite discussions of diets were rarely concerned solely with practical matters of supply, important though these were. This is particularly clear in the discussions of Spain’s role in bringing potatoes to Europe. For enlightened patriots in Spain and the Indies, the dissemination of this valuable root provided concrete evidence that Spain’s colonisation of the Americas had advanced the well-being of all mankind. From this perspective the appeal of potatoes lay in their ability to symbolise benevolence, improvement, and public happiness. Praising potatoes was a form of participation in the republic of letters.

As Antonello Gerbi demonstrated half a century ago, Spain’s place within this bright circle of enlightened nations was severely questioned by other European philosophers. In the *Encyclopédie* Denis Diderot and Jean le Rond D’Alembert described Spain as a torpid backwater whose inhabitants preferred to loll about drinking chocolate, rather than engage in philosophical enquiry or further the cause of useful knowledge.<sup>71</sup> “With few exceptions, the image that contemporaries offered is of a country resistant to enlightenment, rooted in superstition and ignorance, subject to the Inquisition and ruled by the clergy”, notes one study of Spain’s image in eighteenth-century France.<sup>72</sup> Nor

were Spain's imperial ventures in the Americas viewed any more positively. Far from following philosophical and scientific developments, creoles spent their days sunk in "barbarous luxury, pleasures of a shameful kind, a stupid superstition, and romantic intrigues", in the opinion of writers such as the Abbé Raynal.<sup>73</sup>

These barbs stung in part because Hispanic *ilustrados* knew them to be unjust. A growing scholarship now demonstrates that the Enlightenment sank deep roots into Spanish political culture. Projects as diverse as the reform of cooking facilities in Madrid poorhouses, the teaching of the new theories of political economy, and the promotion of improved agricultural practices were enthusiastically supported by private individuals, organisations and the state as positive contributions to science and the public good.<sup>74</sup> Over fifty scientific expeditions were dispatched around the globe by the Bourbon state, charged with collecting useful knowledge to enrich Spanish industry and promote enlightenment. Wealthy ladies not only hosted *tertulias* to discuss the latest developments in the arts and sciences, but themselves engaged in experiments and investigations into all manner of topics. The culture of improvement embraced artistic taste, military engineering, public health, popular morals, commercial monopolies and much more.<sup>75</sup>

Spain's American colonies did not stand aloof from these concerns. Botanical gardens, astronomical observatories, schools of mining, reforms of primary education, campaigns for street lighting, and attempts to ban cockfighting and public drunkenness appeared across the hemisphere. Gentlemen scholars drafted reformist treatises infused with a belief in the power of human reason, while Catholic officials sought to reform religious practice to eliminate folk customs and baroque extravagances. Colonial officials and local philosophers engaged in the delicate balancing act of implementing such

enlightened schemes while preserving or indeed reinforcing existing social hierarchies.<sup>76</sup> The potato vogue in the eighteenth-century Hispanic world forms part of this broader enlightened programme. Discussion of the potato and its contribution to human happiness resonated across the Atlantic. Spanish newspapers published articles on the tuber penned by Peruvian naturalists, and Peruvian and Guatemalan newspapers reprinted reports on investigations undertaken in Spain. Information did not flow uni-directionally.

In a recent essay on the global Enlightenment, the historian Sebastian Conrad suggested that scholars should focus less on the origin of ideas and practices, and more on their interconnections. Far from viewing the Enlightenment as a European phenomenon that radiated outward from Paris and London, scholars increasingly frame it as set of global encounters that were articulated locally.<sup>77</sup> These local articulations were not mere echoes of events in Europe but rather possessed their own dynamics and internal logics. Nor can we separate the Enlightenment's European manifestations from these encounters in other parts of the world. Historians of science have demonstrated that during the eighteenth century extra-European dialogue played a central role in the construction of enlightened European knowledge itself. "Important parts of what has been passed off as European, or Western, science were actually made elsewhere", the historian Kapil Raj has observed.<sup>78</sup> The botanical knowledge displayed (for instance) in Madrid's royal gardens of necessity relied on complex inter-actions that took place far from Spain between indigenous people, local elites, mobile scientists and enlightened officials.<sup>79</sup> From this perspective the Enlightenment is best seen as a multiplicity of complex interactions between Europeans and diverse communities around the world.

The eighteenth-century circulation of potato talk across the Hispanic world forms part of this larger history of the circulation of enlightened knowledge, which in turn points to the travelling nature of the Enlightenment itself. Potatoes resonated differently in Lima, Madrid and Guatemala, but in all three locations discussion of their merits formed part of a body of ideas whose central themes were the relationships between nutritious food, good governance and happiness. Living the Enlightenment, the geographer Charles Withers reminds us, was always “a form of local cultural production and consumption”, in which different discourses and practices interacted. Thinking about place, he suggests, helps make sense of the multiple, contested experiences of the Enlightenment.<sup>80</sup> Examining these potato histories provides one way to concretise our understanding of the simultaneously mobile and localised nature of enlightened projects and imaginaries, as well as the important role that food, and eating, played in these imaginings.

---

<sup>1</sup> It is a pleasure to thank the generous colleagues whose expertise and keen eyes enriched my own investigations. Sophie Brockmann shared her knowledge of eighteenth-century Guatemala. Kathryn Santner told me about, and provided copies of, documents from Arequipa archives, and Dennis Landis helped me with Davalos’ Latin. I am also very grateful to the John Carter Brown Library for fellowship and enormously stimulating environment that together made it possible for me to think about potatoes in Peru.

<sup>2</sup> Enrique Doyle, *Instrucción formada de orden del Consejo por D. Enrique Doyle, para el cultivo y uso de las patatas* (Madrid, 1785); Enrique Doyle, *Tratado sobre el cultivo, uso y utilidades de las patatas o papas, corregido y considerablemente aumentado* (Madrid, 1804); and for a Portuguese translation, Henrique Doyle, *Tractado sobre a cultura, uso e utilidade das batatas ou papas* (Lisbon, 1800). For the other 1785 publications, see *Memorial Literario Instructive y Curioso de la Corte de Madrid*, V:342 (1785), 324-53. On Doyle see *Memorias de la Sociedad Económica* 4 (Madrid, 1787), appendix, 51-52;

---

and Eugenio Larruga, *Memorias políticas y económicas sobre los frutos, comercio, fábricas y minas de España* 17 (Madrid, 1792), 286-292.

<sup>3</sup> Henrique Doyle, *Tratado sobre el cultivo, uso y utilidades de las patatas ó papas, é instrucción para su mejor propagación &c* (Madrid, 1797), 24-5.

<sup>4</sup> For potato-promotion see for instance Redcliffe Salaman, *History and Social Influence of the Potato*, ed. J.G. Hawkes (Cambridge: Cambridge University Press, 2000 [1949]); Ilmar Talve, “The Potato in Finnish Food Economy”, *Food in Perspective: Proceedings of the Third International Conference on Ethnological Food Research*, eds. Alexander Fenton and Trefor Owen (Edinburgh: John Donald, 1981); Eszter Kisbán, “The Beginnings of Potato Cultivation in Transylvania and Hungary: Government Policy and Spontaneous Process”, *The Origins and Development of Food Policies in Europe*, eds. John Burnett and Derek Oddy (London: Leicester University Press, 1994); David Gentilcore, *Italy and the Potato: A History, 1550-2000* (London: Bloomsbury, 2012); Emma Spary, *Feeding France: New Sciences of Food, 1760-1815* (Cambridge: Cambridge University Press, 2014); and Marika Galli, *La conquête alimentaire du Nouveau Monde. Pratiques et représentations franco-italiennes des nouveaux produits du XVIIe au XVIIIe siècle* (Paris: L’Harmattan, 2016). In 1811 a German doctor counted some two hundred European texts whose title referred explicitly to potatoes; inclusion of the many works that discussed the tuber would increase the number by a factor of ten: Johann Hermann Becker, *Versuch einer allgemeinen und besondern Nahrungsmittelkunde*, vol. 1 (Stendal, 1811), 658-80.

<sup>5</sup> What this article does *not* offer is a history of the potato’s actual penetration into local diets in Spain, or its trajectory from the Andean highlands to other parts of the Spanish Indies. That, as they say, is another story. For a brief sketch of this process see Rebecca Earle, “Promoting Potatoes in Eighteenth-Century Europe”, *Eighteenth-Century Studies* 51:2 (2017).

<sup>6</sup> Dionisio Escudo, Ampudia, Feb. 20, 1798, *Semanario de Agricultura y Artes Dirigido a los Párrocos*, Madrid [henceforth SAA], April 19, 1798, vol. 3 (1798), 253.

<sup>7</sup> J. David Palanca Cañon, “Introducción y generalización del cultivo y consumo alimentario y médico de la patata en el País Vasco: 1760 a 1860”, D.Phil. Universidad del País Vasco, 2011, 46. On the royal order see *Extractos de las juntas generales celebradas por la Real Sociedad Bascongada de los Amigos del País en la ciudad de Vitoria por julio de 1786* (Vitoria, 1786), 28; Doyle, *Instrucción*; and Doyle, *Tratado*, 9-11.

---

<sup>8</sup> For economic societies in the Hispanic world and elsewhere see Robert Jones Shafer, *The Economic Societies in the Spanish World (1763-1821)* (Syracuse: Syracuse University Press, 1958); Enrique Martínez Ruiz and Magdalena de Pazzis Pi Corrales, eds., *Ilustración, ciencia y técnica en el siglo xviii español* (Valencia: Universitat de València, 2008); Gabriel Paquette, *Enlightenment, Governance, and Reform in Spain and its Empire, 1759-1808* (Houndsmill: Palgrave Macmillan, 2008); Koen Stapelbroek and Jani Marjanen, eds., *The Rise of Economic Societies in the Eighteenth Century* (Basingstoke: Palgrave Macmillan, 2012); and Jesús Astigarraga, “Economic Societies and the Politicisation of the Spanish Enlightenment”, *The Spanish Enlightenment Revisited*, ed. Jesús Astigarraga (Oxford: Voltaire Foundation, 2015).

<sup>9</sup> On the Basque Society see *Extractos de las juntas generales celebradas por la Real Sociedad Bascongada de los Amigos del País en la ciudad de Vitoria por julio de 1786* (Vitoria, 1786), 28 (quote); and Luis Riera Climent and Juan Riera Palmero, “Los alimentos americanos en los *Extractos de la Bascongada* (1768-1793): el maíz y la patata”, *Llull* 30 (2007). On the importance of such translations see Javier Usoz, “Political Economy and the Creation of the Public Sphere during the Spanish Enlightenment”, *The Spanish Enlightenment Revisited*, ed. Astigarraga, 117-22. For other examples of pro-potato activity by economic societies see for instance “Explicación de la voz batata para incluir en un diccionario de la lengua”, *Memorial Literario, Instructivo y Curioso de la Corte de Madrid* (Madrid), Nov. 1790, no. 121, 365; *Correo Mercantil de España y sus Indias*, March 24, 1794, 188, Aug. 10, 1801, 50; *Correio Mercantil e Economico de Portugal*, April 24, 1798; SAA, March 13, 1800, vol. 7 (1800), 173; *Junta pública de la Real Sociedad Económica de Amigos del País de Valencia* (Valencia, 1801); SAA, Dec. 9, 1802: SAA, vol. 11 (1802), 173; and Juan Piqueras Haba, “La difusión de la patata en España (1750-1850): El papel de las Sociedades Económicas y del clero rural’, *Ería: Revista Cuatrimestral de Geografía* 27 (1992).

<sup>10</sup> SAA, July 4, 11, 1805, vol. 18 (1805); Feb. 20, March 6, 1806, vol. 19 (1806); Casimiro Gómez de Ortega, *Elementos teóricos-prácticos de agricultura . . . traducidos del francés del célebre Mr. Duhamel de Monceau*, 2 vols (Madrid, 1805), II:137; Estéban Boutalou, “Memoria sobre las patatas”, SAA, March 6, 1806, vol. 19 (1806); and Gabriel Alonso de Herrera, *Agricultura general de Gabriel Alonso de Herrera, corregida según el texto original de la primera edición publicada en 1513 por el mismo autor y adicionada por la Real Sociedad Económica Matritense* (Madrid, 1819), III:248 (quote).

---

<sup>11</sup> Elisabel Larriba, “Un intento de reforma agraria por y para las clases productoras: el *Semanario de agricultura y artes dirigido a los párrocos* (1797-1808)”, *Brocar* 23 (1999); and Elena Serrano, “Making *Oeconomic* People: the Spanish *Magazine of Agriculture and Arts for Parish Rectors* (1797-1808)”, *History and Technology* 30:3 (2014).

<sup>12</sup> SAA, Nov. 21, 1799; Jan. 23, 30, Feb. 27, March 6, 13, 29, April 3, June 19, July 9, 16, 1800, vol. 7 (1800); Sept. 24, 1801; Sept. 24, 1802, Nov. 18, 1802, Dec. 9, 1802; April 18, 1805, June 20, 1805, vol. 17 (1805); April 17, 1806, vol. 19 (1806). For other newspaper reports see for instance *Gaceta de Madrid*, Madrid, March 17, 1789, 196; *Memorial Literatio Instructivo y Curioso de la Corte de Madrid*, issue 21 (1790), 365; and *Correo Mercantil de España y sus Indias*, Madrid, March 24, 1794, 188; Aug. 3, 10, 1801, 490, 508.

<sup>13</sup> SAA, March 20, 27, 1806, vol. 19 (1806).

<sup>14</sup> See for instance SAA, Nov. 21, 1799, vol. 6 (1799); Jan. 23, 30, Feb. 27, March 6, April 3, June 19, 1800, vol. 7 (1800); and SAA, July, 9, 16 1801, vol. 10 (1801).

<sup>15</sup> SAA, Nov. 18, 1802, vol. 12 (1802).

<sup>16</sup> See for instance Letter from Juan Antonio Delgado, Alanis, SAA, May 17, 1798, vol. 3 (1798); or the reports and letters from Juan Antonio Pasquel y Rubio, Pedro Nevado, Dionisio Escudo, and an anonymous writer in San Lucar de Barrameda published in 1798: SAA, January 25, Feb. 1, April 19, 26, 1798, vol. 3 (1798).

<sup>17</sup> Carta del cura del Linares sobre el cultivo y aprovechamiento de las patatas, SAA, Oct. 12, 1791.

<sup>18</sup> Carta del cura del Linares, Oct. 12, 1791.

<sup>19</sup> Carta del párroco de Linares, Feb. 5, 1797, SAA, March 30, 1797, vol. 1 (1797); Carta del cura de Linares, SAA, Nov. 21, 1799, vol. 6 (1799); and Carta del cura de Linares, SAA, Aug. 13, 1801.

<sup>20</sup> Doyle, *Tratado*, 4-5 (quote), 78-79, 85.

<sup>21</sup> Doyle, *Tratado*, 6.

<sup>22</sup> Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 2 vols. (London, 1776), I:86.

<sup>23</sup> Michel Foucault, *Security, Territory, Population: Lectures at the Collège de France, 1977-1987*, ed. Michel Senellart, trans. Graham Burchell (New York: Palgrave Macmillan, 2009).

---

<sup>24</sup> On eighteenth-century populationist discourse see James Riley, *Population Thought in the Age of the Demographic Revolution* (Durham: Duke University Press, 1985); Sylvana Tomaselli, “Moral Philosophy and Population Questions in Eighteenth-century Europe”, *Population and Development Review* 14 (1988); Andrea Rusnock, *Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France* (Cambridge: Cambridge University Press, 2002); Foucault, *Security, Territory, Population*; Yves Charbit, *The Classical Foundations of Population Thought From Plato to Quesnay* (London: Springer, 2011); and Alison Bashford and Joyce Chaplin, *The New Worlds of Thomas Robert Malthus: Rereading the Principle of Population* (Princeton: Princeton University Press, 2016).

<sup>25</sup> Jean-François Melon, *Essai politique sur le commerce* (n.p., 1736), 12.

<sup>26</sup> John Post, “Nutritional Status and Mortality in Eighteenth-Century Europe”, *Hunger in History: Food Shortage, Poverty and Deprivation*, ed. Lucille Newman (Cambridge: Blackwell, 1995); and José Andrés Gallego, *El motín de Esquilache, América y Europa* (Madrid: Consejo Superior de Investigaciones Científicas, 2003).

<sup>27</sup> On Bourbon science and statecraft, see Ernest Lluch and Lluís Argemí i d’Abadal, *Agronomía y fisiocracia en España* (Valencia: Institución Alfonso el Magnánimo and Instituto Valenciana D’Estudis i Investigació, 1985); Francisco Javier Puerto Sarmiento, *La ilusión quebrada: botánica, sanidad y política científica en la España ilustrada* (Madrid: Consejo Superior de Investigaciones Científicas, 1988); Manuel Sellés, José Luis Peset, and Antonio Lafuente, eds. *Carlos III y la ciencia de la ilustración* (Madrid: Alianza, 1988); José Enrique Covarrubias, *En busca del hombre útil. Un estudio comparativo del utilitarianismo neomercantilista en México y Europa* (Mexico City: Universidad Nacional Autónoma de México, 2005); Santiago Castro-Gómez, *La hybris del punto cero: ciencia, raza e ilustración en la Nueva Granada* (Bogotá: Editorial Pontificia Universidad Javeriana, 2005); Paquette, *Enlightenment, Governance, and Reform*; and Astigarraga, ed., *The Spanish Enlightenment Revisited*.

<sup>28</sup> Joaquín Xavier de Uriz, *Causas prácticas de la muerte de los niños expósitos en sus primeros años*, 2 vols. (Pamplona, 1801), I:6-7. Or see Pedro Rodríguez de Campomanes, *Discurso sobre el fomento de la industria popular* (Madrid, 1774), 136; Bernardo Ward, *Proyecto económico, en que se proponen varias providencias, dirigidas á promover los intereses de España* (Madrid, 1779), 70; and José del Campillo y Cosío, *Nuevo sistema de gobierno económico para la América* (Madrid, 1789), 261.

---

<sup>29</sup> “Discurso sobre la libertad de comercio, concedida por S.M. a la América meridional, presentado a la Real Sociedad de Amigos del Pays, por Don Francisco Cabarrús”, Feb. 28, 1778, reprinted in Santos Manuel Coronas González, “Espíritu ilustrado y liberación del tráfico comercial con Indias”, *Anuario de Historia del Derecho Español* (1992), 110.

<sup>30</sup> Ward, *Proyecto económico*, 196.

<sup>31</sup> Ward, *Proyecto económico*, 196.

<sup>32</sup> Doyle, *Tratado*, 24-25, 33, 81. For the Irish as evidence of the potato’s nutritious qualities for instance Samuel Engel, *Traité de la nature, de la culture et de l’utilité des pommes de terre* (Lausanne, 1771), 59; Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, I:201-2; Parmentier, *Les pommes de terre, considérées relativement à la santé & à l’économie*, 195; Parmentier, *Traité sur la culture et les usages des pommes de terre, de la patate, et du topinambour*, 17-18; and David Lloyd, “The Political Economy of the Potato”, *Nineteenth-Century Contexts* 29:2-3 (2007).

<sup>33</sup> Carta del cura de Linares, Nov. 21, 1799.

<sup>34</sup> Doyle, *Instrucción*, 26-7; and Henrique Doyle, *Tratado sobre el cultivo, uso y utilidades de las papatas o papas, corregido y considerablemente aumentado* (Madrid, 1804), 7.

<sup>35</sup> Doyle, *Tratado*, 8, 24, 31

<sup>36</sup> Jaime Bonells, *Perjuicios que acarrear al género humano y al estado las madres que rehusan criar a sus hijos* (Madrid, 1786); Uriz, *Causas prácticas de la muerte de los niños*, I:85 (quote), II:127-130, 157; and Antonio Arteta, *Disertacion sobre la muchdumbre de niños que mueren en la infancia, y modo de remediarla, y de procurar en sus cuerpos la conformidad de sus miembros, robustez, agilidad y fuerzas competentes*, 2 vols. (Zaragoza, 1801-2), I:16. On the death of foundlings as “a political loss for the state” see also Marie France Morel, “Théories et pratiques de l’allaitement en France au XVIIIe siècle”, *Annales de Démographie Historique* 1976:1 (1976); Joan Sherwood, *Poverty in Eighteenth-Century Spain: The Women and Children of the Inclusa* (Toronto: University of Toronto Press, 1988); Donna Andrews, *Philanthropy and Police: London Charity in the Eighteenth Century* (Princeton: Princeton University Press, 1989); and Isabel dos Guimarães Sá, “Circulation of Children in Eighteenth-Century Portugal”, *Abandoned Children*, eds. Catherine Panter-Brick and Malcolm Smith (Cambridge: Cambridge University Press, 2000), 29 (quote).

---

<sup>37</sup> *Gaceta de Madrid*, Oct. 1, 1784, 820.

<sup>38</sup> Antonio Lafuente, “Enlightenment in an Imperial Context: Local Science in the Late eighteenth-century Hispanic World,” *Osiris* 15 (2000); José M. Portillo Valdés, *Crisis atlántica: Autonomía e independencia en la crisis de la monarquía hispánica* (Madrid: Marcial Pons, 2006); and Fidel José Tavárez Simó, “La invención de un imperio comercial hispano, 1740-1765,” *Magallánica, Revista de Historia Moderna* 3 (2015).

<sup>39</sup> Uriz, *Causas prácticas de la muerte de los niños expósitos*, I:6-7.

<sup>40</sup> *Papel Periódico de la Ciudad de Santafé de Bogotá*, May 6, 1791, *Papel Periódico de la Ciudad de Santafé de Bogotá, 1791-1797*, 7 vols. (Bogotá: Banco de la República, 1978), I:102.

<sup>41</sup> See for instance Andrew Knaut, “Yellow Fever and the Late Colonial Public Health Response in the Port of Veracruz,” *Hispanic American Historical Review* 77:4 (1997); Castro-Gómez, *La hybris del punto cero*; and Mariselle Meléndez, *Deviant and Useful Citizens. The Cultural Production of the Female Body in Eighteenth-Century Peru* (Nashville: Vanderbilt University Press, 2011).

<sup>42</sup> Discurso sobre la libertad de comercio; Ward, *Proyecto económico*, 58 (quote); and Campillo y Cosío, *Nuevo sistema de gobierno económico*, 261.

<sup>43</sup> Diego Martín Tanco, “Discurso sobre la población”, June 1, 1792, *Papel Periódico de la Ciudad de Santafé de Bogotá*, II:132; Juan Pedro Viqueira Albán, *Propriety and Permissiveness in Bourbon Mexico*, trans. Sonya Lipsett-Rivera and Sergio Rivera Ayala (Wilmington: SR Books, 1999); and Castro-Gómez, *La hybris del punto cero*.

<sup>44</sup> Joseph Ignacio de Lequanda, “Discurso sobre el destino que debe darse a la gente vaga que tiene Lima”, *Mercurio Peruano de Historia, Literatura, y Noticias Públicas*, Lima [henceforth *MP*], Feb. 16, 1794, 111.

<sup>45</sup> On the Society and its publications see Elisa Luque Alcaide, *La Sociedad Económica de Amigos del País de Guatemala* (Seville: Escuela de Estudios Hispano-Americanos, 1962); Sophie Brockmann, ‘surveying Nature: The Creation and Communication of Natural-Historical Knowledge in Enlightenment Central America’, D.Phil., Cambridge, 2013; and Jordana Dym, “Conceiving Central America: A Bourbon Public in the *Gazeta de Guatemala (1797-1807)*”, *Enlightened Reform in Southern Europe and its Atlantic Colonies, C.1750-1830*, ed. Gabriel Paquette (London: Routledge, 2016); see also Gabriel Paquette, ‘state-Civil Society Cooperation and Conflict in the Spanish Empire: The Intellectual and Political Activities of

---

the Ultramarine *Consulados* and Economic Societies, c. 1780-1810”, *Journal of Latin American Studies* 39 (2007).

<sup>46</sup> *Periódico de la Sociedad Económica de Guatemala*, Nueva Guatemala, May 1, 1815 (quote); *Junta pública de la Real Sociedad Económica de Amantes de la Patria de Guatemala* (Nueva Guatemala, 1796), 7-10; *Noticia de la pública distribución de los premios aplicados a las mejores hilanderas al torno* (Nueva Guatemala, 1796); *Segunda junta pública de la Real Sociedad Económica de Amantes de la Patria de Guatemala* (Nueva Guatemala, 1797); *Tercera junta pública de la Real Sociedad Económica de Amantes de la Patria de Guatemala* (Nueva Guatemala, 1798); *Quarta junta pública de la Real Sociedad Económica de Amantes de la Patria de Guatemala* (Nueva Guatemala, 1798); *Gazeta de Guatemala*, Nueva Guatemala [henceforth GG], April 2, 1798, 56; April 21, 1798, 88; Antonio García Redondo, *Memoria sobre el fomento de las cosechas de cacao y de otros ramos de agricultura* (Nueva Guatemala, 1799); and *Octava junta pública de la Real Sociedad Económica de Amantes de la Patria de Guatemala* (Nueva Guatemala, 1811).

<sup>47</sup> GG, supplement no. 57 (1798); Feb. 28, 1803, 39-40; March 7, 1803, 45; and *Periódico de la Sociedad Económica de Guatemala*, Nueva Guatemala, Nov. 15, 1815, 219; Feb. 1, 1816, 298-9.

<sup>48</sup> Nicolás de Arriquirar, *Recreación política: reflexiones sobre el amigo de los hombres en su tratado de población* (Vitoria, 1779), 150-161; and GG, Feb. 28, 1803, 33; July 18, 1803, 286-7.

<sup>49</sup> The Guatemalan Society subscribed in 1798, a year after its launch: *Quarta junta pública*.

<sup>50</sup> GG, June 14, 1802, 145; Feb. 7, 1803, 10; and *Octava junta pública*, 23. On Rumford soup see Benjamin Thompson, “Of Food, and Particularly of Feeding the Poor”, *Essays, Political, Economical and Philosophical*, 3 vols (London, 1797-1803), I:189-299; and Fritz Redlich, ‘science and Charity: Count Rumford and his Followers’, *International Review of Social History* 16:2 (1971).

<sup>51</sup> Jürgen Habermas, *The Structural Transformation of the Public Sphere, An Enquiry into a Category of Bourgeois Society*, trans. Thomas Burger (Cambridge: MIT Press, 1991); Astigarraga, ed., *The Spanish Enlightenment Revisited*; and Dym, “Conceiving Central America”, 117 (quote).

<sup>52</sup> Daniela Bleichmar, *Visible Empire: Botanical Expeditions and Visual Culture in the Hispanic Enlightenment* (Chicago: University of Chicago Press, 2012), 140. On colonial botany see J.H. Galloway, “Agricultural Reform and the Enlightenment in Late Colonial Brazil”, *Agricultural History* 53:4 (1979);

---

David Mackay, *In the Wake of Cook: Exploration, Science and Empire, 1780-1801* (New York: St. Martin's Press, 1985); Michael Osborne, *Nature, the Exotic, and the Science of French Colonialism* (Bloomington: Indiana University Press, 1994); David Philip Miller and Peter Hanns Reill, eds., *Visions of Empire: Voyages, Botany, and Representations of Nature* (Cambridge: Cambridge University Press, 1996); James McClellan III and François Regourd, "The Colonial Machine: French Science and Colonization in the Ancien Regime", *Osiris* 15 (2000); Richard Drayton, *Nature's Government. Science, Imperial Britain, and the "Improvement" of the World* (New Haven: Yale University Press, 2000); Emma Spary, *Utopia's Garden: French Natural History from Old Regime to Revolution* (Chicago: University of Chicago Press, 2000); Julien Touchet, *Botanique & Colonisation en Guyane française (1720-1848)* (Cahors: Ibis Rouge, 2004); Castro-Gómez, *La hybris del punto cero*; Londa Schiebinger and Claudia Swan, eds. *Colonial Botany: Science, Commerce and Politics in the Early Modern World* (Philadelphia: University of Pennsylvania Press, 2005); Paula de Vos, "Natural History and the Pursuit of Empire in Eighteenth-century Spain", *Eighteenth-Century Studies* 40:2 (2007); Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Cambridge: Harvard University Press, 2009); James McClellan III, *Colonialism and Science: Saint Domingue in the Old Regime* (Chicago: University of Chicago Press, 2010); and Fredrik Jonsson, *Enlightenment's Frontier: The Scottish Highlands and the Origins of Environmentalism* (New Haven: Yale University Press, 2013).

<sup>53</sup> Baltasar Jaime Martínez Compañón to Charles IV, *MP* 11 (1794), 3; Meléndez, *Deviant and Useful Citizens*, 45-6; and Emily Berquist Soule, *The Bishop's Utopia: Envisioning Improvement in Colonial Peru* (Philadelphia: University of Pennsylvania Press, 2014). On the *Mercurio* see Rosa Zeta Quinde, *El pensamiento ilustrado en el Mercurio peruano, 1791-1794* (Piura: Universidad de Piura, 2000).

<sup>54</sup> Francisco González Laguna, "Memoria de las plantas extrañas que se cultivan en Lima introducidas en los últimos 30 años hasta el de 1794", *MP*, vol. 11 (1794), June 10, 13, 1794, 163 (quote), 165-177.

<sup>55</sup> Voltaire, *Essai sur les mœurs et l'esprit des nations* (1752), *Oeuvres complètes de Voltaire* (Basel, 1785), 19:343; and Antonello Gerbi, *The Dispute of the New World. The History of a Polemic, 1750-1900* (Pittsburgh: University of Pittsburgh Press, 1973 [1955]).

<sup>56</sup> SAA, March 30, 1797.

<sup>57</sup> 'Continuación de los elementos de historia natural', SAA, March 28, 1805, vol. 17 (1805).

---

<sup>58</sup> See for instance Engel, *Traité de la nature, de la culture et de l'utilité des pommes de terre*, 11; David Henry, *The Complete English Farmer* (London, 1771), 283; Antoine Augustin Parmentier, *Traité sur la culture et les usages des pommes de terre, de la patate, et du topinambour*, 3; and Joseph Banks, "An Attempt to Ascertain the Time when the Potatoe (*Solanum tuberosum*) was first introduced into the United Kingdom", *Transactions of the Horticultural Society of London* 1 (London, 1812).

<sup>59</sup> *Coup d'oeil sur les quatre concours* (Lyon, 1791), 14; and Jeremy Caradonna, *The Enlightenment in Practice: Academic Prize Contests and Intellectual Culture in France* (Ithaca: Cornell University Press, 2012), 158-9.

<sup>60</sup> Domingo de Santo Thomas, *Grammatica, o Arte, que ha compuesto de la lengua general de los indios, del Peru* (Valladolid, 1560), 159v.

<sup>61</sup> Pascual de Andagoya, "Relación que da el Adelantado de Andagoya de las tierras y provincias que abajo se hará mención", 1545, *Relación y documentos*, ed. Adrian Blázquez (Madrid: Historia 16, 1986), 138-9; Pedro de Cieza de León, *Parte primera de la crónica del Perú* (Seville, 1553), book 1, chap. 40; "Descripción y relación de la Provincia de los Yauyos", 1586; "Descripción de la tierra del repartimiento de San Francisco de Atunrucana y Laramanti", 1586; and "Relación de la Provincia de los Collaguas", all in *Relaciones geográficas de las Indias: Perú*, ed. Marcos Jiménez de la Espada, 3 vols (Madrid, 1965), I:156, 234, 586; José de Acosta, *Natural and Moral History of the Indies*, trans. Frances López-Morillas (Durham: Duke University Press, 2002 [1590]), 148, 201-2; Louis Feuillée, *Histoire des plantes medicinales que sont le plus en usage aux Royaumes de l'Amerique Meridionale, du Perou & du Chily, composée sur les lieux par order du Roy, dans les années 1709, 1710 & 1711* (Paris, 1714-1725), II:62-3; Amadé Frezier, *A Voyage to the South-Seas, and Along the Coasts of Chili and Peru in the Years 1712, 1713 and 1714* (London, 1717), 67; Juan Ignacio Molina, *Compendio de la historia civil del reyno de Chile* (Madrid, 1795), 120-1, 213; and Plutarco Naranjo Vargas, "La comida andina antes del encuentro", *Conquista y comida: consecuencias del encuentro de dos mundos*, ed. Janet Long (Mexico City: Universidad Nacional Autónoma de México, 1997).

<sup>62</sup> Cristóbal de Molina, *Relación de las fábulas y ritos de los incas*, c.1573, ed. Paloma Jiménez del Campo (Madrid: Verveurt, 2010), 62-3; Acosta, *Natural and Moral History*, 262 (quote); Gregorio García, *Orígen de los indios del Nuevo Mundo*, ed. Franklin Pease (Mexico City: Fondo de Cultura Económica, 1981

---

[1607]); Felipe Guaman Poma de Ayala, *El primer nueva corónica y buen gobierno*, 1615-16, esp. chapters 11, 12, 37, The Guaman Poma Website, [www.kb.dk/permalink/2006/poma/info/en/frontpage.htm](http://www.kb.dk/permalink/2006/poma/info/en/frontpage.htm); Karen Spalding, *Huarochirí: An Andean Society Under Inca and Spanish Rule* (Stanford: Stanford University Press, 1984), 63, 262; Irene Silverblatt, *Moon, Sun, and Witches: Gender Ideologies and Class in Inca and Colonial Peru* (Princeton: Princeton University Press, 1987); Mary Weismantel, *Food, Gender and Poverty in the Ecuadorian Andes* (Philadelphia: University of Pennsylvania Press, 1988); Frank Salomon and George Urioste, *The Huarochirí Manuscript: a Testament of Ancient and Colonial Andean Religion* (Austin: University of Texas Press, 1991), 54-73, 120, 131; and Regina Harrison, *Signs, Songs and Memory in the Andes* (Austin: University of Texas Press, 1989).

<sup>63</sup> John Murra, "Rite and Crop in the Inca State", *Culture in History. Essays in Honor of Paul Radin*, ed. Stanley Diamond (New York: Octagon, 1960).

<sup>64</sup> Apuntes de los gastos del Monasterio de Santa Tereza de Jesús . . . desde 19 de abril de 1794, año 2; and Sobre seglares de Santa Catalina, y alimentos de religiosas, refectorio, etc., March 1, 1796; both in Archivo Arzobispal de Arequipa, Arequipa, Santa Teresa legajo 2, and Santa Catalina legajo 8 respectively; Antonio Leon Pinelo, *Question moral si el chocolate quebranta el ayuno elesiástico* (Madrid, 1638), 57, 63; Jeffrey Pilcher, *¡Que Vivan los Tamales! Food and the Making of Mexican Identity* (Albuquerque: University of New Mexico Press, 1998); and Rebecca Earle, *The Body of the Conquistador: Food, Race and the Colonial Experience in Spanish America, 1492-1700* (Cambridge: Cambridge University Press, 2012).

<sup>65</sup> "Idea general del Perú", *MP*; "La Province of Caxatambo"; and "Descripción de la Provincia de Chachapoyas"; all in *MP* 5 (1792), 6, 190, 194, 225; Alonso Carrió de la Vandra, *El lazarillo de ciegos caminantes desde Buenos Aires, hasta Lima* [1773], Biblioteca Virtual Miguel de Cervantes, 301, 335; Joseph Ignacio Lequanda, "Descripción de Caxamarca", *MP* 10 (1794), 202; and Francisco López, "Descripción de Porco", *MP* 11 (1794), 19, 29-30, 37-8, 63, 68-72, 77, 87-9, 92.

<sup>66</sup> José Manuel Davalos, *De morbis nonnullis Limae, grassantibus ipsorumque therapeia* (Montpellier, 1787), 11-12. Davalos was obliged to matriculate in France because Peruvian universities would not accept those who like Davalos were classified as mulattoes.

<sup>67</sup> Panacio Montano, "Medicina práctica", *MP* 1 (1791), 45-7.

- 
- <sup>68</sup> Hipólito Unanue, *Observaciones sobre el clima del Lima y sus influencias en los seres organizados* (Lima, 1806), 153. On wind, see also Juan del Valle y Caviades, “Defensas que hace un ventoso al pedo”, *Obra completa*, ed. Daniel Reedy (Caracas: Biblioteca Ayacucho, 1984), 277.
- <sup>69</sup> López, “Descripción de Porco”, 101-2; *MP* 11 (1794), 106; Manuel Espinavete López, “Descripción de la Provincia de Abancay”, *MP* 12 (1795), 131, 137, 145-6, 156-7; Spalding, *Huarochirí*, 134, 163, 196-7; and Marcel Haitin, “Prices, the Lima Market, and the Cultural Crisis of the Late Eighteenth Century in Peru”, *Jahrbuch für Geschichte von Staat, Wirtschaft und Gesellschaft Latein-amerikas* 22 (1985).
- <sup>70</sup> Usoz, “Political Economy and the Creation of the Public Sphere during the Spanish Enlightenment”, 105.
- <sup>71</sup> Louis, chevalier de Jaucourt, “Spain”, trans. Malcolm Eden of “Espagne”, *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, vol. 5 (Paris, 1755); Jean-François de Saint-Lambert, “Luxury”, trans. Claude Blanchi of “Luxe”, *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, vol. 9 (Paris, 1765); and Louis, chevalier de Jaucourt, “Inquisition”, trans. Robin Vose of “Inquisition”, *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, vol. 8 (Paris, 1765); all from *The Encyclopedia of Diderot & d’Alembert Collaborative Translation Project*. The “Vanilla” entry notes that “for their part, the Spaniards, satisfied with the riches they have taken from [the natives], and more accustomed to a happy ignorance and lazy life, have scorned the lure of natural history and those who have succumbed to it” (Louis, chevalier de Jaucourt, “Vanilla”, trans. Robert Ketchum of “Vanille”, *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, vol. 16 (Paris, 1765), *The Encyclopedia of Diderot & d’Alembert Collaborative Translation Project*). For classic analysis of negative French and British attitudes towards both Spain and its colonies see Gerbi, *The Dispute of the New World*; Anthony Pagden, *Spanish Imperialism and the Political Imagination* (New Haven: Yale University Press, 1990); David Brading, *The First America, the Spanish Monarchy, Creole Patriots, and the Liberal State, 1492-1867* (Cambridge: Cambridge University Press, 1991); Jorge Cañizares-Esguerra, *How to Write the History of the New World: Histories, Epistemologies and Identities in the Eighteenth-Century Atlantic World* (Stanford: Stanford University Press, 2001); and Mariselle Meléndez and Karen Stolley, “Introduction: Enlightenments in Ibero-America”, *Colonial Latin American Review* 24:1 (2015).
- <sup>72</sup> María Victoria López-Cordón, “L’immagine della Spagna nella Francia del XVIII secolo: Storia, società e carattere”, *Dimensioni e Problemi della Ricerca Storica* 2 (1995), 111-137.

---

<sup>73</sup> Guillaume-Thomas Raynal, *A Philosophical and Political History of the Settlements and Trade of the Europeans in the East and West Indies*, 10 vols. (London, 1798), VII:189. Or see William Robertson, *The History of America*, in *The Works of William Robertson*, 8 vols. (Oxford, 1825), VII:340, 342; Roy Porter, *The Enlightenment*, Macmillan (Basingstoke: Palgrave Macmillan, 1990), 52; and Jonathan Israel, *Radical Enlightenment: Philosophy and the Making of Modernity, 1650-1750* (Oxford: Oxford University Press, 2001), 3, 11.

<sup>74</sup> For economical kitchens see Carmen Abad-Zardoya, “Arquitectos en los fogones: del *theatrum machinarum* a los proyectos ilustrados para una cocina económica”, *Artigrama* 26 (2011); for political economy, Miguel Gerónimo Suárez, *Memorias instructivas, y curiosas sobre agricultural, comercio, industria, economía, chymica, botánica, historia natural &* (Madrid, 1778), III:219ff; and for agronomy, Lluch and Argemí i d’Abadal, *Agronomía y fisiocracia en España*.

<sup>75</sup> See for instance Sellés, Peset, and Lafuente, eds. *Carlos III y la ciencia de la ilustración*; Puerto Sarmiento, *La ilusión quebrada*; Mónica Bolufer Peruga, *Mujeres e ilustración: La construcción de la feminidad en la Ilustración española* (Valencia: Diputació de València, 1998); Lafuente, “Enlightenment in an Imperial Context”; Cañizares-Esguerra, *How to Write the History of the New World*; Theresa Ann Smith, *The Emerging Female Citizen: Gender and Enlightenment in Spain* (Berkeley: University of California Press, 2006); Jorge Cañizares-Esguerra, *Nature, Empire and Nation: Explorations of the History of Science in the Iberian World* (Stanford: Stanford University Press, 2006); Martínez Ruiz and De Pazzis Pi Corrales, eds., *Ilustración, ciencia y técnica en el siglo xviii español*; Paquette, *Enlightenment, Governance, and Reform in Spain and its Empire*; Catherine Jaffe, Elizabeth Franklin Lewis, eds., *Eve’s Enlightenment: Women’s Experience in Spain and Spanish America, 1726-1839* (Baton Rouge: Louisiana State University Press, 2009); Daniela Bleichmar, Paula De Vos, Kristin Huffine and Kevin Sheehan, eds., *Science in the Spanish and Portuguese Empires, 1500-1800* (Stanford: Stanford University Press, 2009); Andrea Smidt, “*Luces Por La Fe: The Cause of Catholic Enlightenment in 18<sup>th</sup>-Century Spain*”, *A Companion to the Catholic Enlightenment in Europe*, eds. Ulrich Lehner and Michael O’Neill Printy (Leiden: Brill, 2010); Helen Cowie, *Conquering Nature in Spain and its Empire, 1750-1850* (Manchester: Manchester University Press, 2011); Bleichmar, *Visible Empire*; and Astigarraga, ed., *The Spanish Enlightenment Revisited*.

---

<sup>76</sup> See for instance Viqueira Albán, *Propriety and Permissiveness*; Jeremy Adelman, *Republic of Capital: Buenos Aires and the Legal Transformation of the Atlantic World* (Stanford: Stanford University Press, 1999); Lafuente, “Enlightenment in an Imperial Context”; Pamela Voekel, *Alone Before God: the Religious Origins of Modernity in Mexico* (Durham: Duke University Press, 2002); Renan Silva, *La ilustración en el Virreinato de Nueva Granada* (Medellín: La Carreta, 2005); Castro-Gómez, *La hybris del punto cero*; Mauricio Nieto Olarte, *Orden Natural y orden social: Ciencia y política en el Semanario del Nuevo Reino de Granada* (Madrid: Consejo Superior de Investigaciones Científicas, 2007); Neil Safier, *Measuring the World: Enlightenment Science and South America* (Chicago: University of Chicago Press, 2008); Bleichmar, De Vos, Huffine and Sheehan, eds., *Science in the Spanish and Portuguese Empires*; Meléndez, *Deviant and Useful Citizens*; Soule, *The Bishop’s Utopia*; and Paquette, ed., *Enlightened Reform in Southern Europe and its Atlantic Colonies*.

<sup>77</sup> Sebastian Conrad, “The Enlightenment in Global History: A Historiographical Critique”, *American Historical Review* 117:4 (2012); and Sebastian Conrad, *What is Global History?* (Princeton: Princeton University Press, 2016), 76 (quote). Or see Bianca Premo, *The Enlightenment on Trial: Ordinary Litigants and Colonialism in the Spanish Empire* (Oxford: Oxford University Press, 2017).

<sup>78</sup> Kapil Raj, *Relocating Modern Science. Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900* (Houndmills: Palgrave Macmillan, 2007), 11. See McClellan and Regourd, “The Colonial Machine”; Kapil Raj, “Colonial Encounters and the Forging of New Knowledges and National Identities: Great Britain and India, 1760-1850”, *Osiris* 15 (2000); Dipesh Chakrabarty, *Provincializing Europe: Postcolonial Thought and Historical Difference* (Princeton: Princeton University Press, 2000); Cañizares-Esguerra, *Nature, Empire and Nation*; Safier, *Measuring the World*; Lissa Roberts, “Situating Science in Global History: Local Exchanges and Networks of Circulation”, *Itinerario* 33:1 (2009); and McClellan, *Colonialism and Science*.

<sup>79</sup> Lafuente, “Enlightenment in an Imperial Context”, 162; Safier, *Measuring the World*; Bleichmar, *Visible Empire*; and Soule, *The Bishop’s Utopia*.

<sup>80</sup> Charles Withers, *Placing the Enlightenment: Thinking Geographically about the Age of Reason* (Chicago: University of Chicago Press, 2007), 14.