

MADAME LAVOISIER AND THE OTHERS: WOMEN IN MARIE-ANNE
PAULZE-LAVOISIER'S NETWORK (1771–1836)

by

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Known as a translator and illustrator of chemical texts, Marie-Anne Paulze-Lavoisier (1758–1836) has been often represented as the associate of male *savants* and especially of her husband, the French chemist Antoine-Laurent Lavoisier. This article explores her biography from a different angle and focuses on her trajectories as a *secrétaire*; namely, someone whose main charge was to store and exchange information by means of writing. The article investigates the presence of women in Paulze-Lavoisier's network before and after Lavoisier's death in 1794. First, it shows that her work as a *secrétaire* combined a wide set of writing practices with domestic sociability. Then, it examines how other women contributed to her collaboration with Lavoisier. Finally, it analyses how these relationships changed in the post-revolutionary and Napoleonic era, when Paulze-Lavoisier's role as a *secrétaire* took on a new meaning.

Keywords: note-taking practices; letter writing; domestic sociability;
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NOTE-TAKING AND SOCIABILITY

During his visit to Paris in the winter of 1801, Benjamin Thompson, Count Rumford, an American-born physicist seeking a new career in Europe, took some notes in his diary. Among other things, he recorded several encounters with Marie-Anne Paulze-Lavoisier (1758–1836), a woman of the French *haute bourgeoisie* who had recently regained her apartment after some difficult years. At that time, she was known as the widow of the chemist and tax farmer Antoine-Laurent Lavoisier, sentenced to death by the revolutionary authorities in 1794. The glories of her life before the French Revolution were exhibited all around the *hôtel*. The old laboratory, where since the 1770s she had been assisting her husband's experimental research, was reassembled, together with the mineralogic collections, the library and all kinds of memorabilia, forming a sort of museum dedicated to Lavoisier's memory. Seemingly, during one of the meetings with Rumford that would

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eventually lead to their marriage in 1804, she invited him to stay and work with her. As we read in the man's diary:

Mme Lavoisier is a very friendly chearful good natured woman and she is rich and independant. Speaking of my philosophical pursuits and intended publications I observed that nothing amused me so much as making experiments but that it was tiresome to write an account of them. She said to me: '*Venez vous établir ici et je veux être votre secrétaire, vous travaillerez et moi j'écrirai.*' That would be charming indeed was my answer.¹

Regardless of the unfortunate fate of this relationship, which ended in a divorce in 1809, Paulze-Lavoisier's claim is interesting as she apparently attributed to herself the role of *secrétaire*. While it is difficult to ascertain the veracity of Rumford's account, it should be noted that the term had been used since the early 1780s by some of Lavoisier's colleagues to describe Paulze-Lavoisier's work. In these earlier occurrences, as in Rumford's case, it was primarily related to the act of writing.²

Paulze-Lavoisier's trajectories in science do not correspond to those of a 'professional' writer, and she differs radically from other cases of eighteenth-century women authors, such as, just to name one, Marie-Geneviève Thiroux d'Arconville, who is known today for her prolific scientific and literary works.³ She in fact published very little, namely two translations from English, dating to 1788 and 1789 respectively, and a series of engravings illustrating Lavoisier's famous *Traité élémentaire de chimie*, published in 1789.⁴ And yet, throughout her life and especially during her collaboration with Lavoisier, Paulze-Lavoisier wrote hundreds of pages, not so much in view of publishing her own texts, but rather to record information relating to experimental sessions, travels and observations of various kinds. In other words, she engaged in what recent historiography would call the art of 'note-taking'; that is, a wide set of scribal practices aimed at storing and making readily available all sorts of information.⁵ The most impressive result of this work was probably

1 *Count Rumford's journal of a tour from London to Munich through Paris in 1801*, MSS 6iv/29, 2 December [1801], Special Collections, Cadbury Research Library, University of Birmingham. Some brief excerpts of this diary have been transcribed in Wilfred James Sparrow, 'Count Rumford's journal', *Archives internationales d'histoire des sciences* 42, 15–20 (1958).

2 For an example, see Louis-Bernard Guyton de Morveau to Lavoisier, 13 October 1787, in Lavoisier, *Correspondance*, vol. 5 (Paris, Académie des Sciences, 1993), p. 86.

3 Patrice Bret and Brigitte van Tiggelen (eds), *Madame d'Arconville. Une femme de lettres et de sciences au siècle des Lumières* (Hermann, Paris, 2011). For a general introduction to women's writing, see among others the recent Tiziana Plebani, *La scrittura delle donne in Europa* (Carocci, Rome, 2020). On women and gender in the eighteenth century, a fundamental study is Sarah Knott and Barbara Taylor (eds), *Women, gender and enlightenment* (Palgrave Macmillan, Basingstoke, 2005).

4 On Paulze-Lavoisier's work as a translator and illustrator, see respectively Keiko Kawashima, 'Madame Lavoisier et la traduction de l'*Essay on Phlogiston* de Kirwan', *Revue d'histoire des sciences* 53, 235–263 (2000) and Madeleine Pinault Sørensen, 'Madame Lavoisier, dessinatrice et peintre', *La Revue. Musée des Arts et Métiers* 6, 23–25 (1994). More broadly, on her collaboration with Lavoisier: Keiko Kawashima, *Émilie du Châtelet et Marie Anne Lavoisier. Science et genre au XVIII^e siècle* (Honoré Champion, Paris, 2013); Patricia Fara, *Pandora's breeches: women, science and power in the Enlightenment* (Pimlico, London, 2004), chap. 9; Meghan Roberts, *Sentimental savants: philosophical families in Enlightenment France* (University of Chicago Press, Chicago, 2016), esp. chap. 2. I take the liberty of citing also Francesca Antonelli, 'Scrittura, socialità e strategie di persuasione: Marie-Anne Paulze-Lavoisier, *secrétaire* (1758–1836)', PhD thesis, Università di Bologna/École des Hautes Études en Sciences Sociales (2021).

5 On note-taking practices, see, among others, José Beltrán, 'Ciencia amanuense: cultura manuscrita e historia natural en la Francia moderna (ca 1660–1830)', *Asclepio* 71 (1), 257 (2019) <http://asclepio.revistas.csic.es/index.php/asclepio/article/view/814> (accessed 17 June 2022); Ann M. Blair, *Too much to know: managing scholarly information before the modern age* (Yale University Press, New Haven and London, 2010); Carla Bittel, Elaine Leong and Christine von Oertzen (eds), *Working with paper: gendered practices in the history of knowledge* (University of Pittsburgh Press, Pittsburgh, 2019); Marie-Noëlle Bourguet, *Le monde dans un carnet. Alexander von Humboldt en Italie (1805)* (Éditions du Félin, Paris, 2017); Christian Jacob (ed.), *Lieux de savoir*, 2 vols, vol. 2: *Les mains de l'intellect* (Albin Michel, Paris, 2011), esp. pp. 283–353.

the so-called *Registres de laboratoire*, the 14 petit in-folio laboratory notebooks where Lavoisier used to store experimental data and which repeatedly bear his wife's handwriting (figure 1).⁶ Paulze-Lavoisier's work as a note-taker began in fact at a quite early stage of her collaboration with the chemist, and long before her activity—undoubtedly better known today—as a translator and illustrator of chemical texts. The first evidence of this work dates back to 1773, when—only two years after her marriage—she began to reorganize her husband's notes by adding an alphabetical index and other finding devices to his *Registre de laboratoire n. 1*. Shortly after that, she began to contribute to the actual compilation, both by copying and excerpting from other manuscripts, which she incorporated into the notebooks, and by describing the entire course of the experiments, noting down the experimental conditions under which they were performed as well as their procedures and results. These notes, that she kept taking for about 20 years, deal with a variety of topics, most of which are today considered as crucial in Lavoisier's research: from the analysis of airs in the middle of the 1770s to the experiments on precious stones and minerals of the early 1780s, including probably the studies on human respiration and transpiration of the early 1790s.⁷ Other examples of this particular kind of writing can be found in the *Carnets de voyage*, the diaries the couple compiled while travelling in the French provinces in the late 1780s looking for minerals for their collection or seeking for information on the chemical composition of the soil as well as on the customs and traditions of the towns they visited.⁸ She also contributed to the collection and cataloguing of the mineral specimens, as we learn from the numerous labels glued to the glass jars and bearing once again her handwriting (figure 2).⁹

While it is beyond our scope to examine in detail these complex and fascinating objects, it is important to underline that note-taking practices were crucial for Lavoisier's research, which constantly relied on data recorded in different places and times.¹⁰ These practices are also at the core of some famous drawings in which Paulze-Lavoisier depicted herself in the act of taking notes during an experimental session that was performed in her Parisian residence (figure 3).¹¹

To a certain extent, this work echoes that of a secretary in the traditional sense of the term. Writing on someone's behalf is in fact the practice that most defines the *secrétaire* in eighteenth-century French dictionaries as well as in the *Encyclopédie*.¹² As recent

6 *Registres de laboratoire*, Fonds Lavoisier, Archives de l'Académie des Sciences, Paris. Lavoisier's laboratory notebooks can be consulted on the online database *Panopticon Lavoisier* (ed. Marco Beretta): <http://moro.imss.fi.it/lavoisier/> (accessed 17 June 2022).

7 I have examined Paulze-Lavoisier's contribution to Lavoisier's *Registres de laboratoire* in Antonelli, *op. cit.* (note 4), esp. chaps 2–4, and in Antonelli, 'Note-taking and self-promotion: Marie-Anne Paulze-Lavoisier as a *secrétaire* (1772–1792)', in *Gendered touch: women, men and knowledge-making in early modern Europe* (ed. Francesca Antonelli, Antonella Romano and Paolo Savoia), pp. 220–244 (Brill, Leiden, 2022).

8 *Carnets de voyage*, Fonds Lavoisier, Archives de l'Académie des Sciences, Paris. The majority of these diaries can be consulted on the online database *Panopticon Lavoisier*, Beretta, *op. cit.* (note 6).

9 See once again *Panopticon Lavoisier*, Beretta, *op. cit.* (note 6), for some examples. On the Lavoisiers' mineralogical collections, see Stéphane Pelucchi, 'La collection du cabinet d'histoire naturelle de Lavoisier: sa place dans son œuvre scientifique', *Revue d'histoire des sciences* 69 (1), 153–169 (2016).

10 On this topic, see esp. Marie-Noëlle Bourguet, 'A portable world: the notebooks of European travellers (eighteenth to nineteenth centuries)', *Intel. Hist. J.* 20 (3), 377–400 (2010).

11 On these drawings, see Marco Beretta, 'Imaging the experiments on respiration and transpiration of Lavoisier and Séguin: two unknown drawings by madame Lavoisier', *Nuncius* 27, 163–191 (2013).

12 In the *Encyclopédie*, the entry '*secrétaire*' begins as follows: 'SECRÉTAIRE, (Gram. & Jurisprud.) signifie en général celui qui aide à quelqu'un à faire ses expéditions, comme lettres, extraits, & autres opérations.' A somewhat similar definition was given in

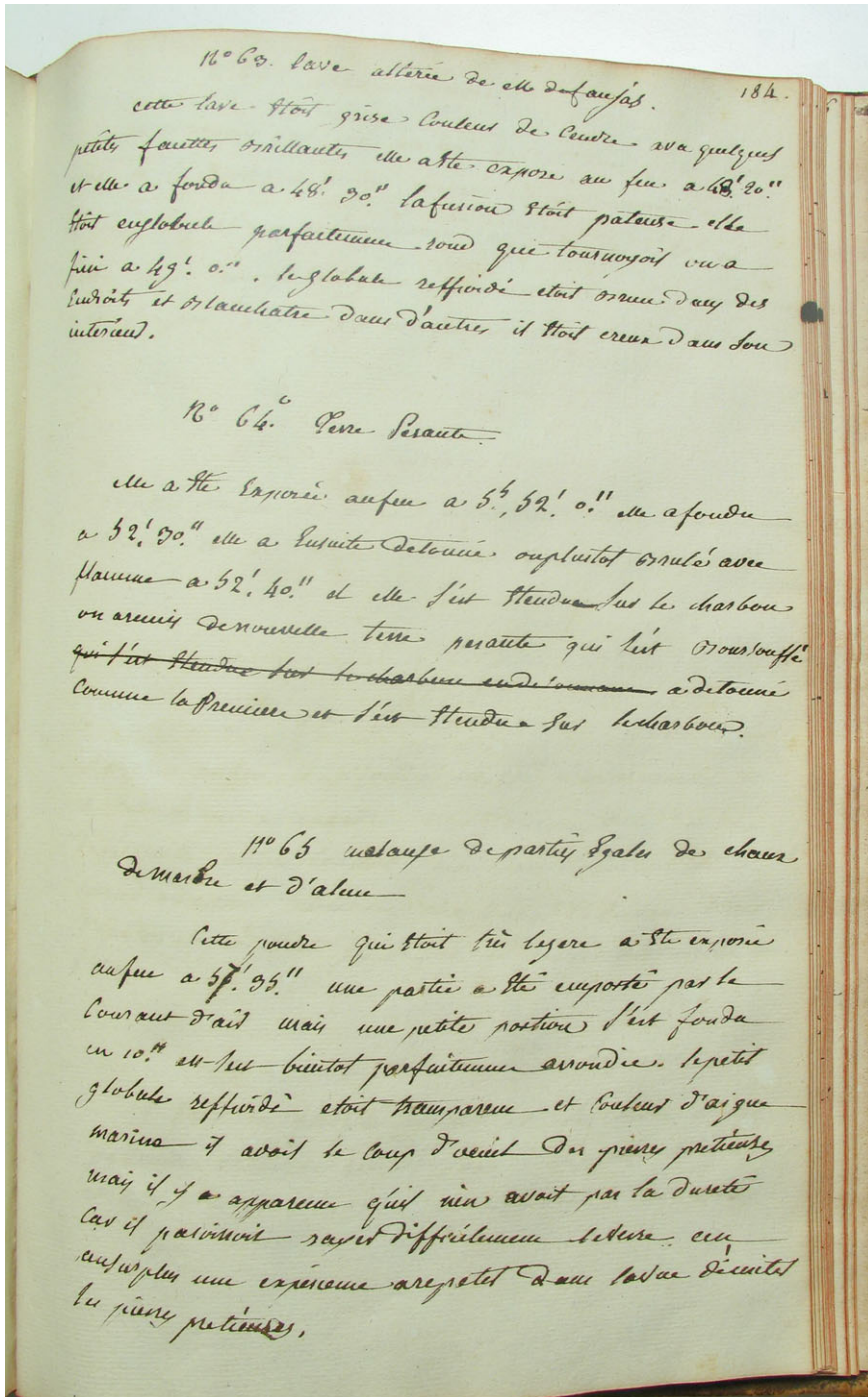


Figure 1. Some notes from Lavoisier's *Registres de laboratoire* in Paulze-Lavoisier's hand, dating to the early 1780s. *Registre de laboratoire* n. 6, fol. 184r, Fonds Lavoisier, Archives de l'Académie des Sciences, Paris. (Online version in colour.)



Figure 2. A mineralogic specimen taken by Lavoisier in 1767 and catalogued by Paulze-Lavoisier in the early 1780s. Item no. T-La 0003, Collection Lavoisier, Muséum d'Histoire Naturelle Henry-Lecoq, Clermont Auvergne Métropole. Photograph by Annette Jourde. (Online version in colour.)

historiography has shown, letters and official documents were the means by which secretaries exchanged information, connected distant individual and institutions and mediated between different cultures, acting as crucial players in early modern diplomacy.¹³ Early modern academies also had their own secretaries. The Académie des Sciences, for instance, had placed a *secrétaire perpétuel* at the top of its hierarchy since its first regulation in 1699. His duties included the collection of the memoirs read by members and the writing of the

the *Dictionnaire de l'Académie française* in 1798: 'Celui dont l'emploi est de faire et d'écrire des lettres, des dépêches pour son maître, pour celui dont il dépend.'

¹³ See for instance Paul M. Dover (ed.), *Secretaries and statecraft in the early modern world* (Edinburgh University Press, Edinburgh, 2016) and, from a different perspective, Nicolas Schapira, *Maîtres et secrétaires (XVIe-XVIIIe siècles). L'exercice du pouvoir dans la France d'Ancien Régime* (Albin Michel, Paris, 2020).



Figure 3. One of the four drawings by Paulze-Lavoisier depicting the experiments on human respiration carried out at the Arsenal in the early 1790s. Marie-Anne Paulze-Lavoisier, unknown title, early 1790s, Wellcome Library, London, item no. 37197i. (Online version in colour.)

academy's history to be published every year.¹⁴ The use of the term *secrétaire* to describe Paulze-Lavoisier's work is therefore interesting. In the first place, it prompts us to consider the wide set of practices in which she engaged, and which cannot be merely reduced to her work as a translator and illustrator. Second, it invites us to consider the ways in which a woman could reappropriate this complex position, which, as is known, was by then reserved to men.¹⁵

One of Paulze-Lavoisier's personal reappropriations of the secretarial role can perhaps be found in the domestic sociability and household management, of which she took charge from the very beginning of her collaboration with her husband. This was a common task among French elite women, who used to host and entertain guests in their salons.¹⁶ The relationships established within the household could then be maintained and extended through correspondence, a form of writing that became part of women's everyday life in the course of the eighteenth century.¹⁷ Since at least the 1770s Paulze-Lavoisier engaged

14 See for instance the classic Roger Hahn, *The anatomy of a scientific institution: the Paris Academy of Science 1666–1803* (University of California Press, Berkeley, 1971), esp. pp. 78–79.

15 For a more detailed discussion of some of these reappropriations, see once again my *Scrittura, sociabilità e strategie di persuasione*, Antonelli, *op. cit.* (note 4).

16 See the classic Dena Goodman, *The republic of letters: a cultural history of the French Enlightenment* (Cornell, Cornell University Press, 1994); also Anthony La Vopa, *The labor of the mind: intellect and gender in Enlightenment cultures* (University of Pennsylvania Press, Philadelphia, 2017). For a different but equally important view on women's role in Parisian salons, see Antoine Lilti, *Le monde des salons: Sociabilité et mondanité à Paris au XVIIIe siècle* (Fayard, Paris, 2005).

17 Dena Goodman, *Becoming a woman in the age of letters* (Cornell University Press, Ithaca and London, 2009).

in both these practices, which intertwined more than once with experimental practice as well as with her activity as a note-taker. It is in fact important to bear in mind that the Lavoisiers, like many of their contemporaries, worked mainly from home, so that—to a certain extent—the spaces of their collaboration overlapped with those of their social life. It was in an apartment in rue des Bons Enfants, where they settled in 1771, that they built their first laboratory; shortly after, they began to host naturalists and travellers for dinner and for other social events, and with whom they exchanged materials and information.¹⁸ It is, however, when they moved to the Petit Arsenal in 1776 that we find increasing references to the couple's social and scientific life. This spacious residence, assigned to the couple after Lavoisier's election as co-director of the Régie des Poudres, soon became the main site of their experimental activity.¹⁹ At the same time, their social life became even more lively: dinners and other kinds of gatherings were organized here at least twice a week, while music concerts and domestic spectacles were sometimes performed in front of the guests. The social dimension of this place, and especially of the laboratory, was later stressed by Paulze-Lavoisier herself, who in around 1820 would have remembered the Arsenal's routine as follows:

Each week, an entire day was devoted to the experiments; Lavoisier used to say that that was his happy day, some illustrious friends, and some young people proud to receive the honour to participate in his experiments used to get together in the morning in the laboratory; it was there that we used to eat, to discuss, to make experiments, there was born the beautiful theory that made its author immortal.²⁰

By 1778, these meetings had become so regular that they were simply called '*nos lundis*' and '*nos samedis*' by Lavoisier and his colleagues.²¹ However, a lively domestic sociability marked Paulze-Lavoisier's life in the nineteenth century as well, especially after moving to a new *hôtel* in rue d'Anjou in the summer of 1804.

In what follows I would like to take Paulze-Lavoisier's work as a *secrétaire* as a starting point to interrogate her approach to other women. At first glance, her network seems to have been composed only of men. When dealing with her case, mostly in the light of her work as a translator and illustrator, historians have focused primarily on her relationship with Lavoisier

18 See, for instance, the famous account by Joseph Priestley, who visited the apartment in rue des Bons Enfants in 1774: 'Having made the discovery [of oxygen] sometime before I was in Paris in 1774, I mentioned it at the table of Mr. Lavoisier, when most of the philosophical people of the city were present; saying that it was a kind of air in which a candle burned better than in common air, but I had not given it any name. At this all the company, Mr. and Madame Lavoisier as much as many, expressed great surprise.' Joseph Priestley, *The doctrine of phlogiston established and that of the composition of water refuted*, 2nd edn (Bryne, Northumberland, 1803 [1st edn 1800]), p. 116. The constant exchange of material and information between the Lavoisiers and their hosts at the beginning of the 1770s is evidenced throughout Lavoisier, *Correspondance*, vol. 2 (Albin Michel, Paris, 1957). On the importance of domestic sociability among naturalists and savants of eighteenth-century Paris, see esp. Stéphane Van Damme, *Paris, capitale philosophique. De la Fronde à la Révolution* (Odile Jacob, Paris, 2005), part 2.

19 On the Arsenal as a site of experimental practice (and, more broadly, on Lavoisier's experimental sites), see Marco Beretta and Paolo Brenni, *The arsenal of eighteenth-century chemistry: the laboratories of Antoine-Laurent Lavoisier (1743–1794)* (Leiden, Brill, 2022), esp. chap. 3.

20 '[U]n jour tout entier dans chaque semaine était consacré aux expériences; c'était disait Lavoisier son jour de bonheur, quelques amis éclairés, quelques jeunes gens fiers d'être admis à l'honneur de coopérer à ses expériences se réunissaient dès le matin, dans le laboratoire; c'était là que l'on déjeunait, que l'on dissertait, que l'on travaillait, que l'on faisait des expériences, que naissait cette belle théorie qui a immortalisé son auteur.' Marie-Anne Paulze-Lavoisier, cited in Charles C. Gillispie, 'Notice biographique de Lavoisier par Madame Lavoisier', *Revue d'histoire des sciences et de leurs applications* 9 (1), 52–61 (1956), p. 57. Translations from French are mine.

21 See, for instance, Guyton de Morveau to Lavoisier, published in Lavoisier, *Correspondance*, vol. 3 (Albin Michel, Paris, 1964), p. 619. On the importance of meeting on a regular basis in eighteenth-century sociability: Lilti, *op. cit.* (note 16), pp. 61–84.

and his colleagues. It is thus as an associate of male *savants* that she is best known today.²² And yet, as we will see, women were not completely absent from her working routine. Identifying the network of people surrounding her is an extremely difficult task, especially because her correspondence has been integrated in Lavoisier's edition of collected works and has never been treated as a corpus in its own right. Furthermore, most of the documents relating to her life after Lavoisier's death in 1794 still remain unpublished and dispersed in different archives. As to her epistolary exchanges in this later phase of her life, it should also be noted that in many cases only the letters sent to her by her male correspondents have been preserved, while her letters are often missing or uncatalogued. Despite these limitations, in what follows I will try to highlight some of her most significant relationships with other women. My aim here is not to propose an exhaustive study of her network, but rather to open some new lines of investigation regarding her approach to female collaboration before and after the French Revolution.

WOMEN AS COLLABORATORS

Throughout her life, Paulze-Lavoisier met and interacted with other women, most of whom came from French high society. Like many other women of the Parisian elite, she regularly attended musical and theatrical performances, public lectures and other kinds of spectacles that usually attracted gender-mixed audiences.²³ Further occasions came when she began to travel with Lavoisier to the French provinces, starting from the end of the 1770s. In the autumn of 1787, for instance, while Lavoisier was absent, she took some time to converse and play cards with a group of women living in the countryside of Orléans and then wrote down some notes about their costumes in her travel diary. She seemed particularly impressed by the similarities between their pastimes and the Parisian trends:

I saw with great pleasure that the richest and most elegant women played excessively *petit jeu*. At the *intendance* I played a game of *revertis au liard*. I was playing with the richest woman in the city. The tone of society seemed to me to be absolutely the same as in Paris, the same customs, the same way of life. The same fashion. From what I have seen it seems to me that the table is a very essential point. Almost everyone has supper, and the importance they place on talking about the supper they had the day before and the one they will have the next day proves the pleasure they have taken in it.²⁴

22 On Paulze-Lavoisier's relationship with Lavoisier's male colleagues, see the works cited in note 4 and also Keiko Kawashima, 'Madame Lavoisier: assistante invisible d'une communauté scientifique', *Bull. Nagoya Inst. Tech.* 4, 249–259 (1995) and Kawashima, 'Madame Lavoisier: the participation of a salonière in the Chemical Revolution', in *Lavoisier in perspective: proceedings of the international symposium* (ed. Marco Beretta), pp. 79–94 (Deutsches Museum, Munich, 2005).

23 Just to mention one of the accounts relating to this topic: 'Au temps de la vogue des cours du Lycée, près le Palays-Royal, [Paulze-Lavoisier] empruntait la voiture de son père, suivait deux ou trois cours de science, se faisait mener ensuite chez mon oncle de Saint-Wast, renvoyait la voiture paternelle, et après avoir soupé, chaussait de gros souliers, prenait le bras de son laquais et retournait à pied des Tuileries à l'Arsenal.' François-Auguste Fauveau de Frénilly, *Souvenirs* (Chuquet, Paris, 1909), p. 11. Concerning Paulze-Lavoisier's presence at operatic spectacles, an interesting source is Gouverneur Morris, *A diary of the French Revolution* (ed. Beatrix Cary Davenport) (Houghton Mifflin, Boston, 1939).

24 'J'ai vu avec un grand plaisir que les femmes les plus riches et les plus élégantes jouoient excessivement petit jeu. À l'intendance j'ai fait une partie de *revertis au liard*. Je jouois cependant avec la femme à peu près la plus riche de la ville. Le ton de société m'a paru être absolument le même qu'à Paris les mêmes usages la même manière de vivre. Les mêmes modes. D'après ce que j'ai pu voir il me paroît que la table est un point très essentiel. Presque tout le monde soupe, et l'importance que l'on met à parler du souper qu'on a fait la veille de celui qu'on fera le lendemain prouve le plaisir qu'on y a pris.' *Carnet de voyage n. 15*, fol. 6r, Fonds Lavoisier, Archives de l'Académie des Sciences, Paris.

While the experience of travelling offered a further opportunity to meet other women, it is in the 'private' laboratories that most of her female-to-female relationships seemed to have been cultivated. As we will see, in at least two cases these relationships took the form of a collaboration.

First of all, it is worth noting that in Paulze-Lavoisier's daily life, sociability was not always an end in itself, but sometimes served as a means to promote her husband's research. From 1785 Lavoisier was engaged in what has rightly been called a 'campaign of persuasion' aimed at finding supporters for his chemical theories on an international level.²⁵ This search for a general consensus was not carried out exclusively through the publication of texts, such as the *Méthode de la nomenclature chimique* (1787), where Lavoisier and some of his closest associates revealed their view on chemical nomenclature, or the French edition of the *Essay on phlogiston* (1788), which Paulze-Lavoisier translated from English with the aim of both advertising Lavoisier's chemical views and to represent him as the author of an entirely 'new' way of doing chemistry.²⁶ Other strategies intended to convince the opponents of Lavoisier's theoretical reforms were enacted. One of these strategies included inviting a selected audience to visit the laboratory at the Arsenal, to witness the experiments and to converse, eat and spend time with the Lavoisiers. The English agronomist Arthur Young, for instance, was hosted in this residence in 1787 and reported his visit as follows:

The 16th. To Mons. Lavoisier, by appointment. Madame Lavoisier, a lively, sensible, scientific lady, had prepared a déjeuner Anglois of tea and coffee, but her conversation on Mr. Kirwan's Essay on Phlogiston, which she is translating from the English, and on other subjects, which a woman of understanding, that works with her husband in his laboratory, knows how to adorn, was the best repast. That apartment, the operations of which have been rendered so interesting to the philosophical world, I had pleasure in viewing. In the apparatus for aerial experiments, nothing makes so great a figure as the machine for burning inflammable and vital air, to make, or deposit water; it is a splendid machine.²⁷

Paulze-Lavoisier was familiar with these kinds of social events from at least the beginning of the 1780s, when she organized an experimental session on the combustion of precious stones and surprised her guests by showing her skills as a laboratory assistant and a note-taker.²⁸ In the second half of the decade these rituals took on further meaning and became a powerful instrument 'to convert' the adversaries.²⁹ Most of her guests were scientists and *amateurs* who, thanks to their international contacts, could influence in some way the contemporary debates on chemistry. An eloquent example is that of Marsilio Landriani, an

25 Carleton E. Perrin, 'The triumph of the Antiphlogistians', in *The analytic spirit: essays in the history of science in honor of Henry Guerlac* (ed. Harry Woolf), pp. 40–63 (Cornell University Press, Ithaca, 1981), at p. 50. On this topic, see also Bernadette Bensaude-Vincent, *Lavoisier: Mémoires d'une révolution* (Flammarion, Paris, 1993), esp. chap. 5, and Jan Golinski, 'Precision instruments and the demonstrative order of proof in Lavoisier's chemistry', *Osiris* 9, 30–47 (1994). I have myself worked on this campaign in 'Becoming visible: Marie-Anne Paulze-Lavoisier and the campaign for the "New Chemistry" (1770s–1790s)', in *Women, gender and chemistry* (ed. Annette Lykknes, Joris Mercelis and Elena Serrano), *Ambix*, special issue (forthcoming).

26 On this translation, see Kawashima, 'Madame Lavoisier et la traduction de l'*Essay on Phlogiston*', *op. cit.* (note 4).

27 Arthur Young, *Travels during the years 1787, 1788 and 1789* (London, 1792), at p. 95.

28 'Lampe d'air dephlogistiqué. Pierres soumises à l'action du feu animé par l'air gaz oxygène', *Registre de laboratoire n. 16*, fols 151r–192r, Archives de l'Académie des Sciences, Paris, Fonds Lavoisier.

29 These performances were explicitly described as 'conversions' in Paulze-Lavoisier's correspondence: see, for instance, Landriani to Paulze-Lavoisier, 12 October 1788, in Lavoisier, *Correspondance*, vol. 5, *op. cit.* (note 2), pp. 219–220.

Italian naturalist and industrial spy who in 1788 was invited to the Arsenal to attend a series of experiments involving oxygen. Paulze-Lavoisier managed the whole process of the ‘conversion’, preparing Landriani’s visit through correspondence and then taking notes during the experimental session. The accounts that can be found in Lavoisier’s laboratory notebooks, significantly titled ‘*Expérience pour tenter la conversion du chevalier Landriani*’, are in fact entirely written in her hand.³⁰

It is easy to imagine that these complex and obscure initiatives were primarily aimed at advertising Lavoisier’s theories, rather than promoting his wife’s work. At the same time, the search for public support probably helped Paulze-Lavoisier to appear as a visible actor in her husband’s research team.³¹ Moreover, and most importantly for the purpose of this article, it probably provided the conditions for the creation of a somewhat personal network for Paulze-Lavoisier, a web of relationships in which women were also included. The first case that I would like to highlight is that of Claudine Poulet (1735–1820), better known as Madame Picardet. Born into a rich family of Dijon, in 1755 Claudine was married to a barrister, Claude Picardet, who shortly after became a member of the Académie Royale des Sciences, Arts, et Belles-lettres de Dijon and later director of the botanical garden. While it is likely that her husband introduced her to the learned circle of Dijon, where she became acquainted with chemistry and natural history, she soon gained a reputation of her own, especially as a translator of chemical and mineralogical texts.³² Her first meeting with Paulze-Lavoisier probably dates back to September 1787 and took place in Guyton de Morveau’s laboratory in Dijon. Both the Lavoisiers knew that Picardet assisted Guyton de Morveau in experimental practice, support from which Lavoisier himself benefited. In 1785, for example, he had entrusted Claudine with some meteorological measurements to be made three times per day with his own barometer. As we learn from the travel diary that the Lavoisiers compiled during their visit, on that occasion the four collaborators made some measurements together. While Lavoisier, Claudine Picardet and Guyton de Morveau worked on Lavoisier’s barometer, Paulze-Lavoisier noted everything down in her *carnet*. The recording of visits to cabinets and provincial laboratories, and of the experiments performed while travelling, is indeed quite frequent in the couple’s *Carnets de voyage*.³³ In this case, Paulze-Lavoisier noted the place where the measurements were made, the instruments that were used and the results that were obtained, adding that some of the results had been ‘observed by Mde Picardet’ (figure 4).³⁴ This short note, harshly written and apparently insignificant, is in fact important for us as it shows that the two women, at least on that occasion, experimented and worked together.

The visit to Guyton de Morveau’s laboratory, however, was probably not only about experimental practice. It is possible, in fact, that by spending time with Claudine Picardet

30 ‘Expériences pour tenter la conversion du chevalier Landriani’, *Registre de laboratoire n. 13*, fols 1r–5r, Archives de l’Académie des Sciences, Paris, Fonds Lavoisier.

31 On this specific topic, see Antonelli, *op. cit.* (note 25).

32 On Claudine Picardet, see Patrice Bret, ‘Picardet (Claudine Poulet, épouse -, puis Mme Guyton Guyton-Morveau)’, in *Dictionnaire des femmes des Lumières* (ed. Huguette Krief and Valérie Andre), pp. 914–918 (Paris, Honoré Champion, 2015), and Bret, ‘Les promenades littéraires de Madame Picardet: la traduction comme pratique sociale de la science au XVIII^e siècle’, in *Traduire la science: Hier et aujourd’hui* (ed. Pascal Duris), pp. 125–152 (Maison des Sciences de l’Homme d’Aquitaine, Pessac, 2008) (<http://books.openedition.org/msha/8775>).

33 *Carnet de voyage n. 15*, fols 68r–68v, Fonds Lavoisier, Archives de l’Académie des Sciences, Paris.

34 *Carnet de voyage n. 15*, fol. 68v, Fonds Lavoisier, Archives de l’Académie des Sciences, Paris.

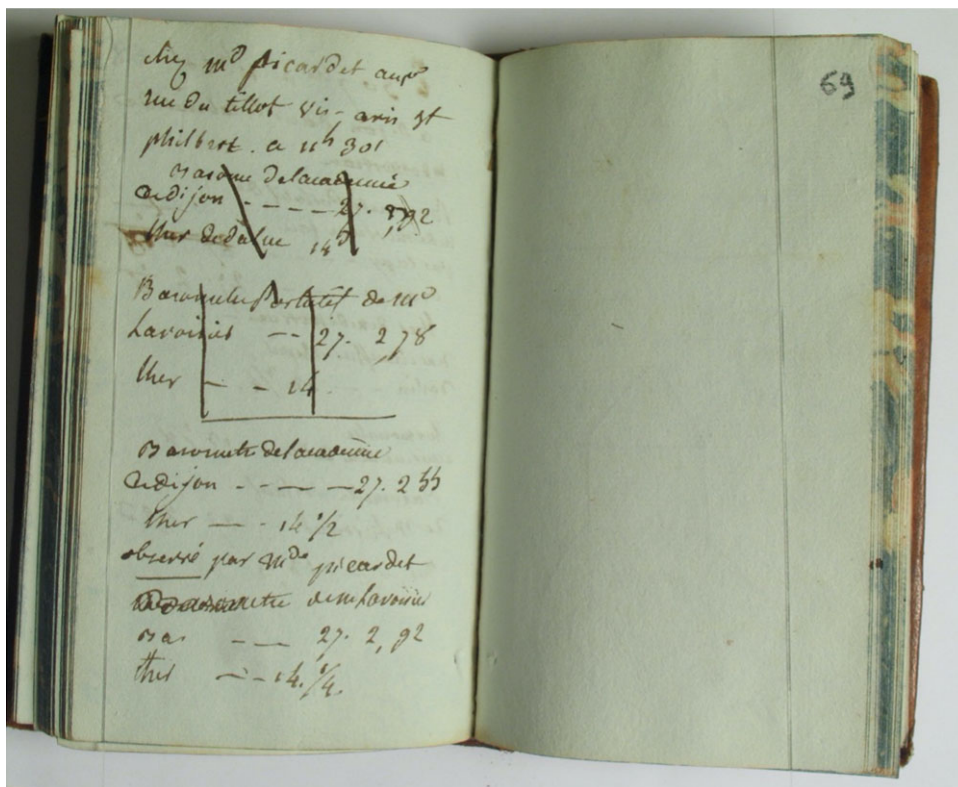


Figure 4. Barometric measurements taken by Claudine Picardet in Guyton de Morveau's laboratory in 1787; notes by Paulze-Lavoisier. At the bottom of the page, we read: 'Barometre de l'academie de Dijon [...] Observé par M^{de} Picardet.' *Carnets de voyage* n. 15, fol. 68v, Archives de l'Académie des Sciences, Paris. (Online version in colour.)

and Guyton de Morveau, the Lavoisiers hoped to consolidate their support and ensure their active presence in their campaign. Although he worked from a French province, Guyton de Morveau was far from being isolated, keeping regular epistolary exchanges with scientists all over Europe.³⁵ Furthermore, Claudine Picardet could reach a wide audience through her translations.³⁶ The interest taken by both the Lavoisiers in this relationship emerges clearly from their efforts, once back in Paris, to keep in contact with their friends through correspondence.³⁷

Despite what appears to have been a close relationship, only one letter between Paulze-Lavoisier and Picardet seems to have survived. In this document, dating to the summer of 1788, Picardet wrote to Paulze-Lavoisier from Dijon to thank her for sending her a copy of

35 The extent of Guyton de Morveau's international network can be gauged from Patrice Bret, Emmanuel Grison and Michèle Goupil, *A scientific correspondence during the Chemical Revolution: Louis-Bernard Guyton de Morveau and Richard Kirwan, 1782–1802* (Office for the History of Science and Technology, Berkley, 1994).

36 Bret, 'Les promenades littéraires de Madame Picardet', *op. cit.* (note 32) and Bret, 'The letter, the dictionary and the laboratory: translating chemistry and mineralogy in eighteenth-century France,' *Ann. Sci.* 73, 122–142 (2016).

37 See esp. Paulze-Lavoisier to Guyton de Morveau, 9 October 1787, in Lavoisier, *Correspondance*, vol. 5, *op. cit.* (note 2), p. 85.

the *Essai sur le phlogistique* that her friend had recently translated, and to compliment her for her work. ‘Madame’, she wrote,

I had admired enough your learned translation to know that politeness would give me the duty to show you this feeling, M. de Morveau had made me anticipate the pleasure of reading you. I am overwhelmed with the satisfaction that you are providing me today. Receive, Madame, my sincere gratitude, and please convey to Monsieur Lavoisier the deep esteem which he never ceases to inspire in me. I would be very happy if those gentlemen whom you have helped so well to remove all the phlogiston from Mr. Kirwan, would find here the share of gratitude they deserve, they are quite sure of the success of this enterprise, because graces [*grâces*] accompany knowledge.³⁸

Born about one year earlier in the laboratory, this relationship seems to take the form of mutual support. The appreciation expressed by Picardet appears highly significant if we consider Paulze-Lavoisier’s complex approach to authorship. The latter was clearly aware that the status of the *femme auteur* was problematic within French polite society and was always very careful in avoiding the criticisms that were often addressed to female authors.³⁹ A positive comment coming from a renowned scientific translator such as Picardet, who had by then published many essays on similar topics, was thus a strong acknowledgement of Paulze-Lavoisier’s writing skills and could serve as an encouragement to move forward in that direction.

Another case worth mentioning is that of Albertine Adrienne Necker de Saussure (1766–1841). Known today as a pedagogist and a biographer of Germaine de Staël, Necker de Saussure was introduced to chemistry by her father, the geologist and alpinist Horace Benedict de Saussure. Belonging to Swiss high society, she took advantage of her social status and connections to promote the scientific career of her husband, Jacques Necker, nephew of the famous minister, who worked as a botanist in Geneva.⁴⁰ It was during one of her trips across Europe that she became acquainted with Paulze-Lavoisier. Their first contact seems to date back to the winter of 1786, when both Albertine and her husband, recently married, were invited to spend a few days at the Arsenal. In fact, according to Guyton de Morveau, who hosted the couple in January 1787, they had been ‘well received’ by the Lavoisiers in Paris a few weeks earlier.⁴¹ Similarly, in an old biography of Necker de Saussure, based on her unpublished correspondence, we read that she had been a guest at the Arsenal during her journey to Paris. Here she visited the laboratory and witnessed several experiments, on which she provided a lengthy report to her father.⁴² However, why is the relationship between Paulze-Lavoisier and Necker de Saussure so important?

38 ‘J’avois déjà admiré votre sçavante traduction pour savoir que la politesse me donneroit le devoir de vous témoigner ce sentiment, M. de Morveau m’avoit fait anticiper sur le plaisir de vous lire. Je suis comblée de satisfaction, que vous me le procuriez vous même aujourd’hui, recevez, Madame, ma sensible reconnaissance, et daignez faire agréer à Monsieur Lavoisier le sentiment d’estime profonde qu’il ne cesse de m’inspirer. Je serois très heureuse si ces Mss qui vous avez si bien aidé à enlever tout le phlogistique de Mr. Kirwan, trouvoient ici la part de reconnaissance qu’ils méritent, ils sont bien surs du succès de cette entreprise, parce que les graces accompagnent le sçavoir.’ Picardet to Paulze-Lavoisier (no date), Dossier 1243.1, Fonds Lavoisier, Archives de l’Académie des Sciences, Paris.

39 Esp. Kawashima, *Émilie du Châtelet et Marie Anne Lavoisier*, *op. cit.* (note 4).

40 Clarissa Campbell Orr, ‘Albertine Necker de Saussure, the mature woman author, and the scientific education of women’, *Women’s Writ.* 2 (2), 141–153 (1995).

41 The letter is mentioned in Perrin, *op. cit.* (note 25).

42 Julie de Mestral-Combremont, *Albertine Necker de Saussure 1766–1841* (Lausanne, Librairie Payot, 1946), esp. p. 58.

It has often been stated that it was Horace Benedict de Saussure who introduced his daughter to Parisian high society. In the case of the Lavoisiers, however, it was rather Albertine who put the scientist in contact with Paulze-Lavoisier and, consequently, with Lavoisier. In fact, the first and only known letter by de Saussure to the French chemist dates to February 1790, while epistolary contacts with his wife seemingly took place two years earlier.⁴³ The occasion came when de Saussure became aware, via Albertine, that the Lavoisiers saw in him a scientific adversary. De Saussure was ashamed of the misunderstanding, caused by a malicious statement made by Marsilio Landriani. After having thanked Paulze-Lavoisier for the warm hospitality with which she had welcomed his daughter and son-in-law, he denied any animosity against the 'new' theory:

I am ashamed, Madame, to fulfil by a movement of anger a duty which recognition alone should have dictated. The way you, Madame, and Monsieur Lavoisier have welcomed and honoured my daughter and my son-in-law, the things you have said and written to them, which are infinitely obliging to me, invite me to express my deep gratitude. However, it is quite possible that I would have kept silent if my anger against the Chevalier Landriani had not put the pen in my hand. How, Madame, he dared to tell you that I was the most ardent enemy of your system and that I had succeeded in perverting my daughter and son-in-law.⁴⁴

This point would have been reaffirmed in the following letter:

[B]ut after all I have the greatness of soul to forgive him, if only in recognition of the opportunity he has given me to begin to correspond with you, Madame, and to thank you for your kindness to my children.⁴⁵

It is hard to say whether the hospitality given by the Lavoisiers to Albertine Necker de Saussure was the result of a strategy aimed at attracting the attention of her father or not. It is certain, however, that from that first contact the geologist became closer and closer with the Lavoisiers and eventually, in a letter to Paulze-Lavoisier dating to November 1788, he acknowledged his 'conversion' to Lavoisier's theory.⁴⁶ It should also be noted that, after this episode, Necker de Saussure also acted as an intermediary with the physicist Marc-Auguste Pictet, a Swiss physicist who became another important target of the Lavoisiers' campaign at the end of the 1780s.⁴⁷

What is made clear in these two cases is, above all, the importance of sociability as a means to promote theoretical claims and scientific careers. In order to create a general consensus upon his theories, Lavoisier had to rely on a network of *savants* and influential amateurs who were favourable to his views. Paulze-Lavoisier, who, as a woman, was fairly

43 De Saussure to Lavoisier, 11 February 1790, published in Lavoisier, *Correspondance*, vol. 6 (Académie des Sciences, Paris, 1996), pp. 111–112.

44 'Je rougis Madame, de remplir par un mouvement de colère un devoir que la seule reconnaissance auroit du me dicter. L'accueil dont vous, Madame, et Monsieur Lavoisier avés honoré ma fille et mon gendre, les choses infiniment obligeantes pour moi que vous leur avés dites et écrites, me sollicitent à vous témoigner ma vive gratitude. Cependant, il est fort possible que j'eusse gardé le silence si ma colère contre le Chevalier Landriani ne m'avoit pas mis la plume à la main. Comment, Madame, il a osé vous dire que j'étois le plus ardent ennemi de votre système et que j'étois parvenu à pervertir ma fille et mon gendre.' De Saussure to Paulze-Lavoisier, 28/29 February 1788, in Lavoisier, *Correspondance*, vol. 5, *op. cit.* (note 2), pp. 139–141.

45 '[M]ais enfin j'ai la grandeur d'âme de lui pardonner ne fût-ce qu'en reconnaissance de l'occasion qu'il m'a donnée d'entrer en correspondance avec vous, Madame, et de vous remercier de vos bontés pour mes enfants.' De Saussure to Paulze-Lavoisier, 23/24 March 1788, in Lavoisier, *Correspondance*, vol. 5, *op. cit.* (note 2), pp. 151–152.

46 De Saussure to Paulze-Lavoisier, 7 November 1788, in Lavoisier, *Correspondance*, vol. 5, *op. cit.* (note 2), p. 232.

47 See esp. Pictet to Lavoisier, 10 January 1790, in Lavoisier, *Correspondance*, vol. 6, *op. cit.* (note 43), pp. 105–106.

comfortable with domestic sociability and correspondence, could easily respond to this need. While taking care of her husband's plans and ambitions, however, she also managed to create an autonomous network where women could work together and act as collaborators.

WOMEN AS FRIENDS

Lavoisier's death in 1794 created a dramatic rupture in this working routine. Many of the chemist's closest acquaintances, such as Guyton de Morveau and Antoine Fourcroy, had prominent political roles in the events that led to the end of the monarchy and to the abolition of most of the academic institutions of the Old Regime. Paulze-Lavoisier held them responsible for her husband's execution and broke off all connections with many of his former associates. The sudden end of her friendship with Claudine Picardet, who in the meantime had developed a romantic relationship with Guyton de Morveau, was most likely one of the side effects of these changes.

Between winter 1793 and late spring 1796 all Paulze-Lavoisier's properties had been confiscated by the revolutionary authorities. In the spring of 1794 she also experienced a period of detention, which lasted only a few weeks thanks to a new, more lenient treatment of suspects. The relatively tolerant treatment she received was established after the historical death sentence of Robespierre in July 1794.⁴⁸ However, as early as 1795 she began to reclaim her properties with the help of some friends, such as the Abbé Morellet, author of a pamphlet known as *Le Cri des familles*, where he asked for justice on behalf of the families of revolutionary victims and especially of widows.⁴⁹ In addition, she personally asked the post-revolutionary institutions and authorities for the restitution of every single book, instrument, notebook and mineralogical specimen that once belonged to her husband. The numerous letters she wrote to the authorities during this period testify to her determination to reconstitute the estates exactly as she had left them before his trial in the spring of 1794. Moreover, around 1800 she resumed the social activities of her salon, where, at least once a week, she hosted a new *société* of scientists after their meetings at the Institut.⁵⁰ It was in this context, as we have seen, that she also met Rumford. A further quotation from his travel diary describes one of his first visits to Paulze-Lavoisier:

Found Madame Lavoisier at home and alone. Sat with her for an hour, and found her very lively, witty and pleasing in conversation. She received me in an elegant room which had every appearance of being a Cabinet de Physique. It was quite filled and even crowded with Philosophical and Chemical apparatus. The various instruments were constructed on the

48 These events have been described in detail in Jean-Pierre Poirier, *La science et l'amour: Madame Lavoisier* (Pygmalion, Paris, 2004), esp. chap. 13.

49 [André Morellet], *Le Cri des familles, ou discussion d'une motion faite à la Convention Nationale, par le Représentant du peuple Lecointre, le 22 frimaire de l'an troisième de la République, relativement à la révision des jugemens des tribunaux révolutionnaires* (Paris, L'an III de la République [1795]). On Paulze-Lavoisier's involvement in this pamphlet, see *Mémoires de l'Abbé Morellet de l'Académie Française, sur le dix-huitième siècle et sur la Révolution [...] par M. Lémoney*, vol. 2 (Ladvocat, Paris, 1821), pp. 139–140.

50 The earliest reference relating Paulze-Lavoisier's new salon that I have been able to find dates back to 1798: see Bibliothèque de Genève, *Odier, Jean-Louis: Lettre autographe signée adressée à son père Louis Odier. Paris, 4 août 1798*, MS f156/l29. The Bibliothèque Municipale et Interuniversitaire de Clermont-Ferrand holds around 200 letters that were addressed to Paulze-Lavoisier between 1800 and 1836, most of which are related to her social life. They are catalogued under the name of the male correspondent in Collection Chazelles (MS 337-338-339) and Collections Chazelles et Dons divers (MS 474–475).

largest scale with great care and accuracy. It was evident that they were the apparatus employed by the late unfortunate M. de Lavoisier—but I did not ask the question.⁵¹

Shortly after, Rumford moved into Paulze-Lavoisier's apartment and contributed to her laboratory by adding to it from his own instruments.⁵² Around the same time, Paulze-Lavoisier resumed the publication of Lavoisier's *Mémoires de physique et de chimie*, a collection of his most important works and memoirs, both published and unpublished, the printing of which had been interrupted in 1793. In her mind, this should have been a tribute to her husband's scientific achievements and a strong vindication of his merits in the foundation of the 'new chemistry'. This project eventually failed, and she managed to publish only two of the eight volumes that were originally planned; she thus limited herself to offering some copies to friends and members of the new scientific institutions.⁵³ The replies she received for these gifts, however, show that her initiative was seen as another way to construct a 'monument' in Lavoisier's memory.⁵⁴

It is known that Paulze-Lavoisier's marriage with Rumford turned out to be an unhappy one and officially ended in 1809 after many disputes that seem to have amused Parisian high society.⁵⁵ Her desire to work as a note-taker for him in Lavoisier's former laboratory was also left aside quite soon, as well as her activity as a translator and illustrator. Her role as a *secrétaire* was not, however, entirely abandoned; it was rather reinterpreted and took on new meanings. For example, she did not completely stop working on Lavoisier's papers, which she carefully kept in her residence until her own death in 1836. During this long period, she let some of her closest friends consult the laboratory notebooks; one of them was Jean-Baptiste Biot, who used some volumes of the *Registres de laboratoire* while working on his *Traité de physique élémentaire et mathématique*.⁵⁶ On the other hand, some notes on botany, that she probably took at the beginning of the nineteenth century, suggest that the note-taking practices she had learned years earlier were not completely removed from her routine.⁵⁷ Furthermore, right up to the end of her life she kept writing letters. The liveliness of her epistolary network can be gleaned by looking at

51 *Count Rumford's journal of a tour from London to Munich through Paris in 1801*, MSS 6/iv/29, 21 November [1801], Special Collections, Cadbury Research Library, University of Birmingham.

52 *Inventaire après décès de Paulze, Marie-Anne-Pierrette*, notaire Alexis Vavin, MC/RE/XCIX/12, fols 66v–68r, Archives Nationales, Paris, where the instruments that belonged respectively to Lavoisier and Rumford are mentioned as parts of the same collection. After the divorce, signed in 1809, Rumford moved into an *hôtel* in Auteuil, in the outskirts of Paris, and took with him some of Lavoisier's instruments. See *Inventaire après-décès de M.^r Le Comte de Rumford*, notaire Vialut, MC/ET/XXXV/1044, esp. fols 24v and 31r, Archives Nationales, Paris.

53 On this project, see esp. Marco Beretta, 'Lavoisier and his last printed work: the *Mémoires de physique et de chimie* (1805)', *Ann. Sci.* **58**, 327–356 (2001).

54 See, for instance, Prévost to Paulze-Lavoisier, 4 October 1805, MS 338, fols 85r–86v, Bibliothèque Municipale et Interuniversitaire de Clermont-Ferrand. It may be interesting to note that Paulze-Lavoisier is not the only woman who worked on the construction of her husband's posthumous image during the nineteenth-century. Another example can be found in Jane Davy: see Frank James, 'Constructing Humphry Davy's biographical image', *Ambix* **66** (2–3), 214–238 (2019). For an earlier case, see Elizabeth Yale, 'A letter is a paper house: home, family and natural knowledge', in Bittel *et al.*, *op. cit.* (note 5), pp. 145–159.

55 Among others, Jean-Pierre Poirier, *La science et l'amour: Madame Lavoisier* (Pygmalion, Paris, 2004), pp. 159–225 and Jane Merrill, *Sex and the scientist: the indecent life of Benjamin Thompson, Count Rumford (1753–1814)* (McFarland & Co., Jefferson, NC, 2018), esp. chap. 18.

56 See, for instance, the explicit references to Paulze-Lavoisier in Jean-Baptiste Biot, *Traité de physique élémentaire et mathématique*, vol. 1 (Deterville, Paris, 1816), pp. 146–147. Other *Registres* were definitely lost, and specifically the notebooks devoted to experiments on human respiration performed at the Arsenal in the early 1790s, which she left in the hands of Armand Seguin, a former collaborator of Lavoisier, following an argument regarding the publication of the *Mémoires de physique et de chimie*. I have discussed some of these events in *Scrittura, sociabilità e strategie di persuasione*, *op. cit.* (note 4), chap. 5.

57 *Notes sur la botanique*, Archives de l'Académie des Sciences, Paris, Fonds Lavoisier, Dossier 284.

the hundreds of letters that she received throughout the first decades of the nineteenth century. These documents show that, especially at the beginning of the century, she kept acting as an intermediary between a selected group of scientists. One of them was obviously Rumford, who significantly benefited from Paulze-Lavoisier's European connections, at least for some time.⁵⁸ But other men, such as Marsilio Landriani, Marc-Auguste Pictet and Georges Cuvier, relied on her influence within the post-revolutionary institutions and repeatedly asked her to 'negotiate' various kinds of projects with the new political and scientific authorities.⁵⁹ Until 1836 these people met in her salon, as her friend François Guizot recalled some years later:

Every Monday she gave a dinner party, seldom to more than ten or twelve persons, and it was on this day that distinguished men, French or foreign, *habitués* of the house or casual guests, gathered at her house in a sort of momentary intimacy, promptly established, between such cultivated minds, by the pleasure of a serious or piquant conversation, always varied and polite, which Madame de Rumford herself enjoyed more than she cared for. On Tuesdays, she received all those who came to see her. On Fridays, there were crowded gatherings, composed of very different people, but all belonging to the best company of their kind, and all coming with great pleasure to hear the excellent music that the most famous artists and the most skilful amateurs were playing together.⁶⁰

However, despite Paulze-Lavoisier's efforts to build, as Guizot has put it, a '*souvenir du XVIII^e siècle*' in her own residence, many things had changed. One of these changes probably concerned her relationships with other women. Several women can be found in her 'new' network, which included among others the wives of her male correspondents and friends, such as Madame Berthollet, Madame de La Place and Lady Davy, in addition to several famous women authors, especially Germaine de Staël and Adeilaide Filleul.⁶¹ Some of these relationships were established during her collaboration with Lavoisier and strengthened after his death. This is the case, for example, with Albertine Necker de Saussure, with whom Paulze-Lavoisier kept in contact throughout the rest of her life. The constant exchange of information between Paulze-Lavoisier, Landriani, Pictet and Madame

58 Paulze-Lavoisier's support of Rumford's career can be gauged especially from the letters she exchanged with Pictet, in *Correspondance de Marc-Auguste Pictet (1725–1825). Partie scientifique et technique. Tome II: Les correspondants français* (ed. René Sigrist): https://www.academia.edu/25490398/Correspondance_de_Marc_Auguste_Pictet_1752_1825_Partie_scientifique_et_technique_t_II_Les_correspondants_français_version_mise_à_jour_, pp. 526–538.

59 As an example, see Landriani to Paulze-Lavoisier, 26 December 1802, MS 337, Collection Chazelles, Bibliothèque Municipale et Interuniversitaire de Clermont-Ferrand: '*À propos des sciences dites moi pourquoi ceux qui avaient l'honneur d'appartenir jadis à l'Académie des Sciences ont été exclus de l'Institut national qui au fond a remplacé l'ancienne académie. [...] Vous sentez bien que ce n'est pas à moi de faire cette réintégration dans mes anciens droits. Ayant beaucoup des mémoires intéressantes sur le métier je pourrai peut être en fournir pour former le remplissage d'un volume. J'abandonne à votre savoir faire cette négociation*' (my emphasis roman).

60 '*Tous les lundis elle donnait à dîner, rarement à plus de dix ou douze personnes, et c'était ce jour-là que les hommes distingués, français ou étrangers, habitués de la maison ou invités en passant, se réunissaient chez elle dans une sorte d'intimité momentanée, promptement établie, entre des esprits si cultivés, par le plaisir d'une conversation sérieuse ou piquante, toujours variée et polie, dont madame de Rumford jouissait elle-même plus qu'elle n'en prenait soin. Le mardi, elle recevait tous ceux qui venaient la voir. Pour le vendredi étaient les réunions nombreuses, composées de personnes fort diverses, mais appartenant toutes à la meilleure compagnie de leur sorte, et venant toutes avec un grand plaisir entendre là l'excellente musique qu'y faisaient ensemble les artistes les plus célèbres et les plus habiles amateurs.*' François Guizot, *Madame de Rumford (1758–1836)* (Imprimerie de Crapelet, Paris, 1841), pp. 30–31.

61 References to Madame Berthollet, Madame de La Place and Lady Davy are to be found in various letters received by Paulze-Lavoisier and kept in MSS 337, 338 and 339 in Collections Chazelles, Bibliothèque Municipale et Interuniversitaire de Clermont-Ferrand. A short letter by Germaine de Staël survived in MSS 474–475, Collection Chazelles et Dons divers; one from Adelaide Filleul is in MS 339, Collection Chazelles, same library.

Gautier about their common friend Albertine shows that she remained an important presence in Paulze-Lavoisier's network.⁶² Other relationships developed only at the beginning of the new century. Maria Edgeworth, for instance, is one of the women that Paulze-Lavoisier met during this second phase of her life. Their first meeting was in 1802 when Edgeworth, who was travelling through Europe with her family, stopped for some time in Paris. At that time she was already known in France as the author of a treatise on education and had close connections, among others, with the members of the Lunar Society, the famous British learned society based in Birmingham.⁶³ They also probably met in 1817, when Paulze-Lavoisier travelled to England and Scotland to see some friends, such as Charles Blagden, Humphry Davy and James Watt, and then again in 1820, when Edgeworth was hosted a second time in rue d'Anjou.⁶⁴

It is likely that these women participated in the social events organized by Paulze-Lavoisier, especially since 1804, when she moved together with Rumford into a more sumptuous *hôtel* in rue d'Anjou. Arranged with great care by Paulze-Lavoisier, the new house included not only a spacious salon, but also a *cabinet de physique* and a *galérie* for the display of Lavoisier's instruments (figure 5).⁶⁵ Collective experiments were organized from time to time in front of a gender-mixed audience. In 1806, for instance, Madame Gautier informed Pictet that Rumford would soon perform some experiments on the production of soap before his guests.⁶⁶ Other activities could also take place. Musical performances, for example, played an important part in these gatherings and involved women as well as men. Famous musicians and composers were often invited, even Paulze-Lavoisier herself would sometimes perform.⁶⁷ Other practices she probably liked to engage in with her female friends were walking in the huge garden that surrounded the house and admiring the exotic greenhouses.⁶⁸

62 See esp. Paulze-Lavoisier's correspondence with Pictet, in *Correspondance de Marc-Auguste Pictet, op. cit.* (note 58).

63 Among others, James Chandler, 'Edgeworth and the Lunar Enlightenment', *Eighteenth-cent. Stud.* 45 (1), 87–104 (2011).

64 I take this information from the letters Edgeworth sent to Paulze-Lavoisier between 1803 and 1825: see Edgeworth to Paulze-Lavoisier, 12 May 1803, 9 January 1820 and 1 August 1825, all kept in MS 474, Collection Chazelles et Dons divers, Bibliothèque Municipale et Interuniversitaire de Clermont-Ferrand.

65 'Plan d'une partie du 1er Etage de la maison de Madame de Rumford', box 27, fold h-1, #4712 Lavoisier Collection, Kroch Library, Cornell University, Ithaca, New York. The arrangement of Paulze-Lavoisier's new *hôtel* is discussed in several letters. See, among others, Blagden to Banks, 15 October 1804, in Neil Chambers (ed.), *Scientific correspondence of Sir Joseph Banks, 1765–1820*, vol. 5 (Pickering and Chatto, London, 2007), at p. 384: 'Since my last letter to you, I have received one from Paris, written by a particular Friend of Count R's, & who is also my friend. – It is dated the 15th of Sep^r & seems written chiefly to obviate the suspicions which the writer knew I entertained of the Count's conduct respecting the calumnies circulated at Paris. [...] The same friend continues thus: "Mad. Lavoisier vient d'acheter une maison, Rue d'Anjou, très jolie, avec un grand jardin. Ils vont s'occuper à l'arranger, et sûrement parfaitement bien. Il y a aura une Galerie pour les Intrumens de Physique. Je pense qu'il se marieront bientôt, je le suppose; il est possible qu'ils fassent un voyage cet hyver, mais c'est incertain".'

66 See Madeleine Gautier Delessert to Pictet, 27 November 1805 and 27 November 1806, in *Correspondance de Marc-Auguste Pictet, op. cit.* (note 58), p. 406: 'Je vis hier M. de Rumford, qui vint le matin me raconter tous les nouveaux embellissements qu'il fait à sa maison. Serre, double Galerie, Laboratoire, Cabinet de Physique, d'histoire naturelle, de musique, etc. etc. Il fait des expériences pour faire du savon à la vapeur, qui ont très bien réussi. Nous devons y assister un de ces jours.'

67 On Paulze-Lavoisier's music collection, see Rebecca Cypess, 'Madame Lavoisier's music collection: lessons from a private library of the nineteenth century', *Notes* 77, 224–252 (2020).

68 See Paulze-Lavoisier to Pictet, 7 July 1805, in *Correspondance de Marc-Auguste Pictet, op. cit.* (note 58), p. 351: 'Comme je désire extrêmement Monsieur que vous n'ayez aucun droit de vous plaindre de votre pupille, je vous dirai donc, puisque vous le désirez, que je suis occupée dans ce moment à faire bâtir ma galerie, qui sera de plain pied à la suite de mon appartement. Elle sera composée d'une première pièce, qui fera de bibliothèque et d'une seconde où sera placé mon Cabinet. L'exposition sera au midi. Au-dessous du Cabinet sera un laboratoire qui communiquera avec le Cabinet par un petit escalier. À côté du laboratoire et sous la bibliothèque sera une serre où j'aurai des fleurs l'hiver pour mes amis.' Several letters she received at the beginning of the nineteenth-century, and especially by de Candolle and Berthollet, concern the arrangement of her garden and her greenhouses.

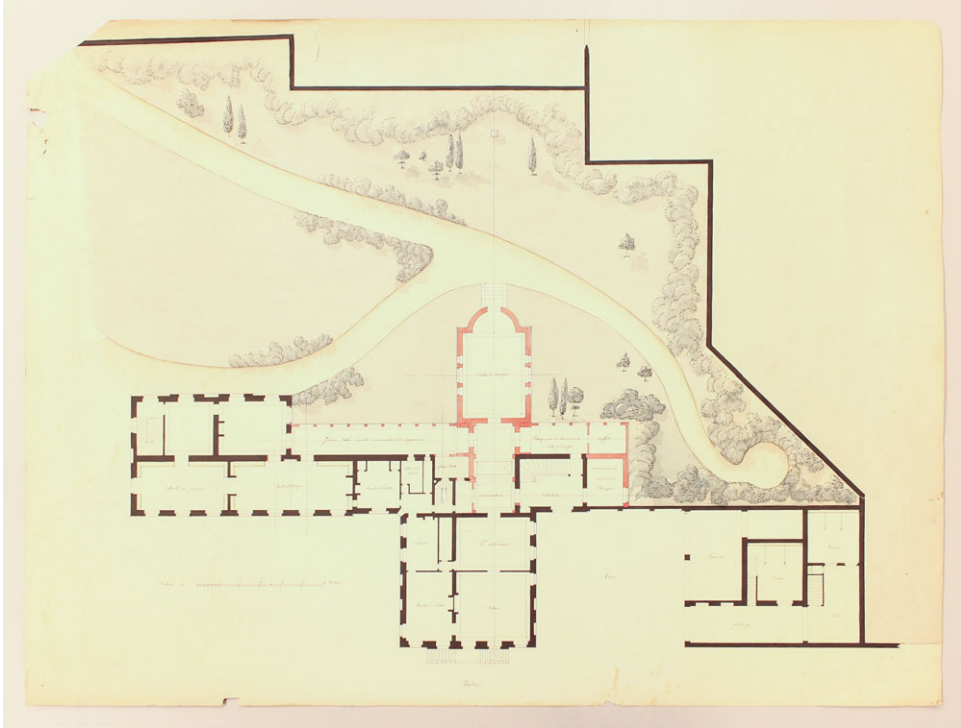


Figure 5. Paulze-Lavoisier's *hôtel* in rue d'Anjou, where she moved together with Rumford in 1804. 'Plan d'une partie du 1er Etage de la maison de Madame de Rumford', box 27, fold h-1, #4712, Lavoisier Collection, courtesy of Kroch Library, Cornell University, Ithaca, New York. (Online version in colour.)

Nonetheless, it is hard to find traces of new female collaborations in the sources dating to this later phase of her life. Altogether, her new relationships with women seem in fact to have been driven by friendship or intimate sentiments rather than by the purpose of working together. Both Albertine Necker de Saussure and Maria Edgeworth continued to write and publish their own works, in pedagogy as well as in other subjects. Paulze-Lavoisier certainly knew their books, which can be found in the manuscript catalogue of her library.⁶⁹ But none of their accomplishments appears to have been discussed in their surviving correspondence. In fact, while the exchanges with Necker de Saussure apparently dealt with gossip about their mutual friends, those with Edgeworth referred mostly to daily life and family routines. Writing from Ireland in May 1802, for example, Edgeworth sought Paulze-Lavoisier's attention by announcing a letter which was, in her own words, all 'about trifles'.⁷⁰ She then spoke at length about her children and complimented her

⁶⁹ The '*Catalogue des livres de la bibliothèque de Madame la comtesse de Rumford*', 2 vols, Bd. MS 44 ++, Kroch Library, Cornell University, #4712, Lavoisier Collection, in fact lists numerous works by women authors.

⁷⁰ 'I remember you once told me that you liked some of our English novel writers because they let you into the inside of families and do not disdain to enter into domestic details. I therefore am not afraid to write to you about trifles, which might seem beneath the attention of Madame Lavoisier [...].' Edgeworth to Paulze-Lavoisier, 12 May 1803, MS 474, Collection Chazelles et Dons divers, Bibliothèque Municipale et Interuniversitaire de Clermont-Ferrand.

friend for the reputation she was still enjoying in Edinburgh, thanks to her collaboration with Lavoisier.⁷¹ It should also be noted that no woman seems to be a beneficiary in the distribution of the *Mémoires de physique et de chimie*, which, as already mentioned, was an important project for Paulze-Lavoisier.

There may be several reasons behind these changes. As we have seen, the event of Lavoisier's death deeply influenced Paulze-Lavoisier's relationships, to the point that some of her closest acquaintances, such as Claudine Picardet among others, were now excluded from her *société*. But we can also ask to what extent these shifts reflected a broader cultural phenomenon. Historiography has often associated the post-revolutionary era with a general 'masculinization' of the 'public sphere' and notably of scientific knowledge and practice.⁷² The profound changes in the spaces of knowledge production, stemming from the creation of new, official institutions of scientific teaching and research, seem in fact to have reinforced women's marginalization.⁷³ It is thus possible that when the pursuit of scientific ambitions became more difficult for women, Paulze-Lavoisier sought her way by collaborating only, or mostly, with men. It may in fact be interesting to note that despite her undeniable scientific achievements, which to a certain extent were exceptional for a woman, Paulze-Lavoisier often appeared to be quite in tune with the gender norms of the time, sometimes going as far as to reaffirm some clichés about the limits of women's intellectual engagement. For instance, in 1804, speaking to Pictet about the sufferings of their common friend Germaine de Staël, who was by then one of the best-known women authors of the time, she observed: 'What a misfortune for everyone, but especially for a woman, to have an overactive mind!'⁷⁴ More research is evidently needed to better understand these claims and, more broadly, to examine Paulze-Lavoisier's attitude to other women in this latter phase without oversimplifications. To this end, it will be important to consider the variety of practices in which Paulze-Lavoisier engaged and which cannot be reduced, as has been often done, solely to her activity as a translator and illustrator of chemical texts. What this article should have made clear is that, by enlarging the focus from her published translations and illustrations to a set of documents whose main aim was not necessarily publication, such as laboratory notebooks, travel diaries and letters, a more complex picture can be drawn—one in which, alongside male *savants*, there is also room for women.

71 *Ibid.*: 'We had the pleasure of hearing your name Dear Madam, often at Edinburgh, from Sir James Hall, a gentleman, who was proud of the honor of having been in your society several years ago at Paris, at the time when the experiments on which the present system of chemistry, agriculture, and medicine are founded, were first tried at your house. Sir James begged that we should present his respects to you.'

72 Among others, see Goodman, *The republic of letters*, *op. cit.* (note 16), and Londa Schiebinger, *The mind has no sex? Women in the origins of modern science* (Harvard University Press, Cambridge, MA, 1991). See also Geneviève Fraisse, *Muse de la raison: Démocratie et exclusion des femmes en France* (Gallimard, Paris, 1995 [1st edn 1989]).

73 Among others, Alix Cooper, 'Home and households', in *The Cambridge history of science* (ed. Katharine Park and Lorraine Daston), pp. 224–237 (Cambridge University Press, Cambridge, 2006) and Donald L. Optiz, Staffan Bergwik and Brigitte Van Tiggelen (eds), *Domesticity in the making of modern science* (Palgrave Macmillan, Basingstoke, 2016), esp. the introduction.

74 'Quel malheur pour tout le monde mais surtout pour une femme d'avoir la tête trop active!' Paulze-Lavoisier to Pictet, 23 May 1804, in *Correspondance de Marc-Auguste Pictet*, *op. cit.* (note 58), p. 528. On the problem of being a woman author, also in connection with eighteenth-century medical views on women's minds, see, among others, Anne C. Vila, "'Ambiguous beings": marginality, melancholy, and the femme savante', in *Women, gender and enlightenment*, *op. cit.* (note 3), pp. 53–69.

DATA ACCESSIBILITY

This article has no additional data.

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