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Simone Dumont & Jean-Claude Pecker (eds.): Jérôme Lalande, *Mission à Berlin: Lettres à Jean III Bernoulli et à Elert Bode* (Paris: Vrin, 2014), 390 pp.

The letters exchanged between two of the most influential astronomers from the latter half of the eighteenth century, Joseph Jérôme Lefrançois de Lalande (1732–1807) and Johann III Bernoulli (1744–1807), constitute the bulk of this book. Lalande was a member of the Académie des Sciences and a professor at the Collège Royal (later known as Collège de France), editor of the official almanac *Connoissance des Tems*, responsible for the astronomy section of the *Journal des Sçavans*, author of the hugely successful textbook *Astronomie* (1764/71/92) and its sibling, the *Astronomie des dames* (1786), investigator of engineering projects such as the Canal du Midi, etc.; his influence in contemporary science can hardly be exaggerated. Simone Dumont, retired archivist at the Observatoire de Paris, and Jean-Claude Pecker, emeritus professor of astrophysics at the Collège de France, have studied the persona of Jérôme Lalande for many years. A biography written by Dumont, with a slender preface by Pecker, appeared on Vuibert in 2007. As a follow-up, a series of editions of source materials is being issued on Vrin – the *Lalandiana* – the second of which is centered around Lalande's relationship with astronomers in Berlin, primarily Johann III Bernoulli.

Johann (or Jean, John, Giovanni, Joannes) III Bernoulli grew up in Basel as the son of Johann II, brother of Jakob II and nephew of Daniel and Nicolaus II Bernoulli, all extremely influential mathematicians and natural scientists in their own right. After studies in Basel and Neuchâtel, Johann III was recruited to the Prussian Academy of Sciences as a 19-year old. Here, he obtained the title of Astronomer Royal. As such, he directed the *Berliner Sternwarte* from 1767 onwards. Johann III Bernoulli appears, however, to have paid little heed to the practical task of making observations. He produced only few original scientific articles, as compared to the more famous members of the Bernoulli family.[1] Instead he, like Lalande, set his mark as a disseminator of scientific news from all over Europe and beyond. His *Lettres Astronomiques* (1771), written during a Grand Tour of Britain and Europe in 1768/69, the journals *Recueil pour les Astronomes* (1771–6) and *Nouvelles Littéraires des divers pays* (1776–9) with the concomitant *Necrologues* and *Listes des astronomes actuellement vivans* are invaluable sources for the historian of science. From the early 1780s onwards, Johann III published more frequently in German and extended his range of interest far beyond astronomy proper. Particularly noteworthy are his multi-volume *Sammlung kurzer Reisebeschreibungen und anderer zur Erweiterung der Länder- und Menschenkenntniss dienender Nachrichten* (1781–6) and the *Leipziger Magazin für reine und angewandte Mathematik* (with K. F. Hindenburg, 1786–8). In short, Johann III Bernoulli, like Lalande, can be regarded as part of a new brand of highly devoted «science journalists».

[1] The most notable exception to this rule being his *Sexcentenary Table exhibiting, at sight, the result of any proportion, where the terms do not exceed 600 seconds or 10 minutes, with precepts and examples*. Published by order of the Commissioners of Longitude (London 1779).

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The book presents around 85 letters exchanged between Lalande and Bernoulli over a period spanning from March 1768 to June 1798.[2] Nearly all Johann III's letters are lost; the lone voice of Lalande offers interesting reading, nevertheless. And while the book focuses on the correspondence of these two, a far larger vista unfolds. Johann III is not the only Swiss character that figures in the letters. In Saint Petersburg, there are Leonhard and Johann Albrecht Euler of Basel stock; in Berlin, Johann Bernhard Merian and Johann Heinrich Lambert (born in Liestal and Mulhouse respectively); in Geneva, Pierre Prévost and Jacques-André Mallet; and so on.

The edited letters document how anonymous and undemanding servants, housekeepers, wives, and students did much of the daily work, while the honour accrued to the «great professor». In the Lalande-Bernoulli correspondence, these helping hands become visible every now and then. In his earliest preserved letter to Johann III, Lalande offers, for a reasonable price, to send him one of his assistants, a 17-year-old who has lived in his home for some years already and who – as Lalande blatantly confesses – «fait toutes mes observations et tous mes calculs» (p. 52). When this came to nothing, and Bernoulli's observations continued to be neglected, Lalande urged him to make better use of his wife, who could be taught to make reductions and calculations just like Madame Lepaute in Paris, for Bernoulli to inspect and draw his conclusions upon «à loisir» (p. 102).

Lalande never ceased to complain whenever his peers in Berlin wrote in German instead of Latin or French. «Je sens tous les jours la nécessité d'apprendre l'allemand comme vous le conseillez, mais le grand nombre de choses que je vois à faire en astronomie me détourne d'une entreprise difficile à mon âge de 47 ans», Lalande wrote in 1779 (p. 155). He was particularly piqued by the Prussian Academy's choice of publishing the *Berliner Astronomisches Jahrbuch* in German; «voulez-vous en priver de toute le reste de l'Europe», he quipped (p. 170). Even so, Lalande was constantly thirsting to learn more about what took place not only in Germany, but also in other areas outside his sphere of immediate contact. Thus, he urged Bernoulli to include in his publications reviews of books and other scientific news items from Sweden, Poland, Russia, and so on. In exchange, he fed Bernoulli with unofficial and often scandalous reports regarding the state of astronomy and the sciences in general in France, as well as Holland, Italy, and other places visited by Lalande during his travels. He even landed in Basel at one point, from where he sent regards to Johann III from his closest family members. When preparing his pioneering monograph on fluvial navigation, *Des Canaux de navigation et spécialement du Canal du Languedoc* (1778), Lalande used Bernoulli as a diplomat in assembling precious information regarding canals within Prussian territory that might well be seen as state secrets. Again, his neglect of the German language is apparent, for example when he grudgingly complains that local place names should *not* be written in Gothic handwriting, as the habit was, but spelled out in Latin capital characters.

The correspondence provides particularly intriguing glimpses of the economy of scientific publishing during the heyday of the *Lumières.* Bernoulli struggled to get into the French book

[2] There are also a handful of letters addressed to Johann III's father, Johann II Bernoulli, and to his uncle Daniel. A further batch of letters covers other correspondents, including Bernoulli's colleague Elert Bode in Berlin, but these have no direct relation to the Swiss Enlightenment and are therefore not discussed in this review.

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market and accomplish a decent sale of his publications. Although he wrote impeccable French, taxes on book imports, unreliable shipment routes, sluggish book vendors, and hesitant buyers ran counter to his plans. One might have expected Bernoulli's Parisian counterpart to be sceptical to such competition in an already limited market. They did, after all, deal with many of the same topics in their publications, but instead of competing rivals they ended up as close collaborators. The correspondence shows how Lalande went to great lengths in acting as a broker on behalf of Bernoulli. It was a question of *favour for favour*, as in this random example: «Votre Recueil pour les Astronomes me fera grand plaisir; je l'annoncerai dans le Journal des savants, dans la Connaissance des temps, dans mon *Astronomie*, dans les *Mémoires de l'Académie*, et je n'oubliera rien pour le répandre et le rendre utile en le faisant connaitre. Je vous fournirai certainement divers morceaux, si vous voulez bien les accepter: je serais honteux s'il paraissait un journal astronom[ique] où il n'y eut rien de moi. Je vous prie d'y annoncer d'avance ma seconde édition [de l'*Astronomie*] avec les tables nouvelles [...]» (p. 66).

Publishing a book did not necessarily imply that some printer/distributor/bookstore (often, one and the same person) took the financial responsibility, as in the case of an academic publication these days. The author instead incurred a debt, a debt that he could not be freed from until a critical proportion of the *tirage* had been sold. It was here that Lalande really went to great lengths on behalf of his Swiss colleague. In his letters, he often promises to talk to the publisher Madame Desaint, but the timing has to be the right one; he first has to make sure that his own debt is sufficiently reduced, and so on. The way in which Lalande and Bernoulli dealt with these delicate issues, not always without tension, serves as a corrective to any historian of science who might be tempted to disregard what it actually took to get a book published in former times. *Madame la veuve Desaint* may figure as the publisher of a book, but behind the scenes there were other agents taking personal, financial risks. These same agents would be likely to produce «scientific book reviews» and «citations» that hardly would have met today's impartiality standards.

Another intriguing aspect of the book is the portrayal it provides of characters on the fringes of the radical Enlightenment project, spearheaded by the *Encyclopédie* of d'Alembert and Diderot and followed by slightly less provocative endeavours such as the *Encyclopédie d'Yverdon*. Although hardly branded as Enlightenment hardliners in today's historiography, both Lalande and Bernoulli delivered articles to various encyclopaedias, apparently without ideologically charged hesitations. Bernoulli, upon drifting away from astronomy towards geography and other topics, published a French translation of a German book by Christian Wilhelm Dohm, *De la réforme politique des Juifs* (1782). As usual, he sent a copy to Lalande, who promptly promised to make a review of it in the *Journal des Sçavans*. This particular review was never published, however, probably because the book was censored in France, the editors remark (p. 177 n1).

Overall, the footnotes in Dumont and Pecker's edition are few and short. This is of course fine, especially in cases when an edition includes introductions, maps, tables, indices, or explicatory appendices. Dumont and Pecker, however, offer very little in terms of such apparatus. Instead, they rather oddly include two long texts on the efforts to measure the parallax of the moon, which brought Lalande to Berlin in the early 1750s, and the efforts to measure the parallax of the sun on the basis of the transit of Venus that took place in 1769, incidentally, when Bernoulli was in

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Paris during his Grand Tour. These texts, written by professor Pecker, are informative, stand-alone introductions to the calculatory implications of the two astronomical projects. It is, however, hard to justify their appearance in the book by the actual contents of the letters presented. In fact, the letters generally deal far more with «extra-scientific» matters such as book market issues, the practicalities of shipment across borders, exchange of private advice, slander directed at fellow astronomers, and so on. If anything, one would have expected a short essay on the discovery of Uranus in 1781, which is mentioned in numerous letters and which Lalande insisted to call *la planète d'Herschel* after its discoverer.

The book does include an index of names mentioned, which must have taken its toll to compile. Yet here too, the end product would have benefited from a more careful focus on what the reader actually needs to know, in order to understand why this or that person is mentioned in the correspondence, i.e. what relationship he or she had to either Lalande or Bernoulli (or both). An introduction summarizing the relationship between Lalande and Johann III Bernoulli would have been useful as well.

These minor criticisms should not detract from the obvious and lasting value in having so many original letters transcribed and presented in print. The more-than-average interested historian will always be able to glean other pieces of information than an editor, however conscientious, could possibly cover in his or her commentary. For example, it came as a surprise to this reviewer that Bernoulli in a (lost) letter to Lalande revealed that he meant to go to *Laponie* in order to observe the transit of Venus in 1769. Judging from Lalande's answer, the plans for such an expedition were thwarted for political reasons (p. 53). Bernoulli embarked instead upon his Grand Tour through Germany to the British Isles and France, immortalized in the *Lettres Astronomiques* (1771). Nowhere in the standard literature on the transits of Venus are Bernoulli's plans for a Lapland expedition mentioned. Where was he planning to go? To the Kola Peninsula, where his compatriots, Jacques-André Mallet and Jean-Louis Pictet of Geneva, attempted to observe the transit on behalf of the Imperial Academy of Sciences in Saint Petersburg? To the far north of the Swedish Realm, where, only some decades earlier, the late president of the Prussian Academy and close friend of Bernoulli's father Johann II, Pierre-Louis Moreau de Maupertuis, had measured the shape of the Earth and where Carl von Linné had collected plants that served as a basis for his new *Systema Naturae*? Or, did he wish to go even further north, to the Dano-Norwegian Lapland, where the Viennese Jesuit Maximilian Hell was to lead an expedition that was later described (by Lalande) as equally important to the calculation of the solar parallax as Captain Cook's simultaneous expedition to Tahiti? Dumont and Pecker appears not to have examined the case.

There are certain deeply rooted conventions in scholarly editing. For example, any reader familiar with the erudite editions issued by the *Bernoulli-Euler-Zentrum* (BEZ) in Basel can verify the editorial rules established for the edition of the works and the correspondence of the Bernoullis and the Eulers, both in print and online. The BEZ has long since decided not to include Johann III Bernoulli's correspondence in its multi-volume, long-running enterprise. The book by Dumont and Pecker is therefore a highly welcome addition to the scholarly literature. It is disappointing, however, to see that their edition does not meet basic editorial standards.

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Sometimes, explanatory words appear to have been added in *italics*, at other times, within regular (parentheses), at yet other occasions, within [brackets]; even the odd footnote deals with such issues as well. These inconsistencies are all the more confusing when taking into account that the autograph letters themselves contain both parentheses and italics. It is sometimes hard to decipher whether one is dealing with the wording and punctuation of the actual letter or with corrections/additions by the editors. Only a small amount of additional copy-editing would have been required in order to rid the edition of such ambiguity. Even so, the book does convey new knowledge about the informal ways in which two highly productive *savants* operated from each side of the Germano-Francophone divide, with the polyglot Johann III Bernoulli as mediator and the powerful Jérôme de Lalande as broker.

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