



MARITIME CROSSROADS: THE KNOWLEDGE PURSUITS OF MARÍA DE BETANCOURT (TENERIFE, 1758–1824) AND JOANA DE VIGO (MENORCA, 1779–1855)

by

MÓNICA BOLUFER^{1,*} AND ELENA SERRANO^{2,†}

¹*Departament d'Història Moderna i Contemporània, Facultat de Geografia i Història—Universitat de València, Avda. Blasco Ibáñez, 28, 46010 València, Spain*

²*Institut Universitari d'Estudis de les Dones—Universitat de València, C/ Serpis, 29, 46022 València, Spain*

This article explores the biographies of two gentlewomen, María de Betancourt (1758–1824) and Joana de Vigo (1779–1855), who lived respectively in Tenerife and Menorca, two crucial nodes in the scientific, commercial and military global networks of the late eighteenth century. Some of their scientific and literary contributions are mapped, paying particular attention to how they became active in contemporaneous learned networks. It is argued that the peculiar, intellectually rich microcosms of the islands shaped these women's lives in ways that enabled them to enter learned circles, either real or imaginary, and from a very modest site to contribute to the global circulation of ideas, goods and peoples.

Keywords: patriotic societies, paper networks, note-taking, popularization, translation

INTRODUCTION

During the eighteenth century, the Canary Islands in the Atlantic and the Balearic Islands in the Mediterranean were two important nodes in the global maritime networks. The Canary Islands were a stopover for merchants *en route* to the Americas, for slave traders bound to Africa and for transoceanic expeditions in transit to the Pacific. Between the years 1770 and 1830 alone, 30 scientific expeditions docked in their ports, including those commanded by William Bligh, Alessandro Malaspina and Nicolas Baudin.¹ The mighty volcano Teide attracted adventurers

*monica.bolufer@uv.es

†elen.serrano@uv.es

¹ Alberto Relancio Menéndez, 'Rumbo a Canarias: Viajes y exploraciones de naturalistas y científicos europeos', in *El descubrimiento científico de las Islas Canarias* (ed. José M. Oliver and Alberto Relancio), pp. 15–36 (Fundación Canaria Orotava de Historia de la Ciencia, La Orotava, Santa Cruz de Tenerife, 2007); José Montesinos and Jürgen Renn, 'Expediciones científicas a las Islas Canarias en el periodo Romántico (1770–1830)', in *Ciencia y Romanticismo* (ed. J. Montesinos, J. Ordóñez and S. Toledo),

keen to reach its peak and European scholars explored the islands' subtropical volcanic environment, took astronomic measurements, and studied the costumes of the first inhabitants, the Guanches.² Beyond the islands' scientific interest, its sweet wine, called *malvasia*, attracted Irish, Flemish and German communities of dealers; and foreign forces (notoriously, British troops commanded by Horatio Nelson in 1797) fought over the islands' advantageous Atlantic position.³ In the Balearic Archipelago, the small, flat island of Menorca was also well known among navigators for having the best Mediterranean natural port in Maó, and English, French and German readers came to know it through several civil and natural histories published between 1750 and 1820.⁴ Because of the exceptional strategic position of the island, three naval powers vied with each other for its control: from 1708 to 1802 Menorca was mostly under British rule, and it was also temporarily under French (1756–1762) and Spanish rule (1782–1798, and from 1802). That circumstance stimulated commerce and agriculture and left a considerable mark on local habits and customs (architecture, language, literary tastes). It also intensified connections to the European Enlightenment through an important flow of foreign books without the inquisitorial control that was in place in the territories of the Spanish empire. Thus, the Enlightenment on these two islands had characteristics of the Spanish Enlightenment (especially its Catholic imprint and its markedly pragmatic dimension, linked to economic, political and social reform and the needs of the Spanish empire) and particular local traits favoured by their specific geopolitical circumstances.⁵

In this essay, we ask to what extent living in these bustling microcosms shaped the intellectual lives of women. Specifically, we ask how growing up in these scientific, political and commercial nodes might have opened wider intellectual possibilities to well-off women and allowed them to join learned networks, either real (via face-to-face conversations or epistolary correspondence) or imaginary (by establishing symbolic connections with authors and scholars that they read but never met). To do so, we will explore the lives of two women who are nowadays local celebrities but almost unknown outside their islands. In both cases, sources are patchy; there is but limited evidence about their intellectual pursuits, covering only scattered periods of their lives. This makes it impossible to trace the trajectories of these women's lives in full, while nevertheless allowing us to illuminate some important aspects through what we may call, according to new approaches to life-writing, 'biographical glimpses': better-documented episodes that

pp. 329–353 (Fundación Canaria Orotava de Historia de la Ciencia, Orotava, 2002); Alfredo Herrera Piqué, *Las Islas Canarias, escala científica en el Atlántico: viajeros y naturalistas en el siglo XVIII* (Editorial Rueda, Madrid, 1987).

2 As early as 1667, scientific accounts were published in the *Philosophical Transactions of the Royal Society*: Robert Hooke, 'An account of a Journey made to the highest part of the Earth by my ingenious Friend Mr. Gt' (1679). Quoted in Menéndez, *op. cit.* (note 1), pp. 17–18. See Marcos Sarmiento Pérez, *Las Islas Canarias en los textos alemanes: (1494–1865)* (Anroart Ed., Las Palmas de Gran Canaria, 2005); Isabel González Cruz, *Notas para una bibliografía inglesa sobre Canarias: primer repertorio bibliográfico y análisis de su estructura y contenido* (Instituto de Estudios Canarios, La Laguna, 2020); Berta Pico and Dolores Corbella (eds), *Viajeros franceses a las Islas Canarias: repertorio bio-bibliográfico y selección de textos* (Instituto de Estudios Canarios, Santa Cruz, 2000).

3 Alexis Brito González, *Los extranjeros en la Canarias Orientales en el siglo XVII* (Ediciones del Cabildo de Gran Canaria, Las Palmas de Gran Canaria, 2002); Manuel Vicente Hernández González, *La emigración Canaria a América 1765–1824* (Santa Cruz de Tenerife: Centro de la Cultura Popular Canaria, 1996).

4 Josefina Salord, 'La Menorca ilustrada: creación y proyección', *Dieciocho: Hisp. Enlightenment* 35, 168–197 (2012).

5 Jesús Astigarraga (ed.), *The Spanish Enlightenment revisited* (Voltaire Foundation, Oxford, 2015); Elizabeth Franklin Lewis, Mónica Bolufer Peruga and Catherine M. Jaffe (eds), *The Routledge companion to the Hispanic Enlightenment* (Routledge, Abingdon, 2020); Gabriel B. Piquerette, *Enlightenment, governance, and reform in Spain and its empire, 1759–1808* (Palgrave Macmillan, London, 2008).

cast light on their broader aspirations and strategies.⁶ María del Carmen de Betancourt y Molina (1758–1824) lived in the rich Puerto de la Cruz de La Orotava in the north of Tenerife. She was the sister of the most famous Spanish engineer of the time, Agustín de Betancourt (1758–1824).⁷ We are interested in showing how she participated in Enlightened agendas of improvement through her inventions for the textile industry, how she negotiated her space in the Real Sociedad Económica de Tenerife and how her achievements in turn served to increase her family's prestige. Our second case study is the gentlewoman Joana de Vigo i Esquella (1779–1855), who lived in Ciutadella in western Menorca and had family connections to Maó, and whose reading notes on Buffon and other authors, as well as her Catalan translations, reveal her intellectual curiosity, placing her amidst Enlightened 'paper networks' that built on and further expanded her family connections to local scholars and to the wider world of trade, empire and culture.

The contribution of this paper is thus twofold. On the one hand, it adds to recent historiography that focuses on how the scientific education of high-ranked girls became a deliberate family strategy for expanding and nurturing the family's networks of influence and consolidating its social prestige, political power and economic benefits. Examples include the mathematician Maria Gaetana Agnesi, whose merchant father aspired to nobility, and the natural philosopher Mariangela Ardinghelli, excellently educated to counterbalance her meagre dowry.⁸ In Italy, Spain and Portugal, aristocratic girls were promoted by their families to top public examinations in which they gained public visibility, and they were presented to learned societies as examples of excellence.⁹ Yet in the islands we are focusing on here, a good education seemed particularly important, as hosting and entertaining foreign guests was not only deeply rooted in the elites' social life but also a way to secure key ties abroad. In this sense, La Orotava, Maó and Ciutadella might have functioned similarly to

⁶ William E. Epstein (ed.), *Contesting the subject: essays in the postmodern theory and practice of biography and biographical criticism* (Purdue University Press, West Lafayette, 1991); Judith P. Zinsser, 'Feminist biography: a contradiction in terms?', *Eighteenth Cent.* **1**, 43–50 (2009); Jo Burr Margadant (ed.), *The new biography: performing femininity in nineteenth-century France* (University of California Press, Berkeley, 2000); Mónica Bolufer, 'Figuras veladas. Escribir una vida de mujer en el siglo XVIII', in Isabel Burdiel and Colin Davis (eds), *La historia biográfica en Europa: nuevas perspectivas* (Institución Fernando el Católico, Zaragoza, 2014), pp. 201–216.

⁷ Agustín was born and died in the same years as María.

⁸ Clarissa Campbell Orr, 'Aristocratic feminism, the learned governess, and the Republic of Letters', in *Women, gender and Enlightenment* (ed. Sara Knott and Barbara Taylor), pp. 306–325 (Palgrave Macmillan, Basingstoke, 2005); Paula Findlen, 'Women on the verge of science: aristocratic women and knowledge in early eighteenth-century Italy', in Knott and Taylor, *ibid.*, pp. 265–287; Anthony J. La Vopa, *The labor of the mind: intellect and gender in Enlightenment cultures* (University of Pennsylvania Press, Philadelphia, 2017); Massimo Mazzotti, *The world of Maria Gaetana Agnesi, mathematician of God* (Johns Hopkins University Press, Baltimore, 2007); Paola Bertucci, 'The in/visible woman: Mariangela Ardinghelli and the circulation of knowledge between Paris and Naples in the Eighteenth Century', *Isis* **104**, 226–249 (2013), at p. 231.

⁹ Marta Cavazza, 'Between modesty and spectacle: women and science in eighteenth-century Italy', in *Italy's eighteenth century: gender and culture in the age of the grand tour* (ed. Paula Findlen, Wendy Wassyng Roworth and Catherine M. Sama), pp. 275–302 (Stanford University Press, Stanford, 2009). Mónica Bolufer, 'New inflections of a long polemic: the debate over the sexes in Enlightenment Spain', in *A new history of Iberian feminisms* (ed. Silvia Bermúdez and Roberta Johnson), pp. 38–49 (University of Toronto Press, Toronto, 2018), and 'Galería de "mujeres ilustres", o el sinuoso camino de la excepción a la norma cotidiana (ss. XV–XVIII)', *Hispania* **LX/1**, 181–224 (2000); Raquel Bello Vázquez, 'Elite female authors in the field of power in eighteenth-century Portugal: epistolary writing as part of a political strategy', *J. Eighteenth-Cent. Stud.* **39**, 251–266 (2016). Palmira Fontes da Costa, 'Gender and botany in early nineteenth-century Portugal: the circle of Leonor de Almeida, the Marquise of Alorna' in this issue. Mónica Bolufer, 'Desde la periferia: Mujeres y hombres de la ilustración en provincia', in *La Real Academia de Bellas Artes de San Carlos en la Valencia ilustrada* (ed. Romà de la Calle), pp. 67–100 (Universitat de València, Valencia, 2009) and 'Knowledge on display: Aristocratic sociability, female learning and Enlightenment pedagogies in eighteenth-century Italy and Spain', *Stud. Eighteenth-Cent. Cult.* (in press); Elena Serrano, *Ladies of honor and merit: gender, useful knowledge, and politics in Enlightened Spain* (University of Pittsburgh Press, Pittsburgh, 2022), pp. 83–103.

other busy port cities, such as Cádiz, Sevilla, Barcelona, Valparaíso, Manila and Naples: as privileged commercial, touristic and scientific sites, where women mediated between the foreign and the local, liaised between the male kin traveller and the family issues and provided commercial and scientific hospitality.¹⁰ However, in contrast to these port cities, both Menorca and Tenerife were far enough from the metropolis and other centres of power to themselves constitute 'hybrid modes of (cultural) existence', as Lissa Roberts put it, and to permit a broader range of opportunities for both entrepreneurs and women.¹¹ Moreover, although we cannot assimilate these locations to colonial enclaves in which the differences between cultures or ethnic groups were sharp, traders and explorers nevertheless crucially depended on the islanders for their knowledge pursuits, business and everyday needs—especially in the case of Tenerife, as it was the first subtropical natural environment that Europeans encountered. The local elites were usually their first contact in these unfamiliar settings and the gentlewomen were an active part of these multicultural interchanges.

The second contribution of this essay is, then, to add to the repertoire of women's strategies for steering successfully amidst male learned circles in these sites of cultural interchanges.¹² Paola Bertucci has shown, for instance, how Ardinghelli worked from Naples to manage 'lawyers of selective visibility', which allowed her to be credited by the savants of the Paris Academy of Sciences while protecting herself from mockery for being a '*femme savante*'.¹³ Caroline Herschel, the well-known British astronomer, needed to learn not only scientific practices, but also the rules for presenting herself in ways to avoid being ridiculed.¹⁴ In our essay, we examine women in pursuit of what was called 'useful knowledge' for improvement of the local economy, and women building personal and imaginary bridges with the wider world of science and erudition. Our work shows how women negotiated the fluid boundaries between being intellectually modest but not ignorant, between being useful but not boasting about it, and between entering male scientific networks while pretending to remain on the fringes—or to use the island as a metaphor, while being in the centre *as well as* in the periphery.

CONNECTING WORLDS: MARÍA DE BETANCOURT

On 30 June 1778, the 20-year-old María del Carmen Betancourt y Molina sent to the newly inaugurated Real Sociedad Económica de Tenerife de Amigos del País a machine to twist

¹⁰ Elizabeth Yale, 'A letter is a paper house: home, family, and natural knowledge', in *Working with paper: gendered practices in the history of knowledge* (ed. Carla Bittel, Elaine Leong and Christine von Oertzen), pp. 145–159 (University of Pittsburgh Press, Pittsburgh, 2019); and Loïc Charles and Christine Théré, 'Les femmes économistes: the place of women in the physiocratic community' in this issue. See also Paloma Fernández Pérez, *El rostro familiar de la metrópoli: redes de parentesco y lazos mercantiles en Cádiz, 1700–1812* (Siglo XXI de España, Madrid, 1997); Marta Vicente, *Clothing the Spanish Empire: families and calico trade in the early modern Atlantic world* (Palgrave Macmillan, New York, 2006); and Melissa Calaresu and Helen Hills (eds), *New approaches to Naples, c. 1500–1800: the power of place* (Ashgate, Aldershot, 2013).

¹¹ Lissa Roberts, 'Situating science in global history: local exchanges and networks of circulation', *Itinerario* **33**, 9–30 (2009), at p. 22.

¹² Sarah Hutton, 'The *persona* of the woman philosopher in eighteenth-century England: Catharine Macaulay, Mary Hays, and Elizabeth Hamilton', *Intellect. Hist. Rev.* **18**, 403–412 (2008); Paula Findlen, 'Becoming a scientist: gender and knowledge in eighteenth-century Italy', *Sci. Context* **16**, 59–87 (2003); Paula Findlen, 'Science as a career in Enlightened Italy: the strategies of Laura Bassi', *Isis* **84**, 441–469 (1993).

¹³ Paola Bertucci, *op. cit.* (note 8), p. 228; Paula Findlen, 'The scientist's body: the nature of a woman philosopher in Enlightenment Italy', in *The faces of nature in Enlightenment Europe* (ed. Gianna Pomata and Lorraine Daston), pp. 211–236 (Berliner Wissenschafts-Verlag, Berlin, 2003).

¹⁴ Emily Winterburn, 'Caroline Herschel: agency and self-presentation', *Notes Rec. R. Soc. Lond.* **69**, 69–83 (2015).

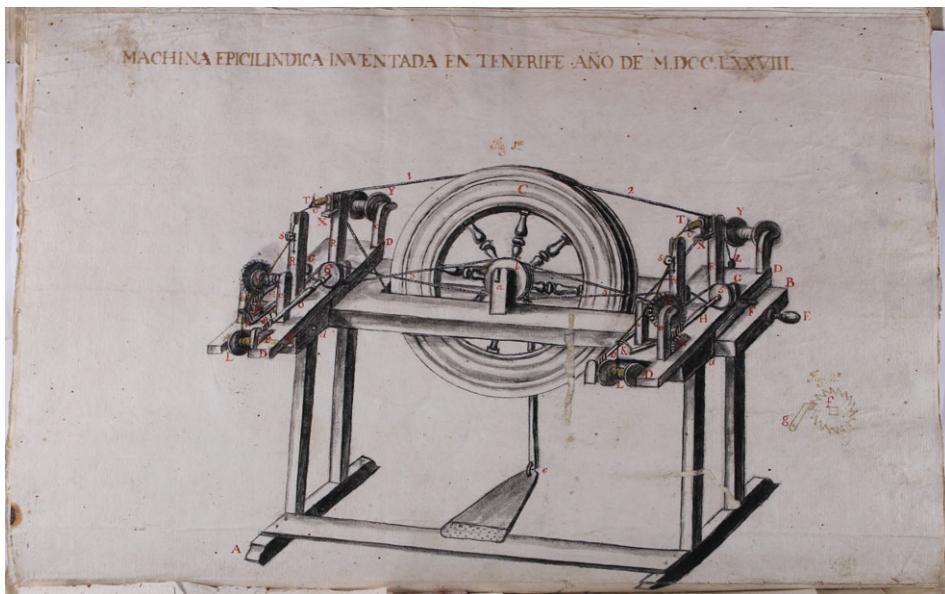


Figure 1. Diagram of the silk-twisting machine presented to the Economic Society of Tenerife in 1778 by María de Betancourt. *Libro de Industrias* (ff. 115r–115v, 116r–117v), RS 3 (3/22). Archive of the Real Sociedad Económica de Amigos del País de Tenerife (RSET). (Online version in colour.)

(*entorchar*) silk at high speed (figure 1).¹⁵ This twisting machine fitted in well with the society's aims to revive the local silk industry, once a flourishing activity in the north of the island that had now almost been abandoned. Tenerife at the time faced a precarious economic situation. The English and the Portuguese had begun to make sweet wines elsewhere, principally in Madeira, and heavy male emigration combined with wars and military attacks had reduced the male population, damaging local agriculture and other local industries. Nonetheless, the members of the economic society looked to the future with optimism. Like other such societies, the one in Tenerife was created in response to the pleas of the government, which urged the enlightened elites to invest time and resources in the modernization of their towns.¹⁶ The enthusiastic members called themselves friends of the country and improvers and were convinced that scientific knowledge, rational empiricism and popular education could bring prosperity.¹⁷ The father and elder brothers of María, Agustín and José, belonged to this handful of keen improvers. Like many other economic societies, the Sociedad Económica de Tenerife emerged from

¹⁵ Letter of María de Betancourt y Molina to the marquis de la Villa de San Andrés, 30 June 1778. *Libro de Industrias* (ff. 113r–114r), RS 3 (3/22), Archivo de Real Sociedad Económica de Tenerife (cited hereafter as RSET). Calle San Agustín, 23, 38201 San Cristóbal de La Laguna, Tenerife.

¹⁶ Jesús Astigarraga, 'Connecting with European political economy in Spain', in Lewis *et al.* (note 5), pp. 99–111.

¹⁷ Koen Stapelbroek and Jani Marjanen (eds), *The rise of economic societies in the eighteenth century: patriotic reform in Europe and North America* (Palgrave Macmillan, Basingstoke, 2012); Loïc Charles, Frédéric Lefèvre and Christine Théré (eds), *Le cercle de Vincent de Gournay: savoirs économiques et pratiques administratives en France au milieu du XVIIIe siècle* (INED, Paris, 2011); Elena Serrano, 'Making oeconomic people: the Spanish *Magazine of agriculture and arts for parish rectors* (1797–1808)', *Hist. Technol.* 30, 149–176 (2014).

informal meetings of selected aristocrats and clerics, in this case, from the so-called *tertulia* de Nava in the palace of the marquis of Villanueva del Prado in La Laguna.¹⁸ María's father, the colonel Agustín de Betancourt y Castro, attended this *tertulia* regularly and was later one of the founders of the society.

Needless to say, María did not belong to the society. Although there had been some proposals to include women as regular members (for example, the Madrid Economic Society debated the issue shortly after its creation in 1775), the economic societies at this time were exclusively male. Yet there was some scope for women to participate. Some admitted women as honorary members on an exceptional basis, and women could always send their contributions to show their patriotic endeavours. In fact, the Tenerife society was already aware of the textile skills of María, as a few months earlier the director and friend of the Betancourts, the marquis de la Villa de San Andrés, had brought several pieces of velvet ribbons that María had woven, which were highly praised and considered a serious attempt to introduce the technique to the island.

Now, in the letter that accompanied the twisting machine, María carefully crafted the feminine way of being a friend of the country so as not to cross established gender boundaries. To counter any suggestion of vanity or lucrative interest, she referred to her previous trials with velvet as her father's initiative. It was 'her father and her teacher' who urged her; it was a pastime 'proper to her age and state', 'fun and useful'. María also explained how she understood the feminine way of working for the fatherland: 'being a woman is no impediment to creating and procuring the usefulness and benefit of the fatherland'.¹⁹ Explicitly distancing herself from men, she was happy to contribute 'modestly' to increase the national wealth with her 'ribbons, bangs, and tassels'. María also used the well-known argument that if these ornaments were manufactured locally instead of imported, the state would save a lot of money. In the same vein of distinguishing the social and political roles of women and men, María distanced herself from the material design of the machine. She clearly stated that it was her brother Agustín who built it, but stressed that it was at her behest: 'I convinced my brother Agustín to invent it for my use'.²⁰ (Agustín was already a local celebrity thanks to his talent in mathematics and was about to leave for Madrid to study in a prestigious school with a government scholarship.)

Of course, the question then becomes why it was not Agustín himself who presented the machine to the society. Certainly, the Betancourts might have thought it more convincing to show what the machine was capable of producing, so María sent samples of laces, noting the time she saved in making each one, the amount of silk used and the profits they would produce if they were sold (figure 2). She also sent samples woven by some of her disciples, as she called them (figure 3).²¹ Thus, she showed, first, that the machine was easy to operate and, second, that she was an enlightened woman who beneficially influenced other women. By giving voice to María, the whole family was presented as an enlightened family, in which each of its members fulfilled an exemplary role according to their sex.

18 Enrique Romeu Palazuelos, *La tertulia de Nava* (Excmo. Ayuntamiento, La Laguna, 1977); José de Viera y Clavijo, *Memorias* (Idea, Santa Cruz de Tenerife, 2012), pp. 58–59.

19 Letter of María de Betancourt y Molina, 30 June 1778: 'El ser mujer no es estorbo para que se cree y se procure la utilidad y beneficio de la patria', *op. cit.* (note 15).

20 Letter of María de Betancourt y Molina, 30 June 1778: 'En ella tengo yo la mayor parte de haber movido a mi hermano D. Agustín para que la discurriese para mi uso', *op. cit.* (note 15).

21 Samples of textiles made by María de Betancourt y Castro: 'Muestras de tejidos de seda, elaborados por María de Bethencourt y Castro. [S. L.], 1778', Libro de Industrias (ff. 118r–123r), RS 3(3/22), RSET.



Figure 2. Samples of textiles made by María de Betancourt with the twisting machine, which demonstrated both her skilfulness and the advantages of the machine. *Libro de Industrias* (f. 118A125), RS 3 (3/22). RSET. The samples were glued to the notebook of the society, thus giving visibility to María's enterprises among the improvers' circles. (Online version in colour.)



Figure 3. Samples of textiles made by the 'disciples' of María de Betancourt, as she called them. *Libro de Industrias* (f. 126a130), RS 3 (3/22). RSET. (Online version in colour.)

However, despite María's neat separation between male and female intellectual and practical spheres, we know that this was not the case, and that in fact the Betancourt children benefited together from the exciting scientific environment of the island in their formative years.

A playful education

In the busy life of Tenerife, family, friends and foreign explorers played a key role in nurturing children's passion for empirical research.²² The Betancourt children were educated in the first instance at home—the colonel taught the boys mathematics and physics before they attended the local school and their mother taught all of them French. The colonel also used to take the boys with him to the aforementioned *tertulia* de Nava, and the enthusiasm of the group of improvers might have reached their sister María.

The youngsters also received lessons from family friends. For example, we know that the son of the marquis of Villanueva del Prado (who would later create the Botanical Garden in La Orotava), and of the same age as María and her brothers, recalled how his father's friends, particularly the marquis of San Andrés and José Viera y Clavijo (1731–1813) (who would author a celebrated natural history of the Canary Islands), used to 'form his reason' by means of brief educational stories.²³ It could have also been the case with the Betancourt children, as they all belonged to the same circle. The group also organized scientific excursions; for instance, Agustín joined the one organized by Viera y Clavijo to observe the

22 Carmen Fraga González, 'María Viera y Clavijo en el ambiente artístico de los ilustrados en Canarias', *El Museo Canario* XLVII, 319–333 (1987).

23 Manuel de Paz, 'Alonso de Nava-Grimón, VI Marqués de Villanueva del Prado: dos textos y un autorretrato en verso', https://www.academia.edu/19635179/alonso_de_nava_grimon_vi_marques_de_villanueva_del_prado_dos_textos_y_un_autorretrato_en_verso (accessed 2 March 2022).

transit of Venus in 1769. It is not unlikely that María also accompanied them.²⁴ At that time, Viera y Clavijo translated Charles Perrault's *Apologie des femmes*, which might be telling evidence about the atmosphere towards female education that prevailed in the colonel's circle.²⁵

The visits of foreign naturalists probably also fed the children's passion for empirical research and observation. Travellers used to be hosted by well-off families, which in turn introduced the visitors to their social circles. The newcomer naturalist, who might encounter for the first time a subtropical landscape in sharp contrast with European scenery, needed to exchange information with the local elites.²⁶ For instance, the famous botanist André Pierre Ledru (1761–1825), who lived in Tenerife between 1796 and 1797, became good friends with the enthusiastic botanist in the Puerto de la Cruz Bernardo Cólogo y Fallón and his friends, in particular with the brother of María, José. In the same manner, Alexander von Humboldt befriended the Betancourts in his strenuous six-day visit to Tenerife in 1807.²⁷ Although these are only two examples and occurred when María and her brothers were already grown-ups, they suggest ways in which the bustling scientific activity of Tenerife might have fostered the interest of the young María in experimenting with materials and contributing to the aims of the economic society.

In fact, the family correspondence casts light on how her empiric inclination might have emerged. In 1814, more than three thousand kilometres away from Tenerife, in St Petersburg where he worked for the czar, Agustín remembered the sweet times spent with María in the family house on the northern coast of Tenerife, La Rambla de Castro: 'How much I remember the silkworms we bred in the Rambla, and the ribbons we wove, and how much this entertainment has served me!'²⁸ Agustín was then a famous engineer, and a correspondent of the French Académie des sciences, who had produced countless designs, including a hot-air balloon, a version of Watt's steam engine, a method for making cannons and an optical telegraph; he had set up the Spanish school of engineers and a museum of machines in Madrid (Gabinete de Máquinas) that housed more than two hundred prototypes. Perhaps he was driven by nostalgia; perhaps it was a way of cheering up his sister, whom he had not seen since he left the islands more than 20 years earlier, but to whom he had not failed to write. Yet it could also be that he was sincere. A second letter, years later in 1821, supports this view. 'Of all I have learnt in my life', he writes, 'nothing has been more useful' than the tasks of 'spinning, weaving, dyeing and all the things that we did as pastime: all this knowledge that I acquired playing has been the origin of my passion for the mechanical arts and of all my happiness'.²⁹

²⁴ Agustín Álvarez Rixo, *Anales del Puerto de la Cruz de La Orotava (1701–1802)* (Patronato de Cultura, Ayuntamiento, 1994), p. 84.

²⁵ Viera y Clavijo, *Memorias*, 24. In this regard, see footnotes 23 and 24 of the editor.

²⁶ See, for instance, the essays in Simon Schaffer, Lissa Roberts, Kapil Raj and James Delbourgo (eds), *The brokered world: go-betweens and global intelligence, 1770–1820* (Science History Publications, Sagamore Beach, MA, 2009).

²⁷ Marcos Guimerá Pérez, 'Bernardo Cólogo y Fallón (1772–1814)', *Anuario de Estudios Atlánticos* 25, 307–355 (1979), at p. 311. See also J. G. Milbert, *Voyage pittoresque à l'Ile-de-France, au cap de Bonne-Espérance et à l'île de Ténériffe* (A. Nepveu, Paris, 1812), p. 83; Jacques Julien Houtou La Billardière, *Relation du voyage à la recherche de La Pérouse* (G. H. J. Jansen, Paris, an VIII).

²⁸ Letter of Agustín de Betancourt y Molina to José, 15 September 1814, Leg. 9370. Archivo Herederos Betancourt-Castro (cited hereafter as AHBC). Calle Hno. Apolinario 12, La Orotava. 38300 Tenerife. It is also transcribed in Juan Cullen Salazar, *La familia de Agustín de Betancourt y Molina: correspondencia íntima* (Domibari, Las Palmas de Gran Canaria, 2008), p. 203, Carta 31. The manor, which still exists and can be visited, was admired by all the foreign naturalists who saw it.

²⁹ Letter of Agustín de Betancourt y Molina to his family, 10 October 1821, Leg. 9406. AHBC. In Cullen Salazar, *La Familia de Agustín de Betancourt y Molina*, Carta 41, p. 255.

María still continued her activities with textiles after her brother Agustín left the island in 1778. The archives of the Economic Society of Tenerife hold two of her recipes for making dyes with local fruits and with cochineal.³⁰ She carefully observed how to obtain different tones by varying the exposure of the cloths, calculated exactly the amount of ingredients needed and discussed the problems of extrapolating from small to larger quantities. María's delicate silk embroidery samples, the sketch of the twisting machine she helped develop and her dye recipes were kept in the Economic Society's Industry notebook. In this way, she was able to leave her material imprint as a woman improver, not through essays and written reports, but through objects that corroborated her commitment to producing 'useful knowledge' from her status as a woman.

Yet, beyond the advantages that María's textile trials might have brought to herself, the silk-trade, the image of the Betancourt family or even to the future career of Agustín, they also served to strengthen the family bonds with the aristocratic female elites more than one thousand miles away, in the court of Madrid.

Weaving threads from a distance

The ties between the Canary Islands and the court were actively strengthened by a group of islanders living in Madrid, including civil servants, men of letters and employees in aristocratic houses, who helped to situate kin and friends in advantageous positions. For instance, the young clergyman Viera y Clavijo found his first job in Madrid as tutor of the son of the marquis of Santa Cruz thanks to Agustín Ricardo Madan, who was already employed there. Other influential islanders were José Clavijo y Fajardo (1726–1806), who would become a journalist, director of the Natural History Museum and translator of Buffon; the Iriarte brothers (Bernardo and Tomás, a diplomat and a famous playwright who both assiduously served the house of the duchess of Osuna), and Estanislao de Lugo y Molina, the future second husband of the influential countess of Montijo.

All these would become good friends of Agustín and José Betancourt, but notably the countess of Montijo played an important role publicly acknowledging María's contributions.³¹ In 1787, 10 years after the Betancourt brothers departed to Madrid, the Madrid Economic Society approved the setup of a female branch of the society, the Junta de Damas de Honor y Mérito (the Committee of Ladies of Honour and Merit). It was an elitist society, only joined by 29 women at the time and in which their membership was restricted to high-ranked women who could prove to be of service to the society, that is, who proved that they had enough knowledge to collaborate with the society's endeavours.³² The secretary was the countess of Montijo and its president the mighty duchess of Osuna. In one of the visits to the countess of Montijo, José Betancourt skilfully mentioned the silk trials in which his sister was involved. He would probably have found the idea of tightening the bonds with the female aristocratic circles of Madrid alluring. María was immediately admitted to the Junta, as the first member abroad, and José wrote

³⁰ Letter of María de Betancourt y Molina, 4 November 1779: 'Método económico para realizar tintes carmesíes finos. 4 de noviembre de 1779', Libro Industrias (ff. 157r–158r), RS 3(3/22), RSET.

³¹ Joaquín Álvarez Barrientos, *Viera y Clavijo, bajo el signo de la Ilustración* (Cabildo de Gran Canaria, Las Palmas de Gran Canaria, 2013). On this last point, see the letter of Agustín to his brother José, written 28 August 1793. Leg. 9537, AHBC, also in Cullen Salazar, *op. cit.* (note 28), Carta 16, p. 142.

³² Elena Serrano 'Chemistry in the city: the scientific role of female societies in late eighteenth-century Madrid', *Ambix* **60**, 139–159 (2013), and Serrano, *op. cit.* (note 9), pp. 17–37.

to the family with the good news. He jokingly added that it was not only María who should be proud, but that he himself had also been elected a member of the Basque Economic Society.³³ It could well be said that the Betancourt family had succeeded in fully entering the Enlightened networks of their time, male and female.

SMALL PLACES, WIDER WORLDS: JOANA DE VIGO

In his *History of Minorca*, John Armstrong, a British military engineer who arrived on the island in 1738, compares the ‘courtesy and politeness’ of people in Ciutadella with that of ancient Kentishmen, according to Caesar ‘the most civilized of all Britons’ because of their being ‘a maritime People, more conversant with foreigners than the rest of their Countrymen’.³⁴ He thus stresses the peculiarities of individuals who take advantage of opportunities brought by their particular locations to expand their mental and social horizons. Joana de Vigo i Esquella was one such individual: a woman who both literally and figuratively ‘conversed with foreigners’, engaging with the wider world from her own limited space. She was born in 1779 under the second British rule of Menorca, daughter to noble parents, Miquel Vigo Martorell and Joana Esquella Carreras. In 1804 she married Bernat Carreras, and she died in 1855; the palaces of both her lineages of birth and marriage today still grace the beautiful urban landscape of her home town, Ciutadella.³⁵ The recent discovery of her manuscripts has expanded, both geographically and sociologically, what was known about Enlightenment on the island. She is the first local woman whose intellectual activity can be traced, and a member of the lesser nobility in aristocratic and clerical Ciutadella, rather than belonging to the professional elites of Maó, capital of the British local government, home to most of the local intellectuals and foreign communities (British, French, Italian, Greek, Croatian) and point of arrival for visitors.³⁶

Joana’s documents, written in the local variety of Catalan, include letters by her or to her, mostly between 1838 and 1854, and nine manuscripts in her handwriting, among them three complete or partial versions of French works, some of them dated and some others not: *Ifigénie en Tauride*, a tragedy by Claude Guimond de la Touche (translation dated 1801), Fénelon’s pedagogic novel *Les aventures d’Aristonous*, and Claude Fleury’s *Catéchisme historique*, plus an unidentified religious text, *Examen general*. The rest are extracts or reading notes: on Buffon’s *Histoire naturelle* (undated), the *Abrégé de l’histoire générale des voyages* by Jean-François de La Harpe (notes dated 17 July 1805) and the *Histoire universelle depuis le commencement du monde jusqu’à présent*, a French version of an English original (6 April and 4 August 1804). Altogether, they encompass central concerns of the Enlightenment: civil, religious and natural history; travel; education; neoclassic aesthetics; and inner devotion opposed to fanaticism—all of them topics which were well represented in the works of local authors that were in some cases printed but often circulated in manuscript. The fact that these writings were kept with care by her

³³ Letter of José de Betancourt-Castro y Molina to his family, 25 September 1788. Legajo 9321 del AHBC. Also in Cullen Salazar, *op. cit.* (note 28), Carta 5, p. 87.

³⁴ John Armstrong, *The history of the island of Minorca* (C. Davies, London, 1752), letter IV, p. 64.

³⁵ Josefina Salord, ‘Joana de Vigo i Esquella, traductora d’*Ifigènia en Tàurida* de Claude Guimond de La Touche’, in Vicenç Albertí i el teatre entre la il·lustració i el romanticisme (Biblioteca Miquel dels Sants Oliver, Palma, 2013), pp. 113–147, at pp. 120–124.

³⁶ David Whamond Donaldson, ‘Britain and Menorca in the eighteenth century’ (PhD thesis, Open University, 1994).

descendants and that some are clean copies suggests that they might have circulated among her social circle, with the play perhaps intended for private staging. Those dated range from 1801 to 1805, shortly after her marriage, which has led to scholars supposing that the rest, undated, might have been written later in preparation for the task of educating her seven children, born between 1806 and 1819.

‘My spirit is too limited’ (‘el meu esperit és massa petit’), she wrote at the beginning of her notes on the *Histoire universelle* to justify her choice to start with Egyptian history instead of the creation, because ‘from the creation to the deluge, history is so full of authors who doubt about what they write ...’.³⁷ We can read her admission of her own limitations as the modesty statement conventionally displayed by female writers of that time when undertaking an intellectual activity that was deemed beyond their sphere.³⁸ But there is more to it: it seems also an implicit acknowledgement that it was too risky to deal with the biblical chronology of the Creation, under discussion after having been challenged by paleontological studies that pointed to much longer timeframes. She might have felt limited as a human being before God’s omniscience; probably, also confused as an amateur reader barred from the institutional sites of formal scholarship. While conscious of her own limitations, she also struggled to overcome them, using the resources she possessed to travel both geographically and back in time.

Navigating with books

Joana de Vigo’s translations reflect the great importance of translation in eighteenth-century cultural circulation, its remarkable flourishing in Menorca and its specific use by women as a respectable way to gain access to the Republic of Letters and its epistolary or imaginary paper networks.³⁹ Here we explore her reading notes—particularly those on Buffon’s *Histoire naturelle* and La Harpe’s *Abrégué*—in order to understand her interests, learning process and connections to the exterior and even exotic world.⁴⁰ They follow a similar pattern: short, separated from each other by a line, sometimes with a title in larger handwriting.⁴¹ In the case of the *Abrégué*, references to volume and page of the original work show that she worked with the first edition; in Buffon’s case, there are no such references, but it seems that she did not use any of the existing Spanish translations: a partial one (1773) by Alonso Ruiz de Piña of the *Histoire naturelle de l’Homme*, carefully edited to avoid Buffon’s discussion of the soul and of human reproduction; a fuller version (1785–1805) by the above-mentioned José Clavijo y Fajardo; or Pedro de Estala’s translation (1802–11) of René Ricard Caste’s abridged version, purged of ‘everything that might offend modesty’.⁴² She probably read instead the French 1796 edition in 41 volumes in her family library, not caring that it might ‘incite imagination among the passionate youth’ with

37 Arxiu Diocesà de Menorca (ADM), C-7 (12). Carrer Santíssim, 11. 07760 Ciutadella.

38 Cavazza, *op. cit.* (note 9).

39 Maria Paredes and Josefina Salord (eds), Joana de Vigo i Esquella, *Ifigènia a Tàurida* (Publicacions de l’Abadia de Montserrat—Universitat de les Illes Balears, Barcelona–Palma de Mallorca, 2019). Maria Paredes Baulida, ‘Traduccions i traductors a la Menorca il·lustrada’, in *La traducción en España (1750–1830)* (ed. Francisco Lafarga), pp. 79–89 (Edicions de la Universitat de Lleida, Lleida, 2001). Bertucci, *op. cit.* (note 8), and Mónica Bolufer, ‘Translation and intellectual reflection in the work of Spanish Enlightened women: Inés Joyes (1731–1808)’, in *Women writing back/writing back women* (ed. Anke Gilleir, Alicia C. Montoya and Suzan Van Dijk), pp. 327–346 (Brill, Leiden, 2010).

40 *Notas de Historia natural de Buffon*, ADM, C-7 (14); *Notas de la historia general de los Viatjes en breu*, ADM, C-7 (7), *op. cit.* (note 37).

41 Richard Yeo (ed.), ‘Note-taking in early modern Europe’, *Intellect. Hist. Rev.* 30 (special issue), 301–432 (2010).

42 Respectively, Alonso Ruiz de Piña, *Historia natural del Hombre* (Andrés Ortega, Madrid, 1773), 2 vols; José Clavijo y Fajardo, *Historia natural, general y particular* (Madrid, Joaquín Ibarra, 1786–1805), 21 vols; Pedro de Estala, *Compendio de la historia natural de Buffon* (Fermín de Villalpando, Madrid, 1802–1811), translator’s preface, p. 7.

‘such lubric topics as generation’, as Estala put it.⁴³ It is remarkable that Joana was allowed—or took the liberty—to peruse a full edition of Buffon, a work that was considered by many in France and Spain to be indecorous for ladies. In a Catholic context where moralists urged educators to supervise children’s readings, most strictly in the case of girls, this should be not taken for granted. It suggests that she was freer than many other Spanish women of her time to go through the volumes much to her own pleasure, ‘roaming the world unchaperoned through books’, as Dena Goodman wrote about French young gentlewomen of an earlier generation.⁴⁴

Joana de Vigo’s 20-page notes on the *Histoire naturelle* (figure 4) include remarks on mines, volcanos and caves, with short definitions of technical concepts added, and others about individuals prodigiously diverging from normal size or weight.⁴⁵ They offer a short tour of Europe and America, with geological and human curiosities spanning from Peru to Greece, from Sweden to Andalucía. Buffon’s work, which ran contrary to any *esprit de système* or rigid classification, must have spoken to Joana’s curiosity.⁴⁶ Unable to see nature’s dazzling variety displayed in street demonstrations, scientific exhibitions or private collections as she might have done in Paris, Venice, Madrid or Lima, she handpicked her own cabinet from Buffon, either (or both) for her enjoyment and instruction, for fashionable conversation or for future uses as mother and educator.⁴⁷

Her 32-page notes on the *Abrége de l’histoire générale des voyages*, an abridgement of Antoine-François Prevost’s extremely popular *Histoire générale des voyages* (1746–1789) by the journalist and playwright Jean-François de La Harpe (1739–1803), are named and organized thematically (not geographically as in the original) (figure 5).⁴⁸ They discuss vegetal, animal and more exceptionally geological or human curiosities, from banana trees and eels, elephants and river monsters to the famous Teide volcano. Her voyage starts in the Canary Islands and ends in Cochinchine (Vietnam), stopping along the way in Senegal, Congo, Zaire and Sri Lanka. The vocabulary is that of wonder (‘big’, ‘famous’, ‘admirable’) and of utility, with comments about practical uses of exotic fruits and a lengthy description of a hygienic and rationally planned hospital in Goa. She might have been intrigued by some captions of the illustrations with which La Harpe titillates his readers, with erotic promises that he stops short of fulfilling. Though their captions seem to indicate otherwise, the engravings titled ‘Circoncision du roi de Bantam’, ‘Circoncision des nègres’ and ‘Homme et femme hotentots tirés d’après nature’ show no naked bodies, let alone sexual organs.⁴⁹

43 Estala, *op. cit.* (note 42), translator’s preface, p. 6.

44 Dena Goodman, ‘Letter writing and the emergence of gendered subjectivity in eighteenth-century France’, *J. Women’s Hist.* 17, 9–37 (2005), at p. 19.

45 Explanations of terms such as native metals, quartz, slag, stalagmites and alabaster, on pages 2, 4, 7 and 9 of her manuscript. ADM, C-7 (14), *op. cit.* (note 37). Notes on ‘giants’, obese people and ‘dwarfs’ are taken from volume 1 of the *Suppléments sur l’histoire naturelle de l’homme*.

46 Nicholas Jardine, James A. Secord and Emma C. Spary (eds), *Cultures of natural history* (Cambridge University Press, Cambridge, 1996). Antonio Lafuente and Javier Moscoso (eds), *Georges-Louis Leclerc, comte de Buffon (1707–1788)* (Consejo Superior de Investigaciones Científicas, Madrid, 1999).

47 K. Park and Lorraine Daston, *Wonders and the order of nature* (Zone Books, New York, 1998); Mary Terrall, ‘Fashionable readers of natural philosophy’, in *Books and the sciences in history* (ed. Nick Jardine and Marina Frasca-Spada), pp. 239–254 (Cambridge University Press, Cambridge, 2000); G. V. Sutton, *Science for a polite society: gender, culture, and the demonstration of enlightenment* (Westview Press, Boulder, CO, 1995); Alice N. Walters, ‘Conversation pieces: science and politeness in eighteenth-century Britain’, *Hist. Sci.* 35, 121–154 (1997).

48 ADM, C-7 (7), *op. cit.* (note 37). Jean-François La Harpe, *Abrége de l’histoire générale des voyages* (Hôtel de Thou, rue des Poitevins, Paris, 1746–1789). Joana’s notes correspond to the first six volumes of the work. On Prevost’s work, see Juan Pimentel, *Testigos del mundo: ciencia, literatura y viajes en la ilustración* (Marcial Pons, Madrid, 2003), pp. 233–237.

49 La Harpe, *op. cit.* (note 48), vol. 1, p. 127; vol. 2, p. 274; vol. 3, p. 420.

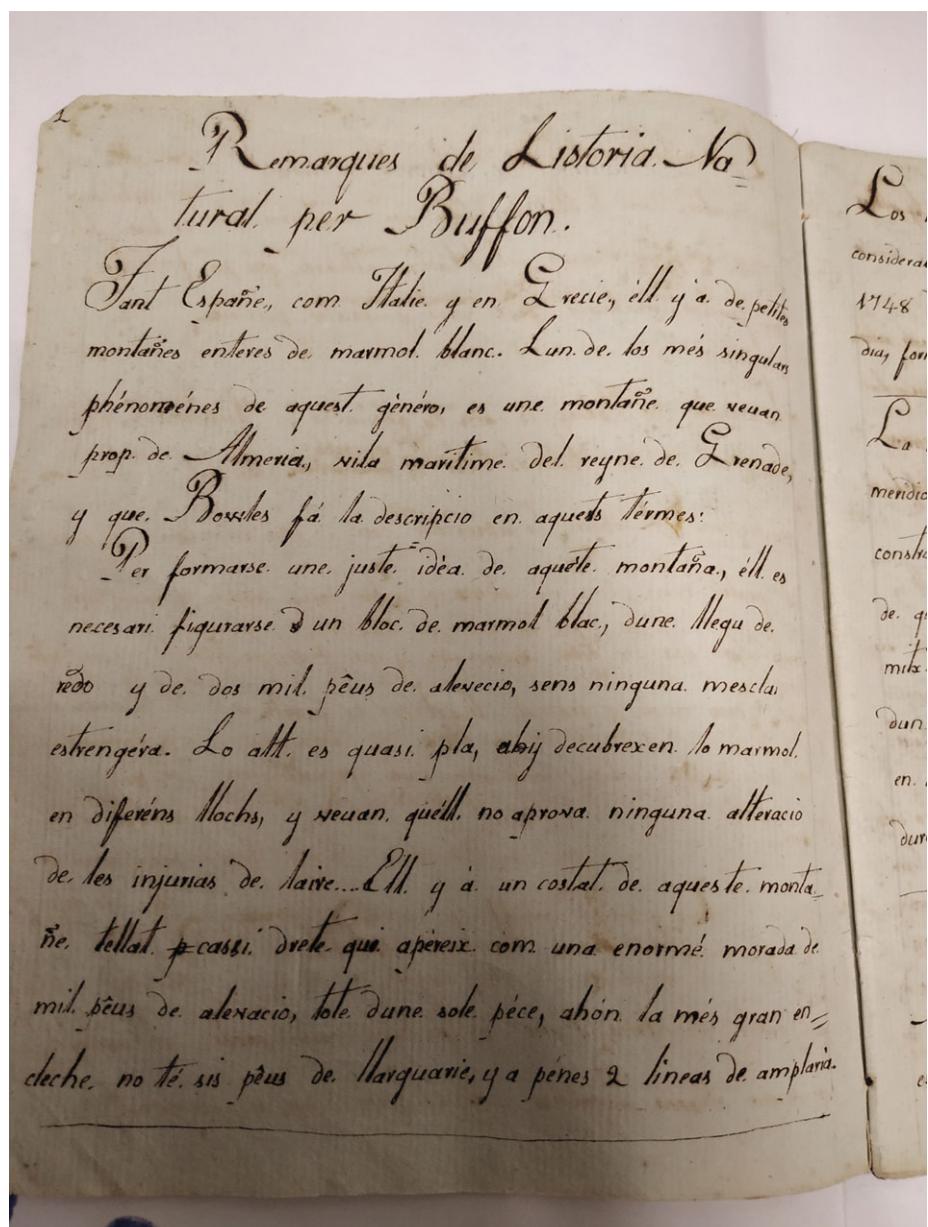


Figure 4. *Notas de Historia natural de Buffon* by Joana de Vigo, Arxiu Diocesà de Menorca (ADM), C-7 (14). Joana's reading notes of Buffon's *Histoire naturelle* start, significantly, with information on natural formations most close to her Mediterranean location (here, marble mountains found in Italy, Spain and Greece) and follow with more distant realities. (Online version in colour.)

Views from an island

De Vigo, like María de Betancourt, never left her native island. However, she benefited from—and contributed to—the network of business contacts and friendship of her family

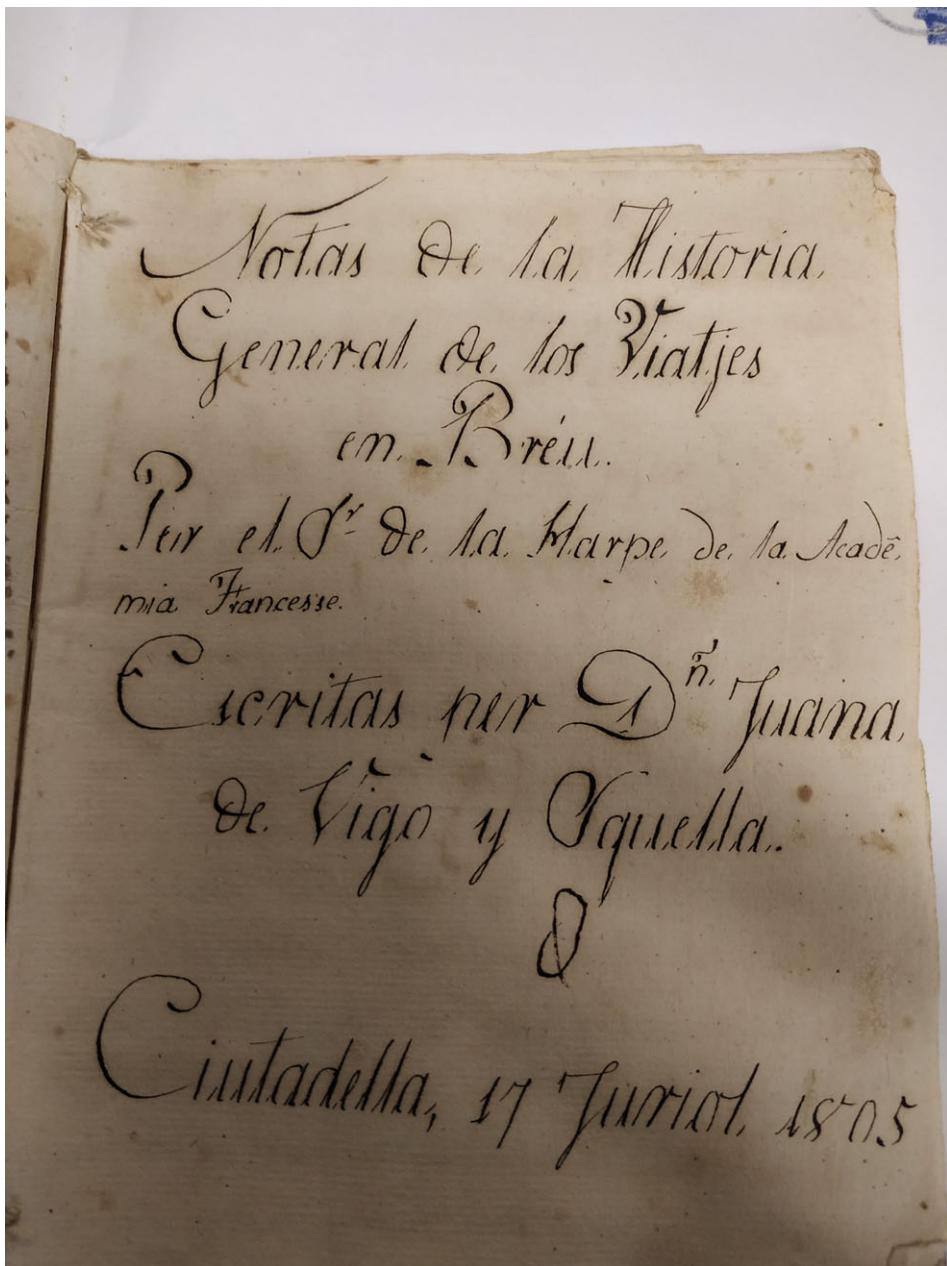


Figure 5. *Notas de la historia general de los Viatges en breu* by Joana de Vigo, ADM, C-7 (7). Joana's excerpts from this work privilege exotic plants and animals; for example, the banana tree, familiar to María de Betancourt in Tenerife but alien to her experience. (Online version in colour.)

in the Mediterranean and beyond. She also took advantage of local circumstances which favoured strong international connections of the local elites (particularly to Britain and France, in addition to Germany and Italy) and a rich intellectual production in Catalan in

history, theatre, classic and religious scholarship and sciences applied to naval design and manufacturing.⁵⁰ Brothers Joan (1746–1819) and Pere Ramis (1748–1816), two polyglot jurists trained in Avignon who left important literary and scholarly writings, were friends to Joana's brothers; although it is impossible to know for certain, it is likely that she benefited somehow from the influence of these learned men of an earlier generation. She might have also interacted with scholar Antoni Febrer (1761–1841), a prolific author of manuscripts and user of an important family library, who shared her interest in moral education and inner devotion. Again, while no written records of this connection exist, it seems no mere coincidence that Febrer, like her, translated Fénelon's *Les aventures d'Aristonous* (some years later than Joana, in 1815). It is reasonable to think that in such a small island the two of them might have met and that, through this well-connected author, she might have expanded her links with the wider Spanish and European circles of the Catholic Enlightenment.⁵¹

Intellectual networking was not straightforward for women, who often had to pursue indirect paths. While polite assemblies (*tertúlies*) and theatre attendance were mixed, freemasons' lodges (limited to British members and suppressed after the Spanish conquest in 1782) were not.⁵² Another social context that was exclusively male was the *Societat Maonesa de Cultura*, founded in 1778 as a reading society of the British and German type and dissolved in 1785 (after a failed attempt to transform it into a patriotic society). This society created a well-assorted library, translated works and discussed intellectually daring topics (the religion of American Indians, botany, philanthropy, the origins of arts and sciences, the regulation of the passions). But it never raised the possibility of admitting women, in contrast to the Madrid and the Aragonese societies, nor is there direct evidence that local women engaged with it in any way, as María de Betancourt did with the Economic Society of Tenerife.⁵³ However, even without female schools, genteel girls acquired Spanish and French through private tutoring and reading and must have gained practice in sociability and conversation.⁵⁴

We ignore everything about Joana's education, apart from a short letter by her older brother Josep in 1794, when both were teenagers, explaining that he was learning to dance and draw, and asking her about her own progress in dancing and French.⁵⁵ This points to a close relationship between the siblings, who were probably educated together under the guidance of a tutor or their own parents before the boy left the island to pursue his studies in Valencia. After that communication, there is a long gap in the correspondence to her or by her until well into the 1830s. In these letters, written when she was already a mature woman in her fifties, we can see that Joana kept in touch with the wider world of

⁵⁰ Josefina Salord, 'Les características del món cultural menorquí: la cruïlla de 1802', in *1802: España entre dos siglos: Sociedad y cultura* (ed. Antonio Morales Moya), pp. 471–486 (Sociedad Estatal de Conmemoraciones Culturales, Madrid, 2003), and *La Il-lustració a Menorca* (Edicions Documenta Balear, Palma de Mallorca, 2010).

⁵¹ Maria Paredes Baulida, *Antoni Febrer i Cardona, un humanista il·lustrat a Menorca (1761–1841)* (Curial/Publicacions de l'Abadia de Montserrat, Barcelona, 1996).

⁵² José A. Ferrer Benimeli, 'La masonería en Menorca y su entorno', in Moya (ed.), *op. cit.* (note 50), pp. 189–212.

⁵³ Antoni-Joan Pons and Josefina Salord (eds), *Registre de la Societat Maonesa* (Institut Menorquí d'Estudis, Maó, 1991). On women in Spanish patriotic societies, see Elena Serrano, *op. cit.* (note 9); Mónica Bolufer, 'Women in patriotic societies: a Spanish debate in a European context', in *Society women and Enlightened charity in Spain: the Junta de Damas de Honor y Mérito, 1787–1823* (ed. Catherine M. Jaffe and Elisa Martín-Valdepeñas Yague), pp. 19–36 (Louisiana State University Press, Baton Rouge, 2022).

⁵⁴ Antoni Roig, *Reflexiones crítico-apologéticas sobre algunos escritos relativos a la isla de Menorca y a sus habitants* (Francesc Burgada, Barcelona, 1790), pp. 58–60.

⁵⁵ Josep de Vigo to Joana de Vigo, 17 January 1794. ADM, C-3, *op. cit.* (note 37).

business, politics and culture through her family.⁵⁶ The Vigos were tightly connected to other nobles and merchants (among them, the Carreras and Esquellas), but also to local intellectuals, to British, French and Spanish authorities, and in the nineteenth century to naval officers of the United States Mediterranean Squadron (based in Maó from 1815 to 1848). Their family archives abound in correspondence and other documents (in Catalan, Spanish and French) about their commercial enterprises and rural possessions, as well as information about the networks of blood, marriage, friendship, loyalty and obligations that tied them to their extended family and to business partners across the Mediterranean (in Mallorca, Barcelona, Southern France and the Maghreb) and more occasionally in America and Asia.

Joana was second of 11 siblings and was particularly close to Miquel, a sea captain who wrote regularly to her from his various destinations in the Mediterranean and gave her a glimpse of the Atlantic from Cádiz, after his return from Havana. She often visited cosmopolitan Maó, staying for long periods at her family's magnificent Sant Antoni farm with neoclassic terrace and garden overlooking the port, where Nelson had been hosted on his way to Sicily and Malta in October 1799.⁵⁷ She corresponded with her sons Joan, in Mallorca and Barcelona, and Josep, involved in trade with Marseille, South America and the Philippines; she received letters from a friend in Egypt and wrote to relatives in Algeria, where many Minorcans emigrated in the nineteenth century. She thus appears at the centre of a closely knit network of kin and friends which she actively nurtured through exchanges of news and gossip, gifts, food delicacies, orders of garments and medicines to be bought and shipped, moral warnings dressed in maritime metaphors ('this tempestuous sea ... is a man's heart') and practical instructions, for example on how to wean a baby.⁵⁸ While men enjoyed their male-only assemblies (*tertulia d'homus*), Joana participated as a married woman and later as a widow in the gender-mixed ritual of visits received and paid ('we have visits everyday') that had become established in the nineteenth century, and for which she seems to have perpetually overseen renovation works of beautiful Carreras house in Sant Miquel Street.⁵⁹ Her letters contain frequent news about storms and about boats arriving and departing that she could see from her windows over the port of Ciutadella. Her sons' trips also raise her expectations, allowing her to travel vicariously: with Josep to China via Egypt, with Joan to Rome, a 'so much desired' pilgrimage about which she seems even more excited than he does, writing: 'I think you will have seen many things. You will have a lot to tell us.'⁶⁰

She was also able to see the 'great map of mankind'—as Edmund Burke had named it in 1777—and of nature unrolled at her family library, which was formed mostly in the eighteenth and early nineteenth centuries and was relatively rich for a family who belonged to the lesser nobility. Its language, diversity and modern preoccupations make it comparable to other contemporary libraries in Menorca, although it stands out among them for its overwhelmingly French composition (189 out of 276 works published before 1830 are in

⁵⁶ The family correspondence is distributed in two archives: Arxiu Diocesà de Menorca and Arxiu del Consell Insular de Menorca.

⁵⁷ Joana de Vigo to Joana (Carreras?), Sant Antoni, 21 June 1838. Miquel de Vigo to Joan Carreras, 1852 (no exact date) informs him that his mother is recovering from a serious illness while in Sant Antoni. ADM, C-3, *op. cit.* (note 37).

⁵⁸ Joana de Vigo to Joan Carreras, 12 May 1854. ADM, C-3, *op. cit.* (note 37).

⁵⁹ Joana de Vigo to Joana Carreras, 21 June 1838; to Joan Carreras, 30 September 1842 and 18 May 1851 ADM, C-3, *op. cit.* (note 37).

⁶⁰ Josep Carreras to Joana de Vigo, from Alexandria (undated); Joana de Vigo to Josep Carreras, 18 July 1843; to Joan Carreras, 25 April 1851 and 12 May 1851. ADM, C-3, *op. cit.* (note 37).

French) and its impressive proportion of books dealing with sciences and techniques (59 out of 276). It is a *bibliothèque d'un homme de goût*, as reads one of the titles of its books—in a wider sense, the library of a cultivated family that made efforts to follow the cultural trends of its time, from history to philosophy and political economy, sentimental novels and travel narratives. It was a family of landowners and sailors with a remarkable interest in the applied dimensions of science, particularly in gardening and agronomy, as well as in navigation and the military arts, medicine and chemistry, along with a wider curiosity in experimental science, cosmology and natural history. It was also a family that tried to give its children—including the girls—the best education possible, with an abundance of books for language learning, dealing with women's instruction or addressing a female readership. The library also contains a relevant number of works authored by women such as Mme de Sévigné, Mme de Genlis, Mme Leprince de Beaumont, Mme Élie de Beaumont, Regina Maria Roche, Marguerite Daubenton and Frederike Henriette Wiesenhuetten. She might have identified with Fontenelle's famous marquise in the *Entretiens sur la pluralité des mondes* that her family owned in a 1761 London edition: a woman eager to learn from conversations with a worldly *philosophe*. But also, and perhaps above all, she might have found in those respectable pedagogues guides for her own education and that of her children, as well as kindred spirits with whom to build up imaginary networks. These women writers must have been models on which to frame her own conscience of authorship, revealed in the signature she proudly stamped on some of her manuscripts ('by Joana de Vigo i Squella'), in a time when many translations were anonymous or signed only with initials.

CONCLUSIONS

Like the islands they inhabited, the women analysed here were situated both at the centre and at the periphery. Gender conventions placed them at the margins of scientific institutions and centres of power, but they were essential to nurture long-distance family networks; they participated fully in the enlightened culture of improvement with their readings, writings and discoveries; and in their daily lives they cultivated a sense of a global world. These multilingual island microcosms, these zones of passage animated by people from multiple cultural and political contexts, and whose local economies depended on the effective management of international connections, opened up new possibilities for middle- and upper-class women. Our study thus adds up to a multicentred, global Enlightenment in which not only large metropolises played an important role, but also places that may have been modest in population or economic resources but were nevertheless strategic nodes in global scientific and trade networks.

Their stories are strongly 'Enlightenment stories', even if they also experienced the world of the first half of the nineteenth century, as they were shaped by the readings, values and concerns of the Enlightenment of their youth. The sedentary lives led by María de Betancourt and Joana de Vigo contrast with the nomadic one of Elizabeth Marsh (1735–1785), daughter of a modest shipbuilder, who was tossed by fate across four continents.⁶¹ It also differs from the lives of Maria Riddell, Maria Graham and Sarah Bowdiah, members of genteel and merchant families, who followed their fathers or husbands to their

61 Linda Colley, *The ordeal of Elizabeth Marsh: a woman in world history* (Harper Press, London, 2007).

colonial appointments and were part of Joseph Banks's networks of travellers.⁶² However, Betancourt and Vigo actively used the opportunities open to them for engaging with the wider world: through their (mostly male) family connections beyond the islands, through the learned travellers they hosted and entertained and particularly via their readings, writings and inventions. In both cases, male relatives took pride in the intellectual activities of these women, who were therefore able to navigate the fine line that separated gentlewomen's respectable intellectual pursuits from non-acceptable erudition and ambition.

Like other eighteenth-century elite and middle-class families, the Betancourts and Vigos used letter writing to expand their connections and to circulate political, scientific and economic information—both global and local—while at the same time nurturing emotional bonds. Their networking can be seen, at a more modest level, as similar to that of the Johnstones, that Scottish family of land owners, imperial entrepreneurs and army officials situated 'at the edges of the Enlightenment' so brilliantly studied by Emma Rothschild.⁶³ These examples also show the variety of ways in which women engaged with the Republic of Letters. In the case of María de Betancourt, perhaps we should call it the 'republic of improvers': the virtual community of institutions and individuals promoting technical advances in which not only texts circulated, but also recipes, materials, devices and sketches. In that of Joana de Vigo, her letters speak more about her sharing news with the family and commercial networks of a maritime republic of sorts. While her letters never discuss her intellectual interests, indirect evidence suggests that she might have kept personal connections with male scholars of her island and that she felt sustained by the authors (male and female) she translated, annotated or read. Her manuscripts, penned in her twenties, portray an eager reader venturing to use French originals from her parents' library that would have raised the eyebrows of many moralists and confessors, entering into imaginary dialogue with European authors, sharing with her contemporaries in Enlightenment concerns, wondering at the prodigies of nature and tasting the exoticism of places far away from her own home. Her later letters show a mature woman contributing her practical knowledge to her networks of family and friends, while continuing to project her imagination beyond her little island in order to sail the seas as her brothers and sons did.

DATA ACCESSIBILITY

This article has no additional data.

ACKNOWLEDGEMENTS

We are very grateful to Simon Werrett, Anna Maercker, the participants in the workshop 'Enlightened Female Networks: Gendered Ways of Producing Knowledge' (13–14

⁶² Carl Thompson, 'Women travellers, Romantic-era science, and the Banksian empire', *Notes Rec. R. Soc. Lond.* **73**, 431–455 (2019).

⁶³ Emma Rothschild, *The inner life of empires: an eighteenth-century history* (Princeton University Press, Princeton, 2011).

November 2020) and the two anonymous reviewers for their insightful comments to previous versions of this paper.

This research was possible thanks to funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme to the project CIRGEN (ERC Grant Agreement No. 787015, ERC-2017-AdG). It also received support from the MPIWG-Berlin.