

## ARTICLE

# Substituting Coffee and Tea in the Eighteenth Century: A Rural and Material History with Global Implications

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## Abstract

This article discusses the material history of coffee and tea by drawing on mid-eighteenth-century substitute recipes collected by physicians in different provinces of Sweden, applying perspectives from economic history, the history of science, medicine, and globalization. The starting point for the analysis is that a substitute can be said to reflect what are perceived as the most important properties, in terms of look, feel, taste, and scent, of the thing being copied. The products of a predominantly self-sustained agrarian world, the tea and coffee substitutes offered a distinctive rural alternative to the new exotic beverages. In terms of ecology and economy, this context encompassed large parts of central and north-eastern Europe; it also involved areas with a history of consumption that differed considerably from those of the cosmopolitan elites which have hitherto dominated the scholarship on eighteenth-century coffee and tea. The article finally suggests that the ways in which early modern substitutes were consumed and processed helped pave the way for the mass consumption of imported goods in rural areas of Europe in the following centuries.

**Keywords:** Consumption; Globalization; Substitutes; Natural history; Medicine; Recipes

The following description of a tea substitute can be read in one of Carolus Linnaeus's Swedish travel accounts, published in 1747:

The leaves were rolled up like an ordinary The de Bou, and did not turn yellow; they also unfolded in the water as tea leaves and had about the same shape [...] This tea should be called King's Tea since we have Emperor-Tea, which comes from China.<sup>1</sup>

In another context Linnaeus reveals the plant that the tea was made of (*Origanum vulgare*), but in the travel account he only names the inventor of the tea, 'Dean Walborg'; it was he who had 'manufactured' the tea:

so deftly that it in shape, size, colour, scent, and taste so closely agrees with Chinese Thé Bou [that] a person who is not particularly a connoisseur of tea, would find it hard to tell them apart; at least if he got a little used to it he would happily drink it like the Chinese [...].<sup>2</sup>

<sup>1</sup>Linnaeus, quoted in Gustaf Drake, 'Linnés försök till inhemsk teodling' ('Linnaeus's attempt at tea cultivation') *Svenska Linnésällskapets årskrift (The Swedish Linnaean Society's Year Book)* (1927), 81.

<sup>2</sup>*Ibid.*

The topic of this article is coffee and tea substitutes. At the forefront is a project launched by Collegium medicum (the equivalent of a Royal College of Physicians) in 1745, in response to directives made by the ‘Frugality Commission’, which had recently been set up by the Swedish government.<sup>3</sup> The backdrop is the negative balance of trade caused by the importing of exotic ‘luxuries’, including tea and coffee. It now fell on the Collegium medicum to engage its members – professors at the medical faculties in universities in Lund, Åbo (Turku), and Uppsala, where Linnaeus held a chair, as well as twelve physicians appointed to different provinces and cities from across Sweden – in efforts to come up with suitable domestic versions. Linnaeus’s piece on the ‘King’s tea’ is likely to have originated within this context; it was published the year after Collegium medicum’s treatise on the subject, which bore the title: *The Royal Collegii medici’s announcement on the abuse and overspending, that tea and coffee drinking entail, and advice on Swedish herbs to use instead of tea.*<sup>4</sup>

The substitute project matches a trend identified by numerous historians of eighteenth-century Europe, namely the growing popularity of coffee and tea imported from Asia and across the Atlantic. Their uptake has been linked to fundamental changes in European consumption and social transformation; the new hot drinks have been associated with changing patterns of sociability at home and the evolution of cosmopolitan public spaces, thought to have informed everything from gender roles to politics.<sup>5</sup> Moreover, and as a consequence, new work patterns emerged in Europe (the industrious revolution) as the need to purchase imported goods undermined existing systems of self-sufficiency.<sup>6</sup> Coffee and tea are also typically regarded as key components in early modern globalization processes by which wide-reaching networks of production and consumption were linked together in such a way that economies in China and slave plantations in the Atlantic areas became part of one system.<sup>7</sup>

In the light of the significance attached to coffee and tea, it is surprising that little attention has been directed towards the goods themselves, their early modern materiality.<sup>8</sup> This lacuna might be

<sup>3</sup>‘Sparsamhetskommisionen’; on its work and the economic context see Leif Runefelt, *Dygdens som välståndets grund: dygd, nytta och egennytta i frihetstidens ekonomiska tänkande (Virtue as the Basis of Prosperity: Virtue, Utility and Self-interest in the Economic Thinking during the Age of Freedom)* (Stockholm: Acta Universitatis Stockholmiensis, 2005), chap. 3.

<sup>4</sup>*Kongl. collegii medici kundgiörelse om thet miszbruk och öfwerflöd, som the och caffè drickande är underkastat, samt anwising på swenska örter at bruka i stället för thé* (Stockholm: tryckt uti kongl. tryckeriet, hos directeuren Pet.: Momma, 1746). For a discussion of the process leading up to publication see also H. Hodacs, ‘A Remedy for Many Ills: Tea, Coffee, and Chocolate Substitutes in Mid-Eighteenth-Century Sweden’, in *The Linnaean Heritage: Explorations in 18th-century Scientific and Archival Culture*, ed. H. Fors and L. Barck (forthcoming in the Brill series *Emergence of Natural History*).

<sup>5</sup>The wealth of publications on this topic is too vast to summarize in any comprehensive way. Significant contributions to the field are e.g. Woodruff D. Smith, *Consumption and the Making of Respectability, 1600–1800* (New York: Routledge, 2002); Brian William Cowan, *The Social Life of Coffee: The Emergence of the British Coffeehouse* (New Haven, CT: Yale University Press, 2005); Emma Spary, *Eating the Enlightenment: Food and the Sciences in Paris, 1670–1760* (Chicago, IL: University of Chicago Press, 2013); Markman Ellis, Richard Coulton, and Matthew Mauger, *Empire of Tea: The Asian Leaf that Conquered the World* (London: Reaktion Books, 2015); Erika Rappaport, *A Thirst for Empire: How Tea Shaped the Modern World* (Princeton, NJ: Princeton University Press, 2017). For a discussion of Swedish political life and different types of drinks, including coffee, in eighteenth-century Stockholm, see Karin Sennefelt, ‘Wine, Corruption, and the Politics of Intoxication in Eighteenth-Century Stockholm’, *Past & Present* 222, suppl. 9 (2014): 277–95.

<sup>6</sup>Jan De Vries, *The Industrious Revolution: Consumer Demand and the Household Economy, 1650 to the Present* (Cambridge: Cambridge University Press, 2008). For attempts to think about this in a Scandinavian context, see Ragnhild Hutchison, *In the Doorway to Development: An Inquiry into Market-oriented Structural Changes in Norway ca. 1750–1830* (Leiden: Brill, 2012), and Klas Rönnbäck, ‘An Early Modern Consumer Revolution in the Baltic?’, *Scandinavian Journal of History* 35, no. 2 (2010): 177–97.

<sup>7</sup>Again, this field of research is huge; for an overview see Kenneth Pomeranz and Steven Topik, *The World that Trade Created: Culture, Society, and the World Economy, 1400–the Present* (Armonk, NY: M.E. Sharpe, 1999). For specific histories of the coffee and tea trade, see Clarence-Smith, William Gervase and Steven Topik, eds., *The Global Coffee Economy in Africa, Asia, and Latin America, 1500–1989* [Electronic resource] (Cambridge: Cambridge University Press, 2003), and Louis Dermigny, *La Chine et l’Occident: le commerce à Canton au 18e siècle 1719–1833*, vol. 2 (Paris: École Pratique des Hautes Études, 1964).

<sup>8</sup>Neither early modern coffee nor tea substitutes have been researched by historians to any great length. They are briefly mentioned in e.g. Cowan, *The Social Life of Coffee*, 36–7; Ellies, Coulton, and Mauger, *Empire of Tea*, 199–200; Rappaport, *A Thirst for Empire*, 54. In modern histories tea and coffee substitutes are generally associated with the early history of chemistry

a reflection of the extent to which we today consume highly standardized, ready-to-use products, in the form of bagged and/or vacuum-packed powder or granules.<sup>9</sup> There are some exceptions of course: historical studies of wholesale and retail commerce provide us with some eighteenth-century notions of different qualities, particularly of Chinese tea which also was a highly standardized goods for its time.<sup>10</sup> There are also studies of early modern discourses surrounding the sensory experience associated with consuming the beverages; comments on their perceived psychoactive effects are perhaps the aspects which have been studied most frequently by historians of drugs.<sup>11</sup> Outside the realms of trade and medicine, and particularly within the context of the household where exotic beans and leaves were processed and consumed, there are few historical studies of how their materiality were perceived. In this respect the coffee and tea stand out compared with other studies of 'new' eighteenth-century goods such as Asian cotton textiles and Chinese porcelain, where their material qualities, colourfast dyes, lightness, thinness, and ability to hold hot drinks have been highlighted as significant for their success as consumer goods in Europe.<sup>12</sup>

The first aim of this article is to explore this everyday materiality of coffee and tea as leaves and beans, of being roasted and turned into grounds, and of beverages, drawing on substitute recipes from early modern Sweden. The starting point is that a substitute can be said to reflect what are perceived as the most important properties of the thing being copied. As the example above illustrates, the substitute made from oregano leaves was measured against 'Thé Boué', or Bohea tea, which at the time was the most common black tea imported from China; as Linnaeus's description above also suggests, it was not only the scent or taste of brewed tea that mattered, but how leaves looked before they were infused, how they unfolded in water, and the colour of the brew mattered too. Together, such descriptions can help us to understand perceptions and sensations associated with the new global goods, and by extension how and why they came to be so widely adopted.

The materials that the substitutes were made from are also important to this story – for example, *Origanum vulgare* was just one of many different locally grown plants used to imitate global goods in Sweden. And as we shall also discover, the provincial and city doctors engaged in Collegium medicum's project not only invented their own substitutes but also reported on existing popular uses of local plants for this purpose, as Linnaeus did in his assessment of Dean Walborg's tea. In this respect, the tea and coffee alternatives discussed by the members of Collegium

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and within the framework of war-induced supply crises, histories in which the term 'surrogate' is often used as a synonym. See e.g. Emma C. Spary, *Feeding France: New Sciences of Food, 1760–1815* (Cambridge: Cambridge University Press, 2014), 276–86, and Andrew Kloiber, 'Coffee, East Germans, and the Cold War World, 1945–1990' (PhD diss., McMaster University, 2017). Alternatively, the substances have been incorporated into histories of food fraud and poor people's consumption, histories that are predominately communicated via sources often containing a 'paternalistic' bias of a state official in charge of regulating food standards. See Simon D. Smith, 'Accounting for Taste: British Coffee Consumption in Historical Perspective', *The Journal of Interdisciplinary History* 27 no. 2 (1996): 209. They have in this context be seen as part and parcel of a more general culture of eking out or sometimes recycling tea leaves or coffee grounds. See Anne E. C. McCants, 'Poor Consumers as Global Consumers: The Diffusion of Tea and Coffee Drinking in the Eighteenth Century', *The Economic History Review* 61 (2008): 172–200, and Anna Knutsson and Hanna Hodacs, 'When Coffee was Banned: Strategies of Labour and Leisure among Stockholm's Poor Women, 1794–1796 and 1799–1802', *Scandinavian Economic History Review* (2021): 1–23.

<sup>9</sup>For a similar argument, see Emma Spary's critique of how we use contemporary notions of stimulants such as alcohol and coffee when we discuss eighteenth-century versions, in *Eating the Enlightenment*, 187–8.

<sup>10</sup>See e.g. Hoh-cheung Mui and Lorna H. Mui, *The Management of Monopoly: A Study of the English East India Company's Conduct of its Tea Trade, 1784–1833* (Vancouver: University of British Columbia Press, 1984).

<sup>11</sup>Again, a large topic impossible to summarize coherently; for a classic study see Jordan Goodman, Paula E. Lovejoy, and Andrew Sherratt, eds., *Consuming Habits: Global and Historical Perspectives on How Cultures Define Drugs*, 2nd ed. (London: Routledge, 2007). For a recent discussion of early modern European medical views on coffee see Scott K. Taylor, 'Coffee and the Body: From Exoticism to Wellness in Eighteenth-Century Europe', *Eighteenth-Century Studies* 54, no. 3 (2021): 633–50.

<sup>12</sup>For works on the materiality of cotton, see e.g. Beverly Lemire, *Cotton* (Oxford: Berg, 2011), and Giorgio Riello, *Cotton: The Fabric That Made the Modern World* (Cambridge: Cambridge University Press, 2013); for works on porcelain, see e.g. Robert Finlay, *The Pilgrim Art: Cultures of Porcelain in World History* (Berkeley, CA: University of California Press, 2010), and Suzanne L. Marchand, *Porcelain: A History from the Heart of Europe* (Princeton, NJ: Princeton University Press, 2020).

medicum promise to provide us with a more complex understanding of early modern globalization processes than those summarized above in relation to coffee and tea: an understanding which also considers more local circumstances and responses with a particular focus on material aspects.

The second aim of this article is to outline this material global-local history. The Swedish experience in this context can be seen as representative of a little-urbanized society: comparable to Ireland, Switzerland, Austria (Hungary), Germany, Poland, and Russia at that time, but different from England and the Low Countries.<sup>13</sup> The largely rural population lived off the land; although the exact numbers vary pending on how we count. Figures suggest that 80% of the total Swedish population (1.8 million in 1749) sustained themselves from agriculture, husbandry, hunting, and fishing.<sup>14</sup> This was probably more than the average in many parts of Europe, although not by much. Comparative numbers are hard to get at, but figures from around 1800 suggest that 30-50% of the entire European population was engaged in agriculture.<sup>15</sup> Most important here, as I will return to below, is that the rural context, and the agricultural household, are crucial for understanding the reception of coffee in particular. Borrowing from studies of modern global chains, and the relation between ecology and economy, I will suggest that while Swedish rural households were embedded in an economy of self-sustainability – mainly using what they could grow and forage themselves – their experience of producing and consuming substitutes of exotic goods laid the foundations for future change. To use the words of Anna Lowenhaupt Tsing, these activities could be ‘salvaged’ by the global value chains that by the nineteenth century had scaled up the production of coffee in Latin America.<sup>16</sup>

The article is set out as follows. In the first section, I will provide a brief background to Collegium medicum’s substitute project and the sources at the centre of my analysis. Following on from there, I shall discuss the different kinds of substitution histories we need to consider, and the practices and theories that guided the physicians and professors of medicine, as well as the contexts that surrounded them. In the following three sections, I shall focus on the actual substitution process, considering different beverages first separately and then jointly, as I get into issues relating to psychoactive impacts and taste. Finally, I will return to the everyday materiality of coffee and tea and the global-local history it provides, and to the implications of my results for the wider history of tea and coffee consumption in early modern and modern Europe.

### The Frugality Commission, Collegium medicum, and the correspondents

The Frugality Commission was established in late 1744 with a far-reaching and intrusive scope; its purpose was to reduce the perceived growing opulence of the Swedish people.<sup>17</sup> The importing of foreign luxuries was one of its key targets: estimates made by the body responsible for trade (*Kommerskollegium*) on behalf of the Commission suggested that the value of imported opulent goods equalled an amount of 5.2-million silver dollars, excluding textiles.<sup>18</sup> This of course went against the founding principles of the economic theory that we traditionally label ‘mercantilism’.<sup>19</sup>

<sup>13</sup>Paolo Malanima, *Pre-modern European Economy: One Thousand Years (10<sup>th</sup>–19<sup>th</sup> centuries)* (Leiden: Brill, 2009), 246 (Table 5, ‘Urbanization rates (%)’ for the year 1750). Note that these rates are based on towns larger than 10,000 people. As Malanima points out, towns of 2,000 people would have been a more suitable benchmark when discussing urbanization in early modern central and northern Europe (*Ibid.*, 247).

<sup>14</sup>On the composition of Sweden’s population, see Göran Behre, Lars Olof Larsson, and Eva Österberg, *Sveriges historia 1521–1809: stormaktsdröm och småstatsrealiteter* (*The History of Sweden 1521–1809: Great-Power dreams and small-state realities*) (Solna: Esselte studium, 1985), 220.

<sup>15</sup>Malanima, *Pre-modern European Economy*, 96.

<sup>16</sup>Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton, NJ: Princeton University Press, 2015), 62–5.

<sup>17</sup>Frugality Commission, protocol from meeting the 13 November 1745, ÄK814, Riksarkivet, Stockholm (here after cited as RA).

<sup>18</sup>Promoria, dated as having arrived at the Frugality Commission on 11 February 1745, ÄK814, RA.

<sup>19</sup>An alternative term that has been used for Sweden, but also for areas of Europe with less access to particularly Atlantic and Asian colonies in the eighteenth century, is cameralism; see Lisbet Koerner, *Linnaeus: Nature and Nation* (Cambridge, MA:

And it is in this context that tea, coffee, and chocolate, together with sugar, tobacco, foreign alcoholic drinks, and spices, were identified as particularly troublesome goods.

Two approaches were taken in relation to coffee, tea, and chocolate, three beverages that early modern Europeans often grouped symbolically and rhetorically as representing different parts of the world.<sup>20</sup> The first concentrated on fiscal measures, the result of which was a significantly higher consumer excise on the drinks introduced in 1747.<sup>21</sup> The second was to turn to Collegium medicum and engage its members in a project to find substitutes. Established in 1663 as a guild for physicians, it became a state-sanctioned institution with responsibility for the national provision of health care in 1698. Collegium medicum was also the channel through which the state could communicate with physicians situated across Sweden and with professors in medical faculties. What the Commission now sought from these professionals was information on plants that could be turned into substitutes matching two objectives: firstly, they would 'please the taste of the voluptuous', and secondly, they would 'conserve the health' of the consumer.<sup>22</sup>

In all, Collegium medicum received fourteen responses in 1745.<sup>23</sup> In 1746 it published the results in a twelve-pages-long treatise that made it clear that the board members of the Collegium had redefined the remit of its original assignment.<sup>24</sup> The publication makes no mention of substitutes for hot chocolate. Moreover, coffee substitutes are only discussed in one paragraph, and although some are listed, it is dismissive of the possibility of replacing imported coffee with local alternatives. What the treatise does contain is a list of tea substitutes (forty-five single-plant substitutes and ten blends) and a more than five-pages-long introduction. However, judging by the introduction, the Collegium did not even think the prospect of tea substitutes was very promising, arguing that it was more or less futile to resist either the power that 'fashion' had over the Swedish people or the irrational nature of mankind's longing for 'clothes and habits, food and drink' from faraway.<sup>25</sup> In this respect, we should read the treatise as part and parcel of the ongoing luxury debate, one in which those in charge of Collegium medicum were more pessimistic of the prospect of combating fashion than the Frugality Commission.<sup>26</sup>

The published accounts were only part of the discourse, though. Even if some of the passages from the fourteen letters communicated to Collegium medicum include references to the

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Harvard University Press, 1999), and Alix Cooper, *Inventing the Indigenous: Local Knowledge and Natural History in Early Modern Europe* (Cambridge: Cambridge University Press, 2007). For a recent contribution that frames the natural knowledge and political economics of Linnaeus within a discussion that originates in the Swedish seventeenth-century Baltic empire, Carl Wennerlind, 'Atlantis Restored: Natural Knowledge and Political Economy in Early Modern Sweden', *The American Historical Review* 127, no. 4 (2022): 1687–1714.

<sup>20</sup>Spary, *Eating the Enlightenment*, 62–4.

<sup>21</sup>Gustaf Modée Reinhold, Eleonora Hedvig Lindhielm, and Elsa Fougt, eds., *Utdrag utur alle ifrån den 7. decemb. 1718./1791 utkomne publique handlingar (Excerpts from all of the 7 December. 1718./1791 published public documents)*, vol. 3 (Stockholm: tryckt hos Lorentz Ludvig Grefing, på des egen bekostnad, 1749), 2445–6.

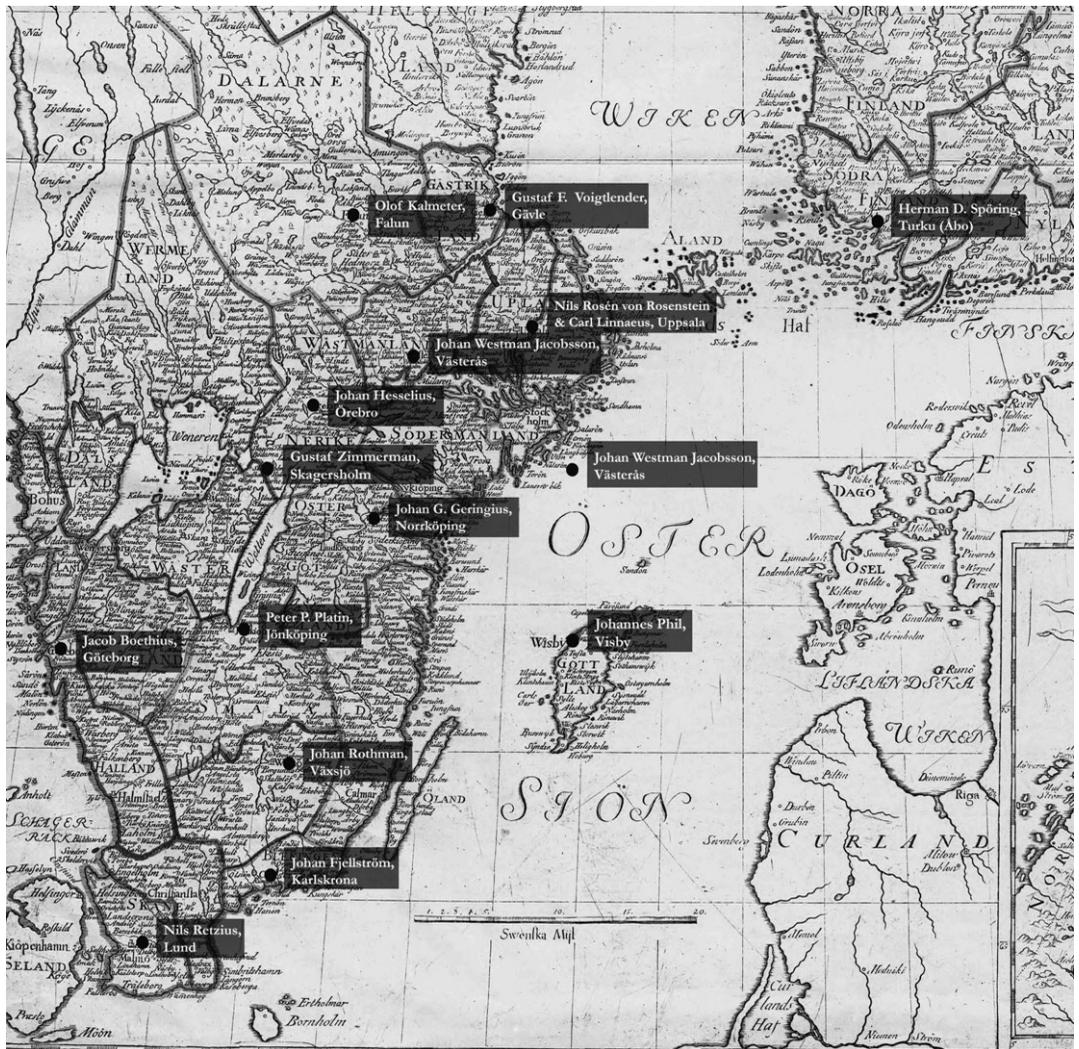
<sup>22</sup>Frugality Commission/Royal letter to Collegium medicum (hereafter cited as CM), Registratur, 21 April 1745, E 1 A:4 1740–51, Collegium medicum's Archive (hereafter cited as CMA), RA.

<sup>23</sup>The letters are bound together in *Inkomna handlingar, allmänna serie* (hereafter cited as IHAS), 1741–50, E 2:7, CMA, RA.

<sup>24</sup>For a discussion of the political tensions and institutional competition between the Frugality Commission and the Collegium medicum, see Hodacs, 'A Remedy for Many Ills'.

<sup>25</sup>*Kongl. Collegii medici kundgiörelse*, n.p.

<sup>26</sup>On the luxury debate in Sweden, see Leif Runefelt, *Att hasta mot undergången: anspråk, flyktighet, förställning i debatten om konsumtion i Sverige 1730–1830 (To Haste Towards Doom: Claims, Ephemerality, Pretense in the Debate about Consumption in Sweden 1730–1830)* (Lund: Nordic Academic Press, 2015). We can also read the debate in the light of the recently established Swedish East India Company; see e.g. Thomas Magnusson, '... till rikets obotliga skada och deras winning...': konflikten om Ostindiska kompaniet 1730–1747 ('... to the Irreparable Damage of the Kingdom, and to their Gains...': the Conflict over the East India Company 1730–1747) (Gothenburg: Historiska institutionen, Göteborgs universitet, 2008). Versions of the same debate took place across Europe as the new beverages lost their elite status; what had previously been thought of as panaceas had become associated with various ills, affecting men and women in different ways, see Cowan, *The Social Life of Coffee*, 40–7; Wouter Ryckbosch, 'From Spice to Tea: On Consumer Choice and the Justification of Value in the Early Modern Low Countries', *Past & Present* 242, no.1 (2019): 56–64.



**Figure 1. Map of Sweden: Location of Collegium medicum’s correspondents.** Source: Svea och Göta Riken med Finland och Norland. Sverige Topografiska kartor, Sverige, generalkartor, SE/KrA/0400/01A/013 f (1747 ca). Cropped and edited by Tara Byrne.

ongoing public debate, they do also reveal a more engaged approach to the substitute projects, providing a distinct provincial perspective reflecting the authors’ geographical location. Many of them lived in small towns, varying in size from inland Örebro (1,864 inhabitants) to Gothenburg (8,000).<sup>27</sup> In this context they represented a learned local elite who were able to make sensory evaluations of substitutes drawing on their experience of consuming imported coffee and tea. But they were also influenced by their surroundings; the large swaths of forests and farmland surrounding their home towns, areas that the correspondents were often tasked to traverse in order to cater to the needs of the largely rural population. As we shall see, their substitute proposals – what raw materials they suggested or reported on

<sup>27</sup>On the population size of Swedish towns see <http://ortshistoria.se/stad> (consulted 4 October 2022).

– were also to a large degree shaped by these ecologies and the people who inhabited them. Many of the substitute recipes provided in the letters were in fact already in use. These local versions of coffee and tea were not framed by concerns raised within the fields of political economy; rather, they represented what people used when they could not afford – or, equally if not more importantly, could not access – exotic goods. As we shall see, the raw materials used for the substitute(s) were limited to what could be harvested or foraged on farms and among households which supplied most of what they consumed themselves. The assumption is that ingredients they chose to use matched ideas of what imported tea and coffee should look, taste, feel and smell like, and that this rural ‘cosmopolitan sensibility’ was more widely circulated than the (imported) goods themselves.<sup>28</sup>

The fact that we can capture these notions of what coffee and tea meant to early modern Swedes, albeit interpreted and codified by Collegium medicum correspondents, and can situate them in their local environments or ecologies, makes the fourteen letters a unique type of source material. In addition to this material, the article also draws on a selection of printed texts, most importantly Linnaeus’s two articles, ‘Notes on tea and tea drinking’ (1746) and ‘Notes on coffee’ (1747) printed in Olav. Peter. Hiorter’s *Almanac*, a cheap annual print with a large popular range.<sup>29</sup>

### Policies, plants, and processes – substitutions in early modern history

The above discussion suggests that we need to consider substitutes from three different perspectives: the local context, the medical practitioners, and the state, the latter represented by the Frugality Commission. Historians have been interested in the effects of state policies and the economic role of substitutes on a long-term basis. A famous example from the early modern period is the restriction on imports of colourful piece goods from South Asia, set in place to protect the English wool industry, which promoted the development of new textile-printing technologies and eventually also new spinning and weaving mechanisms. The well-known end result was a domestic industry geared towards the mass production of standardized goods for a global market. In combination with the expansion of the British Empire, the Indian peninsula was reduced from being a manufacturer of cotton fabrics to an exporter of raw cotton.<sup>30</sup> This result was obviously not foreseen by those instigating the initial import bans in Britain, and nothing in the remaining archive material of the Frugality Commission suggests that its members thought beyond the need to reduce imports when they came up with the substitution scheme. Among the other actors at the forefront here, it was only Linnaeus who envisioned any major changes to the world economy, although, as we shall see below, in his case they were the imagined result of plant transfer – of bringing a live tea shrub from China to Sweden – rather than of inventing a substitute. For the medical practitioners and local inventors of tea and coffee replacements we find other and much more specific meanings and practices, which need different historiographies than those concerned with political economy and factory technology to come to the fore. In the next two sections I will first draw on the history of medicine and botany, where the focus is on a substitute as a material, as a noun. I will then move on to talk about the act of substituting as a verb and as a process – drawing on histories of trade skills – of experimentation, and as a form of commodity indigenization.

<sup>28</sup>On cosmopolitan sensibilities outside elite context in global history see Beverly Lemire, *Global Trade and the Transformation of Consumer Cultures: The Material World Remade, c. 1500–1820* (Cambridge: Cambridge University Press, 2018), 11–13.

<sup>29</sup>Reprinted in ‘Linnés Almanacksuppsatser’ (‘Linnaeus’s Almanack Essays’), *Svenska Linnésällskapets årskrift*, (*The Swedish Linnaean Society’s Year Book*) 1928, 134–40.

<sup>30</sup>Giorgio Riello and Prasanna Parthasarathi, eds., *The Spinning World: A Global History of Cotton Textiles, 1200–1850* (Oxford: Oxford University Press, 2011); Riello, *Cotton*.

### Substitution in early modern medicine and natural history

When coffee and tea arrived in Europe in the seventeenth century they were presented as medicines; medicine is also important framework for understanding the extent to which different substances could replace one another. Within this field, and dating back to antiquity, a series of practices and theories had evolved that was concerned with how to replace hard-to-get ingredients from across the Eurasian continent, used in what were often complex medicines involving a large number of components. Thought experiments such as ‘analogy’, ‘abstraction’, and ‘induction’ helped guide the manufacturing of drugs. Later on, specific disciplines, including natural history, and theories for identifying species and determining to which genera they belonged, influenced substitution practices as well.<sup>31</sup> As knowledge of the natural world expanded – not least in the wake of the European colonization of America, but also as Europe became divided into states with greater or lesser access to the New World – substitution theories emerged which promoted the more systematic replacement of exotic ingredients with locally grown ones. While physio-theological thinking reinforced this approach – local plants cured local bodies and God would not have distributed wealth unevenly across the world, so the argument went – the rationale for substitution here was also an economic one. It was cheaper to harvest *materia medica* at home rather than import it.<sup>32</sup> The latter argument was also used in other contexts, particularly in the production of medicine for poor sections of society.<sup>33</sup>

The theories and practices at the heart of medicine substitutes are evident in how Collegium medicum’s correspondents approached the project to find substitutes for coffee and tea. Many used *Succedaneum*, the Latin term predominantly applied in medical contexts when referring to substitutes in their letters.<sup>34</sup> At the time, Swedish medicine was to no small extent influenced by Dutch developments: many early modern Swedish physicians studied in the Netherlands as part of their education.<sup>35</sup> It was also within the sphere of Dutch-educated Cartesian medicine that the new exotic beverages received their warmest endorsements.<sup>36</sup> Most famous is the late seventeenth-century physician Cornelis Bontekoe, who presented tea as the *panacea* for every form of ill-health, recommending quantities of up to 200 cups a day.<sup>37</sup> As we shall see below, the connection between health and tea continued to be important in the development of tea substitutes in Sweden.

The Dutch Republic, and the developments which took place within its empire, was important in another respect too, and one which had direct bearing on the substitute project: the prospect of transferring plants. The game-changer in this story was the transplanting of the coffee plant from the Middle East to Asia (Java), and then to the West Indies/Latin America around 1700. To Linnaeus, who spent three years in the Dutch Republic, this shift in the geography of the production of coffee was highly influential for his plans to start tea plantations in Sweden. How ‘the

<sup>31</sup>Samir Boumediene and Valentina Pugliano, ‘La route des succédanés. Les remèdes exotiques, l’innovation Médicale et le marché des substituts au XVII<sup>e</sup> siècle’, *Revue D’Histoire Moderne Contemporaine* 3 (2019), 28; Alain Touwaide, ‘Quid Pro Quo: Revisiting the Practice of Substitution in Ancient Pharmacy’, in *Herbs and Healers from the Ancient Mediterranean through the Medieval West. Essays in Honor of John M. Riddle*, ed. A. van Arsdall and T. Graham (London: Routledge, 2012), 19–61. See also Jordan Goodman, who defines coffee, tea, chocolate, and tobacco as substitutes of earlier local European substances, in Jordan Goodman, ‘Excitantia: or, How Enlightenment Europe Took to Soft Drugs’, in *Consuming Habits: Global and Historical Perspectives on How Cultures Define Drugs*, ed. J. Goodman, P.E. Lovejoy, and A. Sherratt (London: Routledge, 2007), 121–32.

<sup>32</sup>Cooper, *Inventing the Indigenous*, 26–30. On the English discussion along similar lines see Cowan, *The Social Life of Coffee*, 37.

<sup>33</sup>Boumediene and Pugliano, ‘La route des succédanés’, 40–1.

<sup>34</sup><https://www.collinsdictionary.com/dictionary/english/succedaneum> (consulted 2 October 2022).

<sup>35</sup>Bo S. Lindberg, *Peregrinatio medica: svenska medicinariae studieresor i Europa 1600–1800 (Peregrinatio Medica: Educational Trips of Swedish Physicians in Europe 1600–1800)* (Uppsala: Acta Universitatis Upsaliensis, 2019), 162.

<sup>36</sup>Anette Henriette Munt, ‘The Impact of Dutch Cartesian Medical Reformers in Early Enlightenment German Culture (1680–1720)’, (PhD diss., University College London, 2005). See also Ryckbosch, ‘From Spice to Tea’, 49–53.

<sup>37</sup>Taylor, ‘Coffee and the Body’, 639.

happy Arabia' had lost its natural monopoly to Europeans, who brought with them coffee plants to their Asian as well as their American colonies, was analogous to how Linnaeus envisioned robbing the Chinese of their tea monopoly.<sup>38</sup> Tea, unlike coffee, could grow in Sweden, Linnaeus was sure: he envisioned huge plantations and huge profits from the move. While this would famously become a pet project of Linnaeus, one to which he returned many times, it is worth pointing out that it was particularly high on his agenda in the mid-1740s. In his letter to Collegium medicum from October 1745, Linnaeus refers to his plans to send one of his students, Pehr Kalm, on a journey across the Eurasian continent, intending to bring back seeds/seedlings from a tea shrub.<sup>39</sup> The advantage of the caravan route was that it did not cross the equator, something which was thought to have a detrimental effect on plants carried onboard ships. Collegium medicum, probably under the influence of Linnaeus's best friend Abraham Bäck, who at the time had only recently joined the board, supported the idea by mentioning it in its interim report to the Frugality Commission in the summer of 1746.<sup>40</sup>

In light of the above plans, it comes as no surprise that Linnaeus had mixed feelings towards the idea of tea substitution within the context of the assignment with which Collegium medicum had been burdened. That he praised Walhborg's tea substitute in his travel account from 1747 probably only reflects the obligation he felt towards those who tasked him with doing an inventory of useful nature in the Swedish provinces, and towards those who paid for his journey, the Swedish Estates (*Riksdag*).<sup>41</sup> What is interesting in the case of the project that Collegium medicum now was in charge of is the taxonomic argument that Linnaeus brought to the table to refute the possibility of finding a successful tea substitute. In a letter to Collegium medicum he wrote: 'As far as it is concerned, it is undisputed that throughout Europe we have no plant, which with the tea itself is in some kind of relationship, that we can thus by no means achieve a genuine Succedaneum.'<sup>42</sup> Notable here is the reference to the lack of plants taxonomically related to the tea plant, i.e. belonging to the same *genera*, something which it was suggested was a pre-condition for a plant becoming a 'genuine' substitute. In the case of coffee substitutes, we can find a similar logic in Linnaeus's approach; he argued that *Lonicera xylosteum* and *Caprifolium* were the closest relatives to the coffee plant, but he dismissed the possibility of using their fruits, seeds, or kernels as coffee substitutes since it was not possible to process them like coffee beans.<sup>43</sup>

Returning to the question of whether the European flora contained any species related to tea, this was a contested issue. In *Flora Lapponica*, published in 1737, Linnaeus discusses the Danish seventeenth-century naturalist Simon Pauli's suggestion that *Myrica gale*, Bot-myrtle (*Porss* in Swedish), was a relative of the tea plant, something Linnaeus dismisses as 'crazy fantasies'.<sup>44</sup> Pauli's claim (his name for the same plant was *Thee europaeum*) was nonetheless taken up and revised by one of the provincial physicians corresponding with Collegium medicum, Johan Hesselius, who was stationed in the town of Örebro. He argued that there had been some confusion, and that the plant referred to as *Thee europaeum* was different to the Swedish *Porss*, which Hesselius describes with some disdain (most notably because it was used by farmers as a substitute to hops, as it had an intoxicating effect). Pauli's *Thee europaeum* was an altogether

<sup>38</sup>Linnés Almanacksuppsatser', 137.

<sup>39</sup>Nils Rosén von Rosenstein and Carl Linnaeus, Uppsala 11 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>40</sup>Letter to Kungl. Majt, 8 June, 1746, Registratur, Vol. 7, B1 7, CMA, RA.

<sup>41</sup>According to Pehr Kalm, Linnaeus feared criticism that his published travel account did not contain enough useful knowledge (see letter from Pehr Kalm to Sten Carl Bielke, 5 Nov. 1745, in *Pehr Kalms brev till friherre Sten Carl Bielke (Pehr Kalm's letter to Baron Sten Carl Bielke)*, ed. Carl Skottberg (Åbo: Svenska Litteratursällskapet i Finland, 1960), 100.

<sup>42</sup>Nils Rosén von Rosenstein and Carl Linnaeus, Uppsala 11 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>43</sup>Nils Rosén von Rosenstein and Carl Linnaeus, Uppsala 11 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA, see also 'Linnés Almanacksuppsatser', 138.

<sup>44</sup>Carl von Linné, *Skrifter af Carl von Linné (Writings by Carl von Linné)* Utgifna af Kungl. svenska vetenskapsakademien. I. Flora Lapponica, öfversatt till svenska språket af Th. M. Fries (Uppsala: Almqvist & Wixsells Boktryckeri, 1905), 251. See also 'Linnés Almanacksuppsatser', 135.

different species, with leaves that ‘looked’ like the ‘leaves of East India tea’, and which when infused in water had a notable ‘power’, Hesselius argued.<sup>45</sup>

We shall return to Hesselius’s advice for preparing tea from *Thee europaeum* later on; for now, it is important to note that, while Linnaeus was ‘more right’ than Hesselius, the latter reached his conclusions in ways that were similar to Linnaeus – by comparing leaves from native plants with the look of the leaves in the finished product sold as tea. It is also worth highlighting that the identity of the tea plant, today *Camellia sinensis*, was debated throughout the eighteenth century; Linnaeus changed the names he allotted to the plant, at one point (in 1762) distinguishing between two tea species (*Thea Bohea* and *Thea Viridis*), i.e. by using a distinction central to the commerce in tea to separate them.

Aside from a taxonomy informed by commerce, geography and theology played a crucial role in defining substitutions; Pauli/Hesselius framed their tea candidate by drawing on Europe as an entity. Others, like Johannes Phil, based in Visby on the Baltic island of Gotland, referred to ‘indigenous Succedanea’ – the opposite of ‘foreign goods’.<sup>46</sup> Both he and Herman Spöring, Professor of Medicine at Åbo Academy, used the term *succedanea* to refer to a wide range of domestic plants that could serve this role, many of which were well-known medicinal plants, such as the members of the Veronica family.<sup>47</sup> Spöring’s comment in this context – that, ‘As experience carefully attest . . . herbs that grow in our climate are more useful to our bodies . . . than those prescribed from far-flung places at great expense’ – is telling.<sup>48</sup> We recognize the physio-theological framework dating back to the seventeenth and even sixteenth centuries common particularly among medics and natural historians operating in areas of Europe with little access to drugs imported from the New World.<sup>49</sup> In a move that we can read as both opportunistic and strategic Linnaeus suggests using twinflowers (*Linnea borealis*) as a tea substitute in his letter to Collegium medicum. Here he argues that not only does the plant produce a healthy brew, but also that it is so rare in ‘Norway, Russia, Switzerland, Geneva’ that the latter countries would never be able to sell ‘one single pound’ of it.<sup>50</sup> It is possible that by suggesting using the leaves of his signature plant, Linnaeus sought to demonstrate an allegiance with the substitute project on a general level. Taking this stance, he could lend credibility to what at this time was his main objective, to import tea plants or seeds from China via the land route, with the intention to start production at home.<sup>51</sup>

### Substitutions as imitation, the result of experimentation, and commodity indigenization

Sourcing raw material for substitutions did involve drawing on academic scholarship. The next step, the processing of the material for it to pass as coffee or tea, required using different types of knowledge, which has been the object of study in various fields of history. To economic historians concerned with the imported substitution of durable goods, the act of imitation has predominantly, for example, been discussed in relation to artisanal knowledge and skill, as a form of ‘useful knowledge’. Skilful copying was a celebrated talent among artists and tradespeople in the

<sup>45</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA. On different uses of plants from the Rhus family see also: Fred A. Barkley and Elizabeth Ducker, ‘A Short History of Rhus to the Time of Linnaeus’, *American Midland Naturalist* 19, no. 2 (1938): 265–333.

<sup>46</sup>Johannes Phil, Visby, 12 July, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>47</sup>Herman D. Spöring, Turku (Åbo), 30 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>48</sup>Herman D. Spöring, Turku (Åbo), 30 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>49</sup>Cooper, *Inventing the Indigenous*.

<sup>50</sup>Nils Rosén von Rosenstein and Carl Linnaeus, Uppsala 11 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>51</sup>It is worth pointing out that Linnaeus, when he was in the Dutch Republic and working for George Clifford III, had experienced several failed attempts to import tea seeds from China via the Dutch East India Company, Hanna Hodacs, *Silk and Tea in the North: Scandinavian trade and the market for Asian goods in eighteenth-century Europe* (Basingstoke: Palgrave Macmillan), 157.

eighteenth century. It could involve decorative designs but also the imitation of surfaces of expensive goods, such as that of lacquer ware.<sup>52</sup>

We recognize a similar approach to the substitute project among Collegium medicum's correspondents. For example, Nils Retzius, a provincial physician from the county of Skåne, in the south of Sweden, discuss the possibility of 'imitating' coffee and 'representing' cacao in his letter.<sup>53</sup> As will be shown below, visual similarity was a very important quality of tea and coffee substitutes. But the application of skills in the process of making the substitute mattered too. Discussing tea substitutes, Jacob Boëthius, city physician in Gothenburg, writes that leaves and herbs could 'uppfinnas', a word which could mean both 'being invented' and/or 'being found'.<sup>54</sup> Johan Hesselius, meanwhile, underlined the need for making many 'diligent attempts' as the key for success.<sup>55</sup> To substitute did thus involve experimentation, which historians of early modern science have shown meant drawing on resources and equipment at home, in the household, and more specifically the kitchen.<sup>56</sup> Moreover, it did, as historical research on recipes also has demonstrated, mean engaging with knowledge typically held by women.<sup>57</sup> It is hence not surprising that Retzius in his letter suggests that 'inventive women' were best placed to develop substitutes.<sup>58</sup> Since the processing of the substitutes took place in the kitchen we can deduce that women were there; occasionally they are also mentioned in the correspondence, as in Hesselius's discussion of a coffee substitute he had served up, which he instructed 'noble and sensible women' to 'manufacture'.<sup>59</sup>

In this respect the story bears some principal similarities to the process of how drinking chocolate was introduced into the diet of the Spanish colonizers in Latin America, and then how the habit spread. In the foreground here were indigenous women who married or worked as servants in the households of the colonizers. These forms of chocolate preparation and consumption then moved across the Atlantic, and became incorporated into European Iberian culture. Once established, and in response to fears of creolization, drinking chocolate was reframed with the help of medical theories and new ingredients, something which also came to mean that the agents involved in transferring indigenous knowledge were written out of the history.<sup>60</sup> The case helps us to understand the need to focus on the agents in the kitchens, but also on how exotic goods circulated among different networks.

The uptake of tobacco consumption in early modern Europe is another illuminating example of how one culture responds to and absorbs a new commodity, a process which has been described as 'commodity indigenization'.<sup>61</sup> The early and widespread use of this Atlantic crop in the Nordic countries – by the beginning of the eighteenth century smoking was common in Sweden – does also help us to detect an important circumstance: since tobacco plants could be cultivated there, they could be incorporated into the self-sufficient household's production and consumption.<sup>62</sup>

<sup>52</sup>Reed Benhamou, 'Imitation in the Decorative Arts of the Eighteenth Century', *Journal of Design History*, 4, no. 1 (1991): 1–13; Maxine Berg, 'From Imitation to Invention: Creating Commodities in Eighteenth-century Britain', *The Economic History Review* 55, no. 1 (2002): 1–30.

<sup>53</sup>Nils Retzius, Lund, 23 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>54</sup>Jacob Boëthius, Göteborg, to CM, 13 Nov. 1745, IHAS, 1741–50, E2:7, CMA, RA.

<sup>55</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>56</sup>Simon Werrett, *Thrifty Science: Making the Most of Materials in the History of Experiment* (Chicago, IL: University of Chicago Press, 2019).

<sup>57</sup>Elaine Yuen Tien Leong, *Recipes and Everyday Knowledge: Medicine, Science, and the Household in Early Modern England* (Chicago, IL: University of Chicago Press, 2018).

<sup>58</sup>Nils Retzius, Lund, 23 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>59</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>60</sup>Marcy Norton, 'Tasting Empire: Chocolate and the European Internalization of Mesoamerican Aesthetics', *The American Historical Review* 111, no. 3 (2006): 660–91.

<sup>61</sup>Jordan Goodman, *Tobacco in History: Cultures of Dependence* (London: Routledge, 1994), 41–2.

<sup>62</sup>Mats Morell, 'Swedish Agriculture in the Cosmopolitan Eighteenth-Century Sweden', in *Sweden in the Eighteenth-Century World: Provincial Cosmopolitans*, ed. G. Rydén (Farnham: Ashgate, 2013), 86–8.

This brings us back to the local perspective, and to those whose recipes and practises Collegium medicum's correspondents codified. Their substitutes can, for want of a better word, be understood as a form of 'proxy commodity indigenization'. As I shall show below, producing them involved making use of different kinds of local raw materials which were processed in a similar way to the imported goods, and with the aim of creating imitations of exotic beverages.

With this in mind, let us turn to the various raw material and processing technologies discussed in the letters. Since they differed depending on which beverage was being imitated, the tea and coffee substitutes will be discussed separately in the following two sections.

### Foraging, rolling, and roasting tea

What was tea to early modern Swedes? Like Linnaeus in the introductory quote, Boëthius in Gothenburg refers to 'The Bohe' as the prototype in his advice on substitution,<sup>63</sup> as does Olof Kalmeter, the physician to the copper mine in Falun and Linnaeus's brother-in-law, who mentions both 'The de Boe' and 'green tea' as reference points in his tea substitute recipes.<sup>64</sup> Bohea tea was by far the most common tea imported from China to Europe in the eighteenth century, a trade that was growing exponentially, not least because it gave rise to lucrative illegal dealings. The recently established Swedish East India Company's imports were largely re-exported and eventually smuggled into Britain, which was the biggest consumer of tea in Europe.<sup>65</sup> However, and as Hesselius's remark pays witness to, Chinese tea did also spill over into the Swedish market. Hesselius noted that it could be found in merchants' stalls across the country.<sup>66</sup> Collegium medicum makes a similar point in its print treatises, claiming that even among poorer people tea had become common.<sup>67</sup> Likewise Linnaeus begins his *Almanac* text 'Notes on tea and tea-drinking' by stating that 'Tea (Thea) is a Chinese and Japanese drink, which now is not only common in Sweden, but a lot across Europe.'<sup>68</sup> While such statements are hearsay, and while it is hard to trace the actual consumption of imported tea in Sweden, they do suggest a popular awareness of the beverage.

How then to turn this global commodity of Chinese origin into a local one; what did it imply? We can think about it as a process that involved several stages, and which took place in different spaces. The kitchen garden was one; however, it is notable that very few plants suggested by Collegium medicum's correspondents were cultivated. If we use the treatise published by Collegium medicum as a summary, we note that only five of forty-five plants listed there (hyssop, sage, mint, lemon balm, and red roses) were cultivated. Instead, the substitute tea leaves were to a large extent foraged. And those foraged were to no small extent plants with a history of being used in medicine, as in the case with germander speedwell. Hesselius, who recommended 'Veronica med.' (probably *Veronica chamadrys*), advised searching 'in old swede-fields and elsewhere in the forest [where it] grows quite abundantly.'<sup>69</sup> Similarly, Linnaeus recommended looking for twinflower leaves in 'large and extensive forests, especially where the forests are old and shady'.<sup>70</sup> Additional advice was made on *when* to forage. Phil in Visby recommended collecting germander speedwell around midsummer, and Kalmeter in Falun suggested gathering nettles in the spring.

<sup>63</sup>Jacob Boethius, Göteborg, to CM, 13 Nov. 1745, IHAS, 1741–50, E2:7, CMA, RA.

<sup>64</sup>Olof Kalmeter, Falun, 21 Nov. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>65</sup>Leos Müller, 'The Swedish East India Trade and International Markets: Re-exports of Teas, 1731–1813', *Scandinavian Economic History Review*, 51, no. 3 (2003): 28–44.

<sup>66</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>67</sup>*Kongl. Collegii medici kundgiörelse*, n.p.

<sup>68</sup>Linnés *Almanacksuppsatser*, 134.

<sup>69</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA. See also Platin on finding Veronica in similar locations in, Peter P. Platin, Jönköping, 11 July 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>70</sup>Nils Rosén von Rosenstein and Carl Linnaeus, Uppsala 11 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

Gustaf Fredrik Voigtlander, stationed in Gävle, advised that leaves from red clover were best gathered in the middle of the day when they had been ‘blown free’ (of dew).<sup>71</sup>

Turning to the next step in the processing of tea substitutes it is possible to detect a more direct Chinese influence, although mediated by visiting Europeans, who noted down their observations on tea.<sup>72</sup> Johannes Phil provides a detailed description of how to make ‘Chinese tea’ from germander speedwell. The step-by-step account included washing the leaves and ‘drying them in small “bouquets on a string” until they “wilt”, after which the leaves are ‘somewhat dried’ in a clean pan, on a low heat, using a wooden stick to stir. Next, the leaves are poured on to a clean cloth on top of a table, and rolled ‘together like tea’, after which again the leaves are to be put in a pan, ‘to dry a little, but with caution not to burn them’. After rolling them a second time (optional), they are left to dry covered by paper. The tea can then be stored together with ‘some leaves of lemon balm’ in thin boxes.<sup>73</sup> The attention to detail, including the rolling of the tea, is reminiscent of Linnaeus’s description of Walhborg’s tea, quoted at the beginning of this article.

Similar descriptions are repeated in other contexts too. In Linnaeus’s article ‘Notes on tea and tea drinking’, from 1746, he describes the process of making tea in China. He explains that roasting the leaves (while they still can ‘secrete’ liquid), and rolling them helps to extract some of the harmful substances which otherwise could cause ‘perplexity’ to the brain and make the consumer ‘giddy’.<sup>74</sup> Although less detailed, in his letter Hesselius likewise links the ‘laborious preparation’ of tea leaves in China with the need to suppress their ‘harmful narcotic power’.<sup>75</sup> In the case of the Swedish substitutes, it seems, however, that the process of roasting and rolling fulfilled no other function than to produce a good which was visibly similar to Chinese tea before use. The look of the brewed substitution tea mattered too. Peter Platin, from Jönköping, who like Phil favoured the use of germander speedwell, suggested pre-boiling the leaves ahead of drying them, something which, once infused, would produce a tea with a ‘beautiful yellow-green colour’.<sup>76</sup> Hesselius, who promoted *Thee europaeum* as a tea substitute, did likewise, explaining that the leaves took on a colour ‘almost like . . . foreign tea’ after having been soaked and dried as part of the preparation process.<sup>77</sup>

It is worth noting that the term ‘infusion’ is used interchangeably with the term ‘tea’ by the Collegium medicum correspondents when they discuss the results of their work.<sup>78</sup> A closer look at the historic use of these terms in Swedish reveals interesting overlaps. One of the earliest uses of infusion in Swedish is in a husbandry book from late seventeenth-century Sweden, describing how to make two types of violet syrups: ‘Violet syrup’ and ‘Violet syrup *per Infusion*’. The first one involved blending violet flowers with melted sugar, the other leaving water and flowers under hot ash for twenty-four hours, then straining the mixture, then boiling it again.<sup>79</sup> By the 1740s the term infusion seems to have become intrinsically linked to tea, at least in scholarly contexts such as in the Swedish chemist Johan Gottschalk Wallerius’s taxonomy of water types published in 1748 (*Vatturiket*). Here the Swedish chemists use (Chinese) tea as an example of the ‘sub spices’ ‘*Infusa*’. This was a liquid produced

<sup>71</sup>Johannes Phil, Visby, 12 July 1745; Olof Kalmeter, Falun, 21 Nov. 1745; Gustaf F. Voigtlander, Gävle, 14 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>72</sup>Judging by Linnaeus’s *Almanac* article it was Engelbert Kämpfer’s (1651–1716) accounts of tea processing that was most important here; see ‘Linnés Almanacksuppsatser’, 135.

<sup>73</sup>Johannes Phil, Visby, 12 July, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>74</sup>‘Linnés Almanacksuppsatser’, 135.

<sup>75</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, see also Johan Rothman, Växjö, 24 May, 1745, to CM, both IHAS, 1741–50, E2:7, IHAS, CMA, RA.

<sup>76</sup>Peter P. Platin, Jönköping, 11 July 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>77</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>78</sup>Nils Rosén von Rosenstein and Carl Linnaeus, Uppsala, 11 Oct. 1745; Johan Rothman, Växjö, 24 May, 1745, to CM, both in IHAS, 1741–50, E2:7, CMA, RA.

<sup>79</sup>Åke Rålamb, *Adelig öfning*, 14 (Stockholm, 1690), 136.

by ‘pouring boiling water over a herb to obtain its inner power, the result is a thin and clear liquid.’<sup>80</sup> Anecdotal evidence suggests that the term infusion almost disappears from use thereafter, at least in publications providing simple medical advice involving hot water and herbs. Here the term tea is much more common instead.<sup>81</sup> Why is hard to tell: perhaps it was the result of the status that Chinese tea had in the seventeenth century as a medicine, as well as the growing popularity of tea – or at least warm beverages in which water was the main ingredient – in the eighteenth century.

### Harvesting, burning, milling, and boiling coffee

If we know that the tea imported into Europe almost exclusively came from China, the origin of coffee beans was far more elusive. Among Collegium medicum’s correspondents only one letter, that by Johan Fjellström, Navy physician in Karlskrona, points to a place: it was the ‘coffee bean from the Levant’ that he sought to replace with local acorns.<sup>82</sup> To this we can also add a piece Linnaeus wrote in 1747: ‘Notes on coffee’ printed in Olav. Peter. Hiorter’s *Almanac*. Here he states that ‘Levantine coffee beans . . . although in size they are the smallest, yet in power, they are estimated to be the best.’<sup>83</sup> Nonetheless, given the growing dominance of slave-produced plantation coffee from the West Indies and Java in Amsterdam, from where merchants bought most of the coffee imported to Sweden (73% in 1738), we can assume there was little Levantine coffee in Sweden in the 1740s. Assuming the Amsterdam share was the same in 1745 as in 1738, the total Swedish import amounted to 12,366 pounds or 5.3 tons of coffee beans.<sup>84</sup> More coffee did probably arrive as smuggled goods: a recent study shows that such business was rife in the second half of the century.<sup>85</sup>

Raw coffee beans needed to be processed before they could be made into a brew, something which was also the case with substitutes suggested to Collegium medicum. The first step – what we today call roasting – was, however, a problematic process, at least to Linnaeus, who in his letter to Collegium medicum writes: ‘foremost in coffee is the burnt Empyreumatic oil’ which was not conducive to ‘conserving health’.<sup>86</sup> Health concerns relating to coffee are expressed by the other correspondents too, and although they do not point to the roasting process it seems likely that they too perceived the latter as problematic.<sup>87</sup> Nonetheless, almost all of them propose substitutes to

<sup>80</sup>Johan Gottschalk Wallerius, *Hydrologia, eller Wattu-riket, indelt och beskrifvit, jämte anledning til vattuproffvers anställande (Hydrologia, or the Water Kingdom, Divided and Described, Together with the Reason for the Employment of Water Tests)* (Stockholm: uplagd på Lars Salvii egen kostnad, 1748), 105.

<sup>81</sup>A good example here is Johan Haartman, *Tydlig underrättelse, om de mäst gångbara sjukdomars kännande och motande, genom lätta och enfaldiga hus-medel; samt et litet res- och hus-apothek; dem til tjenst, som ej hafwa tillfälle at rådfråga läkare, sammanfattadt och utgifwit af Joh. Joh:son Haartman (Clear Information about the Symptoms and Treatment of the most Common Diseases, through Easy and Simple Home Remedies; as well as a Small Travel and Home Pharmacy; for Those Who do not Have the Opportunity to Consult a Doctor, Summarized and published by Joh. John Haartman)* (Stockholm and Åbo: [Haartman], 1759).

<sup>82</sup>Johan Fjellström, Karlskrona, 17 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>83</sup>‘Linnés Almanacksuppsatser’, 138.

<sup>84</sup>Jan Thomas Lindblad, *Sweden’s Trade with the Dutch Republic 1738–1795: A Quantitative Analysis of the Relationship Between Economic Growth and International Trade in the Eighteenth Century* (PhD dissertation, Van Gorcum, Amsterdam, Assen, 1982), 152; *Historisk statistik för Sverige (Historical statistics for Sweden)*. Vol. 3, *Utrikeshandel 1732–1970 (Foreign trade 1732–1970)* (Stockholm, Statistiska centralbyrån, Allmänna förlaget, 1972), 156. For a discussion of the role of Amsterdam as a staple market for coffee, see Steven Topik, ‘The World Coffee Market in the Eighteenth and Nineteenth Centuries, from Colonial to National Regimes’. Working paper 04/04, Department of History, University of California, Irvine, USA, 14.

<sup>85</sup>Anna Knutsson, *Shadow Economies in the Globalising World: Smuggling in Scandinavia, 1766–1806* (London: Routledge, 2022), chap. 5.

<sup>86</sup>Nils Rosén von Rosenstein and Carl Linnaeus, Uppsala, 11 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA, see also ‘Linnés Almanacksuppsatser’, 139.

<sup>87</sup>Herman D. Spöring, Turku (Åbo), 30 May 1745; Johan Fjellström, Karlskrona, 17 Oct. 1745; Nils Retzius, Lund, 23 Oct. 1745, all to CM, IHAS, 1741–50, E2:7, CMA, RA.

Table 1: Coffee substitutes

	Wild	Domestic	Processed	Imported
Acorns	3			
Almonds				1
Barley		5		
Barley, malt		1		
Barley, naked ('himmelskorn')		1		
Beans		2		
Beans (Swedish)		1		
Beans (Turkish)		2		
Beans, broad		2		
Bread			1	
Hazelnuts	1			
Grain, un-crushed ('gryn')		3		
Juniper berries	1			
Oats		2		
Peas		4		
Peas, grey		1		
Rye		1		
Seeds, <i>Caprifolium</i>	1	1		
Seeds, <i>Lupinus</i>	1			
Seeds, <i>Lonicera</i>	1	1		
Wheat		5		
<b>Sum</b>	<b>8</b>	<b>32</b>	<b>1</b>	<b>1</b>

Sources: Letters to Collegium medicum, Inkomna handlingar, Allmänna serie, 1741–50, E2:7, Collegium medicum's Archive, Riksarkivet, Stockholm.

replace imported coffee, which needed to be roasted, suggesting the influence of already established practices.

As Table 1 shows, what was suggested was a variety of grains, with barley coming out as the top seed, followed by wheat, rye, and oats. Different types of beans and peas were also common. In contrast to tea substitutes, it becomes abundantly clear that most coffee replacements were grown; they matched what was local staple agricultural goods at the time. One cannot but notice that uncrushed grains, as well as beans and peas, are similar in shape and size to what we can assume the unroasted coffee beans sold in Sweden would have looked like.

Morphological affinity was a principle in the substitution of medicines going back to antiquity. Acorns, one wild produce that three physicians recommended, do also have certain resemblances,<sup>88</sup> as do hazelnuts (but perhaps not juniper berries), although it is worth pointing out that they were both suggested by one correspondent only (Hesselius), who admittedly had not tested them.<sup>89</sup> It is worth noting that two of the other 'wild' candidates, seeds from *Caprifolium*, and *Lonicera*, were recommended by Linnaeus because of their perceived close relationship with *Coffea arabica*, although he subsequently ruled them out because they 'are so small that it is impossible to benefit from them'.<sup>90</sup>

We recognize Linnaeus's botanical framework for substitution; his dismissal of certain substitutes is, however, also of interest as it points to the central role of roasting. Arguably, to mimic this process, the substitutes needed to be of a certain size. How to roast or 'burn' the substitute is also discussed in the letters. Platin describes how he made coffee from 'good barely', a process which involved washing and drying the corn, 'burning' it in 'an iron pot', while 'constantly being stirred'. Once ground, he recommended mixing in a 'tiny' amount of cinnamon.<sup>91</sup> Voigtlander describes

<sup>88</sup>Johan G. Geringius, Norrköping, 13 May 1745, Johan Fjellström, Karlskrona, 17 Oct. 1745, Johan Rothman, Växjö, 24 May, 1745, all to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>89</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>90</sup>Nils Rosén von Rosenstein and Carl Linnaeus, Uppsala, 11 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>91</sup>Peter P. Platin, Jönköping, 11 July 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

likewise how he parboiled broad beans (*bondbönor*) ‘lightly’, after which he let them dry ‘well’ until they were hard again, then ‘burned them moderately (*lagom*)’, like other coffee beans’. Once ground he mixed 3 *lod* (e.g. 3 x 13.28 gram) of the coffee substitute with 1 *stop* (1.3 litre) of water and boiled it, producing a ‘clear’ coffee.<sup>92</sup>

To sum up, the variety of similar-sized local produce which could be easily processed like coffee beans, a process that took place in the kitchen, and which crucially involved roasting, suggests that the agricultural context and self-sufficiency of households were central contexts for the uptake of coffee substitutions, and for the development of cosmopolitan sensibilities among the rural population.

### Psychoactive sensations and taste

Finally, then, what did the substitutes taste like? And what about their perceived effects on the body? Beginning with the last question, we must first recognize that Collegium medicum’s correspondents referred to coffee and tea as potent medicines that could have detrimental as well as beneficial effects. As Linnaeus puts it in his *Almanac* article on coffee in 1747: ‘No plant is so harmful that it cannot be used as a good medicine’, an argument that was common among physicians in early modern Europe.<sup>93</sup> Here and in the text on tea from the previous year’s *Almanac* he acknowledges that both beverages could be used to good effect, such as taking the edge off hangovers and reducing bloatedness.<sup>94</sup> In addition, tea could dampen fevers and combat diseases that ‘tensed the fibres in the body’, while coffee worked against headaches, obesity, and worms; it was also a means by which to ‘wake up’, and it ‘provoked mirth’ in those ‘who have good food but no work’.<sup>95</sup> However, taken in too large quantities both beverages gave rise to sleeplessness, trembling limbs, impotence, hysteria, anxiety, burping etc.; symptoms that were part and parcel of the critical discourse surrounding coffee as well as tea in the early modern period.<sup>96</sup>

It was not only by the men of medicine that the side effects of the new beverages were discussed. The Frugality Commission also warned of the ‘ailments’ resulting from the over-consumption of the new beverages as one of the (admittedly several) reasons for why the state should steer its subjects away from them.<sup>97</sup> The latter discussion is likely to have formed an important backdrop to why the Commission turned to Collegium medicum in requesting it to find substitutes that could ‘conserve the health’ of the people.<sup>98</sup> The association between what we might call the psychoactive effects of caffeine and ill health, as well as the remit to find healthy alternatives, do probably explain why most of Collegium medicum’s correspondents refrained from discussing the extent to which their substitutes could affect the body in a similar way to imported coffee and tea. One exception is Hesselius, who, when discussing Pauli’s *Thea europaeum*, refers both to the latter’s statement that this European tea had a ‘power’ similar to tea from China and to his own (i.e. Hesselius’s) experiments making tea from the plant, also then detecting its ‘power’.<sup>99</sup> However, it is noteworthy that the psychoactive effect is highlighted as part of a taxonomic argument, rather than – or at least not only as – an argument in favour of a certain substitute.<sup>100</sup>

<sup>92</sup>Gustaf F. Voigtlander, Gävle, 14 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>93</sup>Linnés *Almanacksuppsatser*, 140. On the European development see Taylor, ‘Coffee and the Body,’ 638.

<sup>94</sup>Linnés *Almanacksuppsatser*, 136, 140.

<sup>95</sup>Linnés *Almanacksuppsatser*, 136, 140.

<sup>96</sup>Linnés *Almanacksuppsatser*, 135, 139.

<sup>97</sup>Frugality Commission protocol of the meeting March 18, 1745, ÄK814, RA.

<sup>98</sup>Frugality Commission/Royal letter to CM, Registratur, 21 April 1745, B1 6, CMA, RA.

<sup>99</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>100</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA. Note that Hesselius is also arguing that his tea candidate did not have an intoxicating effect (he uses the word ‘inebriandi’), a point that was probably aimed at strengthening the argument that *Thea europaeum* was different from *Myrica gale*, or Bot-myrtle (*Pors*) in Sweden, which was also used as a substitute for hops, and which was rumoured to have intoxicating effects.

Hesselius's tea stands out in another respect, too: it was to be consumed with sugar just like 'other tea', which would give it a 'pleasant' taste. Sugar (or honey)-induced sweetness is otherwise notably absent from the discourse, something which needs further investigation but which coincides with the comparably low imports of sugar into Sweden in the eighteenth century.<sup>101</sup> Only by the second third of the nineteenth century did sugar imports reach a level that suggests 'mass-consumption'.<sup>102</sup>

Regarding the question of taste; as the Frugality Commission indirectly acknowledged when they turned to Collegium medicum and the community it represented, the Collegium correspondents were not only experts in medicine and botany, but also comprised a group who knew taste. What they were delegated to do was to identify substitutes that would 'please the taste of the voluptuous', phrasing that suggests two definitions of taste, much in line with current studies of the multiple meaning of the term in the eighteenth century.<sup>103</sup> One typically refers to a form of politeness, a reflection of cultivation, education, or cosmopolitan experience; the other refers to taste in the gustatory sense of the word. The latter, together with scent, was often ranked below sight, hearing, and touch in scholarly explorations of the world, something which might help us interpret the somewhat limited vocabulary used in evaluating the taste of substitution, a question to which I return below.<sup>104</sup>

Both meanings of the word taste can be detected in the material. Examples of the first instance are when Collegium medicum's correspondents distinguish between on one hand those with 'delicate taste',<sup>105</sup> or 'delicate pruriency',<sup>106</sup> 'the voluptuous' ('*läckergom*' or '*läcker*'),<sup>107</sup> the 'lovers' of e.g. coffee,<sup>108</sup> or 'good Coffee knowers';<sup>109</sup> and on the other side their opposites, those with 'less delicious and delicate taste'.<sup>110</sup> Reading between the lines it is clear that the correspondents thought that habits educated the palate of the consumer. But even those with experience could be fooled. No fewer than five of Collegium medicum's correspondents refer to such situations.<sup>111</sup> Kalmeter, for example, writes:

Roasted peas are often drunk for coffee, Swedish and Turkish beans, wheat, barley, and the like. Rye comes a lot closer to coffee in taste and is often liked by coffee lovers when they drink it unaware but it is outright rejected if you tell them it is made from burned rye.<sup>112</sup>

Kalmeter's testimony is quite generic, and it might be read as a trope, a critique of what Hesselius called 'imagined taste'.<sup>113</sup> However, evidence based on personal experience is also offered. Johan Rothman, provincial physician and lecturer at the local gymnasium in Växjö (where he had taught the young Linnaeus), claimed to have misled two 'good coffee connoisseurs'

<sup>101</sup>Only Retzius refers to sugar in relation to coffee and tea drinking (Nils Retzius, Lund, 23 Oct. 1745, to CM, in IHAS, 1741–50, E2:7, RA), while sugar is mentioned in chocolate recipes in three instances: Jacob Boethius, Göteborg, to CM, 13 Nov. 1745, Johannes Phil, Visby, 12 July 1745, and Nils Retzius, Lund 23 Oct. 1745, to CM, in IHAS, 1741–50, E2:7, RA; Rönnbäck, 'An Early Modern Consumer Revolution', 183.

<sup>102</sup>Rönnbäck, 'An Early Modern Consumer Revolution', 184.

<sup>103</sup>Frugality Commission/Royal letter to CM, Registratur, 21 April 1745, B1 6, CMA, RA.

<sup>104</sup>Beatrijs Vanacker and Lieke van Deinsen. 'Taste and Smell in the (Long) Eighteenth Century', *De Achttiende Eeuw* 48, no. 1 (2017): 3–12.

<sup>105</sup>Johannes Phil, Visby, 12 July 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>106</sup>Johan Fjellström, Karlskrona, 17 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>107</sup>Gustaf F. Voigtlander, Gävle, 14 Oct. 1745, Gustaf Zimmerman, 13 Oct. 1745, Skagersholm both to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>108</sup>Johannes Phil, Visby, 12 July 1745; Olof Kalmeter, Falun, 21 Nov. 1745, both to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>109</sup>Johan Fjellström, Karlskrona, 17 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>110</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA. See also Phil, who writes about a 'less delicate taste.' Johannes Phil, Visby, 12 July 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>111</sup>Johan Fjellström, Karlskrona, 17 Oct. 1745, Olof Kalmeter, Falun, 21 Nov. 1745, both to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>112</sup>Olof Kalmeter, Falun, 21 Nov. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>113</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

by serving them substitute coffee.<sup>114</sup> Fjellström even acknowledged that he had wrongly assumed he had been served second-rate (but genuine) coffee, while in fact it was a substitute.<sup>115</sup> It is worth pointing out that in none of the five cases do the correspondents refer to the psychoactive reaction, or lack thereof, in their description of responses to the consumption of substitute coffee. Fooled or not, what is clear is that it was the taste of Collegium medicum's correspondents that formed the benchmark, or, as Gustaf Zimmerman, the provincial physician in Skaraborgs län in western Sweden, put it as he concluded his long list of tea substitute teas he had tried out: 'All these I have tried [out] and with regards to my taste [been] pleased with.'<sup>116</sup>

Taste is also referred to as the second sense, and in relation to the substitutes; here the imported goods form the benchmark. The taste of the substitutes is sometimes referred to as 'almost like',<sup>117</sup> or it can 'pass for',<sup>118</sup> be not 'indifferent from',<sup>119</sup> or 'close to',<sup>120</sup> or simply 'like'.<sup>121</sup> Occasionally, a substitute is improved by adding ingredients; Kalmeter recommended blending flowers from clove pink (*Dianthus caryophyllus*, [?], and daisy (*Bellis perennis*) to give the tea a 'high delectable' taste.<sup>122</sup> This was, however, an exception: Collegium medicum's correspondents did not generally 'compose' taste and scent impressions; they were not inventive in this respect. Also, they used adjectives in a sparse and general manner when evaluating the results of their experiments with their own or others' recipes. Most common are more nondescript words such as 'pleasant' ('*behaglig*') and 'enjoyable' ('*angenäm*'); all in all, twenty terms are used for evaluating.<sup>123</sup> What this means is hard to tell; different fields of early modern scholarship had a more or less developed vocabulary for distinguishing tastes and scents.<sup>124</sup> While Collegium medicum's correspondents were medical experts, and while they thought about themselves as being in possession of taste (as a reflection of their cultivation), they were not equipped to evaluate taste in the same sense as a broker, wholesaler, or retailer of exotic goods.

So what conclusions can we draw about the cosmopolitan sensibilities among the rural population at large? Outside the realms of medicine and of elite consumers who could afford to expose themselves to the perceived risk of consuming too much tea or coffee (and thus perhaps familiarizing themselves with the psychoactive and physical side effects to a greater extent), we might tentatively conclude that much could pass as coffee (in particular) in early modern Sweden. And we can say that, consequently, there was little consensus about how it ought to taste; it did not even need to be sweet. Perhaps what mattered most was that drinks were amber or brown and hot?

<sup>114</sup>Johan Rothman, Växjö, 24 May, 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>115</sup>Johan Fjellström, Karlskrona, 17 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>116</sup>Gustaf Zimmerman, Skagersholm, 13 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>117</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, RA.

<sup>118</sup>Johan Hesselius, Örebro, 20 May 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>119</sup>Olof Kalmeter, Falun, 21 Nov. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>120</sup>Olof Kalmeter, Falun, 21 Nov. 1745; Nils Rosén von Rosenstein and Carl Linnaeus, Uppsala, 11 Oct. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>121</sup>Johannes Phil, Visby, 12 July 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>122</sup>Olof Kalmeter, Falun, 21 Nov. 1745, to CM, IHAS, 1741–50, E2:7, CMA, RA.

<sup>123</sup>The other words used are: 'palatable' ('*välsmakande*'); 'delicious' ('*läcker*'); 'nice' ('*god*'); 'best' ('*bäst*'); 'beautiful' ('*skön*'); 'delightful' ('*ljuvlig*'); 'delicat' ('*delikat*'); 'alive' ('*levfande*'); 'pungent' ('*bäsk*'); 'astringent' ('*astringent*'); 'harsh' ('*sträv*'); 'bitter' ('*bitter*'); 'styptic' ('*stiptica*'); 'unpleasant' ('*obehaglig*'); 'disgusting' ('*vidrig*'); 'rank' ('*frän*'); and 'grassy' ('*gräsaktig*').

<sup>124</sup>Armelle Cornu, *Enlightening Water: Science, Market & Regulation of Mineral Waters in Eighteenth-Century France* (Uppsala: Acta Universitatis Upsaliensis, 2022), 298–302. However, it is noteworthy that the wholesale market for e.g. Chinese tea did not develop a distinct and varied vocabulary for determining the taste and scent of different batches of tea. This might, however, be a reflection on the very high level of standardization of tea (compared to many other types of early modern goods) and the existence of staple markets and systems of tea brokers operating on them. See H. Hodacs and L. Müller, 'Chests, Tubs and Lots of Tea: The European Market for Chinese Tea and the Swedish East India Company, c. 1730–1760', in *Goods from the East, 1600–1800: Trading Eurasia*, ed., M. Berg, F. Gottmann, H. Hodacs, and C. Nierstraz (Basingstoke: Palgrave Macmillan, 2015), 280–1; Hodacs, *Silk and Tea*, 75–9.

## Conclusion

Substitutes can, then, offer us a way to think about what properties are most important in the goods that are being copied. In this article I have investigated substitutions for coffee and tea with the aim of identifying what mattered most to early modern consumers in Sweden, while setting out a different and distinctly local version of the traditional story of globalization to show how it impacted consumption and production.

At the centre of this story is the material history of coffee and tea, extracted from the letters of provincial and city physicians and university professors of medicine which contain suggestions for substitutes as well as observations on already established ways of imitating the new exotic goods. The sources provide insights into how, arguably, a majority of Europe's rural population perceived tea and coffee in the eighteenth century: as leaves, roasted and rolled, and as beans that needed to be roasted and ground before they were infused or boiled. While the physicians and medical experts drew on medicine, botany, and physio-theology in their theoretical understanding of substitutes, they, like the people, very likely women, from whom they learned about existing substitute recipes, predominantly read the local landscape and household larder with new eyes. Using existing kitchen equipment – pots, sticks, grinders, towels, tins, and rolling pins – they created replicas that looked like the real deal. The visual aspect of the materiality of coffee and tea was thus important, at every stage of processing. Taste was important too, although the variety of substitutes used suggests great variation. Sugar-induced sweetness does not seem to have been a significant part of the experience, and while attention was paid to the stimulating effects of the original drink among physicians and professors, the lack thereof in the substitutes seems to have been less imperative.

The local, praxis-focused perspectives on the end of a global process offered here are important not only because they provide an untold version of a familiar history that has hitherto been dominated by coffee houses, porcelain cups, and pots in metropolitan and elite settings but also because the material history of coffee, tea, and their substitutes suggests new ways of thinking about how the consumption of exotic hot drinks evolved. The case of how the word 'tea' became the common term to describe infusions in eighteenth-century husbandry books needs further investigation, and suggests that we should consider the legacy of medicine in the continued consumption of herbal infusions, or, as they are called in Sweden, 'herbal teas' (*örtteer*). Ample evidence, in the form of small prints, cookbooks, and recipes from the second half of the eighteenth century and onwards, proves that Collegium medicum was wrong to write off coffee substitutes made from the very same raw materials suggested by their correspondents and informers.<sup>125</sup> By itself, or probably increasingly as a means to eke out meagre supplies of exotic coffee, the use of grains, breadcrumbs, and peas was there to stay. This begs the question: to what extent did coffee substitutes underpin the global history of nineteenth- and even early twentieth-century coffee consumption, which evolved in response to the great expansion of coffee production in Latin America, foremost Brazil?

We can think about the early modern rural Swedish household as relatively isolated from capitalism, or more specifically the merging global value chains carrying exotic goods from the Atlantic world to rural northern Europe, and so the idea of tea and coffee, and notions of cosmopolitan sensibilities, circulated more than the goods themselves. Moreover, it was the economic model of self-sustainability that dictated these households' responses to the new 'alien' goods. Or, more concretely, it was what the local ecology allowed, and what could be harvested or foraged, that framed their imitation of exotic produce. Self-sustainability, not scalability and profitability, also dictated the production and processing of substitutes among consumers who were not customers. In this respect the early modern Swedish household's proxy commodity indigenization represents a near dead end to the first versions of the global value chain. From the point of view of the following decades and into the next century, however, we can see the act of substituting as a

<sup>125</sup>H. Hodacs, 'Coffee and Coffee Surrogates in Sweden: A Local, Global, and Material History', in *Locating the Global: Spaces, Networks and Interactions from the Seventeenth to the Twentieth Century*, ed. H. Weiss (Berlin, Boston: De Gruyter Oldenbourg, 2020), 73–94.

‘pericapitalist’ activity – to borrow another term from Tsing – taking form.<sup>126</sup> The roasting, grinding, cooking, and drinking of coffee substitutes, and the scents, sensations, and habits it gave rise to, could over time be harnessed by the global value chains, which by the nineteenth century brought an ever-greater quantity of coffee beans to Sweden from places like Brazil, where slave-labour coffee production was ramped up to unprecedented levels. Replacing the raw materials with imported goods, the habits and procedures that were already in place in rural Swedish households were ready to be ‘salvaged’. In order to make sense of this globalization process we need to consider other geographies *and* timeframes than those which usually frame the histories of coffee and tea distribution across the world. More specifically, we need to link rural European households to Latin American plantations using a chronology that bridges the early modern and the modern period.

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<sup>126</sup>Tsing, *The Mushroom at the End of the World*, 63.