

# A Women's Scientific Society in the West

## The Late Eighteenth-Century Assimilation of Science

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### ABSTRACT

The Natuurkundig Genootschap der Dames (Women's Society for Natural Knowledge), formally established by and for women, met regularly from 1785 to 1881 and sporadically until 1887. It challenges our stereotypes both of women and the physical sciences during the eighteenth century and of the intellectual interests open to women in the early European republics. This essay aims not simply to identify the society and its members but to describe their pursuits and consider what their story adds to the history of Western science. What does this society's existence tell us about the relationship between women and early science in general and about science and society in the Dutch setting in particular? Science and gender look rather different when observed through the activities of the immensely prosperous women of Middelburg, citizens of one of the most highly literate Western countries. The elite lives of the first-generation members of the women's society also offer us a glimpse into the early domestication of science, a process vital to its acceptance and assimilation.

**F**EW OUTSIDE THE NETHERLANDS know about the existence of the scientific society described in this essay or about the late eighteenth-century lives of the women who belonged to it. In the international literature on women and science we find no sustained discussion of what was—as far as we now know—the first women's scientific

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*Clasina Radermacher-De Kokelaer (1734–1796), one of the women who participated in the Natuurkundig Genootschap der Dames and the wife of its second chairman, Daniel Radermacher. Painting by Jan Appelius. Courtesy of the Amsterdams Historisch Museum.*

society in the Western world. Formally established by and for women, it met regularly from 1785 to 1881, finally closing its doors in 1887.<sup>1</sup> Founded in the town of Middelburg, on the southern Dutch island of Walcheren in the province of Zeeland, this society challenges our stereotypes both of women and the physical sciences during the eighteenth century and of the intellectual interests open to women in the early European republics. Our task in this essay is not simply to describe the society and identify its members—although that has been no easy matter—but also to recount their pursuits, generally in applied mechanics and electricity, and consider what their story adds to the history of Western science. We want also to ask what the society's existence tells us about the relationship between women and early science in general. Does it modify accounts of the subject in the existing literature? More precisely, what does the *Natuurkundig Genootschap der Dames* (Women's Society for Natural Knowledge) tell us about science and society in the particularity of the Dutch setting, about science and gender in relation to the assimilation of science in one of the more highly literate Western countries? To the extent that they can be pieced together, the elite lives of the first-generation members of the women's society also offer us a glimpse into the early domestication of science, a process that we will argue was vital to its acceptance and assimilation.

Our story is complicated—though not impossibly so—by the bombing of Middelburg by the Germans in 1940 and the concomitant loss of significant archival materials. Owing to the randomness of Nazi bombs, we have had to piece together the history of the women's society in part by bringing to our assistance the records of its fraternal counterpart, the *Natuurkundig Gezelschap*, formally founded in Middelburg in 1780. As an informal circle, however, this men's society had existed since 1734.<sup>2</sup> The two societies shared a good deal, but they appear to have met separately for the most part. There were a few Dutch societies of the period where men and women met together; the separateness of the scientific societies, on the other hand, suggests their educative purpose and mimics the gender separation that was the norm in schools throughout Europe.<sup>3</sup> With its long tradition of formal and informal social clubs and societies that dotted the landscape of every town from Alkmaar to Zutphen, early modern Dutch life probably offered women more chances to participate in the loosely organized and informal circles of friends with common scientific interests (*gezelschappen* or *collegies*) than could be found in the highly regulated and institutionalized societies (*genootschappen*) that replaced them in the course of the eighteenth century.<sup>4</sup> By the 1770s almost every stratum of educated male society can be found

<sup>1</sup> E. Cohen and W. A. T. Cohen-De Meester, "Het Natuurkundig Genootschap der Dames te Middelburg (1785–1887)," *Chemisch Weekblad*, 1942, 39:242–246. See also Claudette Baar-De Weerd, "Het Natuurkundig Genootschap der Dames te Middelburg (1785–1887)," *Zeeland*, 2001, 10:81–90. While a more sustained treatment, the latter essay does not address the larger historiography about women and science.

<sup>2</sup> D. Schoute, "De Geschiedenis van het Natuurkundig Gezelschap te Middelburg," *Archief: Vroege en Latere Mededelingen Voornamelijk in Betrekking tot Zeeland, Uitgegeven door het Zeeuwsch Genootschap der Wetenschappen te Middelburg*, 1923, pp. 1–34; W. S. S. van Benthem Jutting, "Lotgevallen van het Natuurkundig Gezelschap te Middelburg in de 19e en 20e eeuw," *Archief: Mededelingen van het Koninklijk Zeeuwsch Genootschap der Wetenschappen*, 1972–1973, pp. 15–42; and Huib J. Zuidervaart, *Van "konstgenoten" en hemelse fenomenen: Nederlandse sterrenkunde in de achttiende eeuw* (Rotterdam: Erasmus, 1999), pp. 392–395 (on the informal circle).

<sup>3</sup> Along with Bordeaux, The Hague possessed one of the earliest known Masonic lodges run by both men and women. See Margaret C. Jacob, *Living the Enlightenment: Freemasonry and Politics in Eighteenth-Century Europe* (New York: Oxford Univ. Press, 1991), Ch. 5. For Bordeaux see the newly returned archives from Moscow, now at the Library of the Grand Orient, rue Cadet, Paris, MS 113.2.96, records of the Loge Anglaise, 1732–1817. For another mixed Dutch society in 1752, the *Ordre de l'Amitié* (imitative of Masonic forms), see Gemeente Archief, Amsterdam, MS U.00.1736; this society had a grand master and grand mistress.

<sup>4</sup> Thus Zuidervaart mentions the participation of Anna van Hannover, wife of stadtholder Willem IV, in dis-

represented in one or another of the official societies dedicated to the sciences, from the stadtholder to the *burgermeester* of Amsterdam, ministers of the various Protestant churches, military personnel, and practitioners of the ubiquitous liberal professions. In addition, foreign contacts were maintained and prominent natural philosophers like the controversial Unitarian Joseph Priestley admitted to membership.<sup>5</sup> If there can be said to have been a single ideology that dominated the approach to the sciences, including medicine, in the Dutch eighteenth century, it was Baconianism. Dutch scientific studies worked remarkably well in the service of an ideology of “usefulness,” and by the second half of the eighteenth century “het Nut,” the useful, had become a clarion call for all who professed an interest in reforming the republic.<sup>6</sup> Bacon’s writings also sanctioned the study of God’s work as a complement to immersion in his Word. Yet in general, and in the areas of study pursued, the Dutch Enlightenment societies look much like their literary and philosophical counterparts elsewhere on the Continent. But no other place, as far as we now know, broke the gender barrier and established a scientific society for women.<sup>7</sup>

We tackle the questions before us about gender and science armed with a variety of diverse archival resources from the Netherlands and by listening to the voices of both the women and men involved in the early years of the *Natuurkundig Genootschap*. We can hear the women only indirectly. There are no printed minutes from their meetings, no surviving memoirs. Thus what the men had to say at the women’s proceedings becomes all the more important, and so too does the evidence that their scientific lectures appear to have been not that different from what was being offered in other, entirely masculine,

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cussions of Voltaire’s *Elemens de la philosophie de Neuton* (1738) in Dutch courtly circles. *Zuidervaart* also implies the presence of the merchant’s daughter, and later poet, Petronella Johanna de Timmerman in the more common circle of Leonardus Stocke and Jan de Munck in Middelburg and of the poet Christina Leonora de Neufville in the science group surrounding Jan van Dam in Amsterdam, both in the 1740s. He states with certainty the membership of Maria Buck-Sixti, wife of the local mintmaster, in the *Genootschap Physica* in Dordrecht. See *Zuidervaart*, “*Konstgenoten*” en *hemelse fenomenen* (cit. n. 2), pp. 92–93, 323–325, 612, 620, 622. On other Dutch clubs and societies in the early modern period see Willem Frijhoff and Marijke Spies, *1650: Bevochten eendracht* (Nederlandse Cultuur in Europese Context) (The Hague: SDU, 1999), pp. 216–218; and Jori Zijlmans, *Vriendenkringen in de zeventiende eeuw: Verenigingsvormen van het informele culturele leven te Rotterdam* (The Hague: SDU, 1999). For the eighteenth century see Joost Kloek and Wijnand Mijnhardt, *1800: Blauwdrukken voor een samenleving* (Nederlandse Cultuur en Europese Context) (The Hague: SDU, 2001), pp. 103–126. The pioneering work in the field of Dutch sociability is Mijnhardt, *Tot heil van ’t mensdom: Culturele genootschappen in Nederland, 1750–1815* (Amsterdam: Rodopi, 1987), esp. p. 155 on the women’s society.

<sup>5</sup> For the membership of the first national society see *Verhandelingen Uitgegeeven door de Hollandse Maatschappij der Wetenschappen, te Haarlem*, Vol. 1, 1754. There were forty-seven founding members; the manuscripts of the society are housed at its headquarters in Haarlem. These note the admission of Joseph Priestley in 1787—MSS Notulen, 1781–94—and the resignation of one member as a result. It is made explicit that he is being admitted not for his theology but for his contributions to chemistry. The society has now celebrated its 250th anniversary and “Koninklijke” has been added to its title.

<sup>6</sup> On Bacon and the leader of the main society of the period see R. J. Forbes, ed., *Martinus van Marum: Life and Work* (Haarlem: Hollandsche Maatschappij der Wetenschappen, 1969), p. 35. On “usefulness” see Mijnhardt, *Tot heil van ’t mensdom* (cit. n. 4), Ch. 6; and Lissa Roberts, “Going Dutch: Situating Science in the Dutch Enlightenment,” in *The Sciences in Enlightened Europe*, ed. William Clark, Jan Golinski, and Simon Schaffer (Chicago/London: Univ. Chicago Press, 1999), pp. 350–388. Among the earliest scientific lectures given for the public by D. G. Fahrenheit in 1718 the theme of usefulness is already prominent; see University Library, Leiden, BPL 772, fols. 88–98. Mathematics needed for commerce were also taught to the young Prince of Orange; see Royal Library, The Hague, MS 75 J 63, dated 1759 (when he was eleven).

<sup>7</sup> The aristocratic ladies of the exclusively female *Tugendliche Gesellschaft* that existed in the Protestant part of Germany from 1619 until 1652 did not aim for an education in the natural sciences but focused on the practice and propagation of Christian and civil virtues. See Klaus Conermann, “Die Tugendliche Gesellschaft und ihr Verhältnis zur Fruchtbringende Gesellschaft: Sittenzucht, Gesellschaftsidee und Akademiegedanke zwischen Renaissance und Aufklärung,” in *Sprachgesellschaften—Galante Poetinnen*, ed. Erika A. Metzger and Richard E. Schade (Amsterdam/Atlanta, Ga.: Rodopi, 1989), pp. 513–626.

venues. At the societies for men, lectures and papers on free will and natural religion, or physico-theology, were interspersed with discussions of female anatomy, the issue of increasing or supplementing mothers' milk, poetry, electricity, and inoculation. In 1765 the leading Haarlem society—roughly the national equivalent of the Royal Society—devoted an entire volume of its proceedings to the Rousseauian question of how the mind and heart of a child should be formed so that “he may become a happy person.”<sup>8</sup> There is no evidence to suggest that any attention was paid to steam engines at the women's society, but at the time the modern steam engine of Boulton & Watt was a rare and exotic topic of conversation in men's groups as well.<sup>9</sup> After 1800 schoolbooks in science intended for young boys routinely offered physico-theological arguments about learning of the Creator through his creation, a theme already popular in the work of male and female Dutch poets in the preceding decades. By the 1820s the same message was given to girls as well.<sup>10</sup> Although segregated in its presentation, scientific culture offered at least a few polite Dutch men and women of the period, as well as their children and grandchildren, a reasonably common vocabulary.

#### WOMEN IN THE HISTORY OF SCIENCE: A CHANGE IN PERSPECTIVE

Our expectations, prior to our arrival as the *Natuurkundig Genootschap's* uninvited guests and witnesses, begin with what we have been told by the existing scholarly literature about science and women. It is a rather grim story, characterized, as Margaret Rossiter put it in a groundbreaking book, by “struggles and strategies.”<sup>11</sup> Gender hierarchy and just plain misogyny can be found in abundance. Male students of natural philosophy—as science was then called—could be as biased as any other men. Since the emergence of experimental philosophy in the seventeenth century, images of “noble” masculinity were common tropes for the acceptance, prestige, and identity of a new intellectual practice that still had to prove itself in the face of an established classical and largely clerical culture. Indeed, it

<sup>8</sup> See *Verh. Holl. Maatsch. Wet. Haarlem*, Vols. 1 and 2, 1754; Vol. 4, 1758 (for the piece on religion, by C. C. H. van der Aa); Vol. 7, 1762 (mother's milk); Vol. 9, 1764 (“happy person”; the phrase is “gelukkig Mensch,” and answers are given in papers published in both French and Dutch). Topics perhaps not considered at the women's meetings in Middelburg include the military application of mathematics and the best, least expensive means of raising the banks of the Haarlem shoreline.

<sup>9</sup> Johann van Liender to James Watt, 21 Oct. 1790, Birmingham City Library, Boulton & Watt MSS, Box 36/17. Regarding lecturing in Rotterdam on his steam engine, Van Liender advised Watt to “give as much explanation as possible and a great deal more even as you did to that of the Batavian Society's Engine because everyone there shall understand so little of the matter.”

<sup>10</sup> For instance, Catharina Pietersdr. de Wilde (1688–1766), Petronella Johanna de Timmerman (1724–1786), Betje Wolff (1738–1804), and Petronella Moens (1762–1843) all wrote on physico-theological topics. On the work of these and many other Dutch female poets see Riet Schenkeveld–Van der Dussen, ed., *Met en zonder lauwerkrans: Schrijvende vrouwen uit de vroegmoderne tijd 1550–1850: Van Anna Bijns tot Elise van Calcar* (Amsterdam: Amsterdam Univ. Press, 1997). For textbooks see [Anon.], *Natuurkundig schoolboek, uitgegeven door de Bataafsche Maatschappij tot Nut van 't Algemeen*, 2nd ed. (Leiden/Deventer/Utrecht, 1804) (editions appeared from 1800 up to 1828). By the 1830s the texts were much more gender neutral: see Joh. Buys, *Volksnatuurkunde, of onderwijs in de natuurkunde . . . tweede druk* (Amsterdam, 1831); and *Levensschetsen van vaderlandsche mannen en vrouwen, uit de zuidelijke provinciën: Een schoolboek, uitgegeven door de Maatschappij tot Nut van 't Algemeen* (Leiden/Deventer/Groningen: Du Mortier, 1828).

<sup>11</sup> Margaret W. Rossiter, *Women Scientists in America: Struggles and Strategies to 1940* (Baltimore: Johns Hopkins Univ. Press, 1980). For surveys see Ludmilla Jordanova, “Gender and the Historiography of Science,” *British Journal for the History of Science*, 1993, 26:469–483; Sally Gregory Kohlstedt, “Women in the History of Science: An Ambiguous Place,” *Osiris*, 2nd Ser., 1995, 10:39–58; Angelika Ebrecht et al., eds., *Gelehrsamkeit und kulturelle Emanzipation* (Querelles: Jahrbuch für Frauenforschung) (Stuttgart/Weimar: Metzler, 1996); Kohlstedt and Helen E. Longino, eds., *Women, Gender, and Science: New Directions*, *Osiris*, 2nd Ser. 1997, 12; and Ilana Löwy, “Gender and Science,” *Gender and History*, 1999, 11:514–527.

has even been argued that science by its very essence required the exclusion of women. Further scholarly attention that is less essentialist in emphasis has countered the relative silence of women in the practice of science with biographies of famous women who pursued natural philosophy in the seventeenth and eighteenth centuries. Significant figures like Margaret Cavendish in the seventeenth century and the marquise du Châtelet in the eighteenth century figure prominently in the biographical approach, as do other famous women who found a place in the various branches of science as they emerged or matured in the nineteenth and twentieth centuries. Here, as Londa Schiebinger notes, the work is on exceptional women, a variation on the theme of “the great” in history. And as she further comments, more needs to be done on ordinary women in technical and scientific settings, from craft guilds to the sociability around science that came to prominence during the eighteenth century.<sup>12</sup> But the gap between the great and the ordinary, between the center and the periphery, may not be as wide as has been imagined. It should be noted that, a full generation after her death, the scientifically minded women of Middelburg took du Châtelet as one of their inspirations. With regard to the practice of science, our studies—until very recently—may safely have situated women at the periphery, with the center elsewhere. But in fixing our gaze just about anywhere except on the home or the salon, we may be missing an important aspect of how science achieved paradigmatic status among Western knowledge systems. The absence of knowledge about women as participants in scientific culture is hardly surprising, given that almost every formal organization, from the Royal Society in London to the various Continental academies or *genootschappen*, excluded women—if not formally then certainly in practice—until well into the twentieth century. The only exceptions were made by a few academies on the periphery—provincial organizations or less prestigious academies in European cities, Bologna being the best-known example.<sup>13</sup>

Shifting our attention from the great and exceptional, and focusing instead on the equally important issue of the distribution and absorption of scientific knowledge, puts the women of Middelburg at the center of a major intellectual transformation. They help us to understand another reason for the deep embedding of science in Western culture; moreover, knowing about their activities augments the findings of other historians—Patricia Phillips, Ann Shteir, and Geoffrey Sutton. All describe women’s “informal” participation in and appreciation of science.<sup>14</sup> Women played their roles in the Parisian salons and presented

<sup>12</sup> Londa Schiebinger, “The History and Philosophy of Women in Science: A Review Essay,” *Signs*, 1987, 12:305–332. See also her essay on the exclusion of Maria Winkelmann from the Berlin Academy in 1712: Schiebinger, “Maria Winkelmann at the Berlin Academy: A Turning Point for Women in Science,” *Isis*, 1987, 78:174–200. Regarding “noble” masculinity see Mary Terrall, “Gendered Spaces, Gendered Audiences: Inside and Outside the Paris Academy of Sciences,” *Configurations*, 1995, 12:207–232; and Terrall, “Heroic Narratives of Quest and Discovery,” *ibid.*, 1998, 6:223–242. On the notion that science required the exclusion of women see Genevieve Fraisse, *Reason’s Muse: Sexual Difference and the Birth of Democracy* (Chicago: Univ. Chicago Press, 1994).

<sup>13</sup> A groundbreaking essay on the scientific periphery populated by women is Sally Gregory Kohlstedt, “In from the Periphery: American Women in Science, 1830–1880,” *Signs*, 1978, 4:81–96. More recent publications on the home as an early modern locus of scientific production include Deborah E. Harkness, “Managing an Experimental Household: The Dees of Mortlake and the Practice of Natural Philosophy,” *Isis*, 1997, 88:247–262; and Debra Lindsay, “Intimate Inmates: Wives, Households, and Science in Nineteenth-Century America,” *ibid.*, 1998, 89:631–652. On women in provincial and less prestigious academies see Londa Schiebinger, *The Mind Has No Sex? Women in the Origins of Modern Science* (Cambridge, Mass./London: Harvard Univ. Press, 1989), pp. 12–30; and Paula Findlen, “A Forgotten Newtonian: Women and Science in the Italian Provinces,” in *Sciences in Enlightened Europe*, ed. Clark et al. (cit. n. 6), pp. 313–349.

<sup>14</sup> Patricia Phillips, *The Scientific Lady: A Social History of Women’s Scientific Interests, 1520–1918* (London: Weidenfeld & Nicholson, 1990); Ann B. Shteir, *Cultivating Women, Cultivating Science: Flora’s Daughters and*

themselves at public lectures and informal gatherings of friends where the newest scientific insights were discussed. They wrote many popular introductory books and developed an active interest in science—as “amateurs.” When we stop concentrating on great scientific events so as to refocus our attention on science in local contexts and daily practices, thus responding to the appeals of Mary Terrall and Ludmilla Jordanova—and simultaneously shake off the somewhat anachronistic division between professional and popular science—we might be able to change the perspective on gender in the history of science. Even the term “amateur” is an anachronism. When the young James Watt, as an apprentice to a London clockmaker (where he first cut out the numbers for the faces), took lessons in mechanics from a tutor, what label do we give him? When Isaac Newton cut up an eel in the kitchen of Trinity College so as to watch whatever, do we say that he was in his laboratory?<sup>15</sup> The term “amateur” confounds our understanding of the thousands of men and—we can now say with certainty—women who paid to be tutored in science, who bought and read natural philosophical works, and, in the case of *les Dames* of Middelburg, purchased scientific equipment, gave books on science to their relatives, and, in one place over a long period of time, made science integral to their domestic lives.

The women of Middelburg strike the historical imagination informed by gender studies as almost a fantasy come true. What if there had been such local societies everywhere in eighteenth- and nineteenth-century Europe and America? The egregious gender imbalances in professional science that have been addressed only in the last twenty or so years might never have been so severe.<sup>16</sup> The meetings of perhaps two hundred women (see the Appendix for the seventy identified members) over roughly a hundred years, each winter season on a biweekly basis, confirm the distinctiveness granted science in Western domestic and sociable culture from the eighteenth century onward. Such an important cultural issue—illumination of the ways and means by which science was assimilated—may be an unfair burden to place on the genteel ladies of Middelburg. But in the context of our present-day knowledge they are unique, and so burden them we must.

#### WHO THEY WERE: THE WOMEN OF THE NATUURKUNDIG GENOOTSCHAP

Our first task is to attempt to know who these women were and why they evinced such a remarkable interest in nature and natural knowledge. The forty-four women who formed the society in 1785 belonged to the social elite of the shipping port of Middelburg, a town that at the time had approximately twenty thousand inhabitants (in a country of about two million) and was the administrative capital of Zeeland, a coastal province second in importance only to Holland (and perhaps Utrecht) among the seven provinces that formed the Dutch Republic. No longer on an island, Middelburg is now about two hours by train

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*Botany in England, 1760–1860* (Baltimore: Johns Hopkins Univ. Press, 1996); Barbara T. Gates and Shteir, eds., *Natural Eloquence: Women Reinscribe Science* (Madison/London: Univ. Wisconsin Press, 1997); and Geoffrey V. Sutton, *Science for a Polite Society: Gender, Culture, and the Demonstration of the Enlightenment* (Boulder, Colo./Oxford: Westview, 1995). See also Lynette Hunter and Sarah Hutton, eds., *Women, Science, and Medicine, 1500–1700: Mothers and Sisters of the Royal Academy* (Stroud, Gloucestershire: Sutton, 1997).

<sup>15</sup> Jordanova, “Gender and the Historiography of Science” (cit. n. 11), pp. 472, 477–478; and Terrall, “Heroic Narratives” (cit. n. 12), p. 241. In the Dutch Republic of the eighteenth century the division between professional and popular science seems to make even less sense than elsewhere. See Lissa Roberts, “Science Becomes Electric: Dutch Interaction with the Electrical Machine during the Eighteenth Century,” *Isis*, 1999, 90:680–714, esp. pp. 681–687, 710–713. The story about Newton comes from the Stukeley MSS at Freemasons’ Hall, London, MS 1130, fol. 171.

<sup>16</sup> Londa Schiebinger, *Has Feminism Changed Science?* (Cambridge, Mass./London: Harvard Univ. Press, 1999).

from Amsterdam. In 1785, however, the island of Walcheren had not been empoldered. Two days' journey by land and sea landed the traveler in Amsterdam; one day was needed to reach The Hague and its court.<sup>17</sup> Middelburg was remote from other centers of culture and power, but no more so than most provincial settings a hundred miles from London or Paris.

Like that in other Dutch towns and cities, and perhaps even more so, Middelburg's elite was both tight and securely placed, although no more "provincial" than their counterparts in Bristol or Bordeaux. The families of the *Natuurkundig Genootschap's* women were intimately related to each other through marriages over several generations, and their names would have been at the top of any local social register: the Boddaert, Van den Brande, Van Citters, Hurgronje, Huijssen van Kattendijke, Paspoort, Van de Perre, Pous, Radermacher, Schorer, Steengracht, Thibaut, and Van Visvliet families were only the most important stars in the firmament of the local patriciate that controlled the town council, the provincial estates of Zeeland, and the local boards of the *Verenigde Oost-Indische Compagnie* (VOC) and the *West-Indische Compagnie* (WIC), the famous Dutch trading companies.<sup>18</sup> The names of Radermacher and Van de Perre made it onto the international stage. Daniel Radermacher, one of the chairmen and lecturers of the Middelburg women, traveled in enlightened and literary circles. So too did Paulus van de Perre, the husband of one of the members and a visitor to Paris and the astronomer J. Le François de Lalande. In 1782 he carried a letter from the prominent Dutch natural philosopher J. H. van Swinden, who ordered astronomical instruments for the collection of Johan Adriaen van de Perre, brother of Paulus and the first chairman of the women's society in Middelburg. Radermacher also belonged to the highest literary circle in the Republic, that around the novelist Betje Wolff-Bekker.<sup>19</sup>

The Middelburg women thus came from regent families, originally with backgrounds in international commerce, that had gone on to occupy influential positions in the Zeeland administration for more than a century. A few descended from French Huguenots that immigrated to the Netherlands in the sixteenth and seventeenth centuries. Many of these women, but not all, had husbands, fathers, or brothers who had already entered or were soon to enter the fraternal *Natuurkundig Gezelschap*. At the moment of their enlistment in the study of science, the average age of these women was thirty-six years, ranging between eighteen and fifty-nine.<sup>20</sup> Twenty-four of them were married, five widowed, and fifteen still unmarried. Only four would never marry. Their family money was invested in trading vessels, colonial plantations, the slave trade, stocks, securities, public loans, and, sometimes, property in Zeeland itself. In addition to several houses in the city, most of the

<sup>17</sup> During the first years the membership of the *Natuurkundig Genootschap* was officially restricted to forty people, but the membership list that was printed with the society's regulations included also the names of two extraordinary members, plus one deceased and one supernumerary member. On traveling to and from Middelburg and Zeeland see Jan de Vries, *Barges and Capitalism: Passenger Transportation in the Dutch Economy, 1632–1839* (Utrecht: HES, 1981), pp. 51–81, 199, 333. See also F. C. Hoogvliet, "Zeeuwisch Reisje," *Arch. Zeeuwisch Genootsch. Wet.*, 1980, pp. 134–149.

<sup>18</sup> W. S. Unger, *De geschiedenis van Middelburg in omtrek*, 2nd ed. (Middelburg: Zeeuwisch Genootschap der Wetenschappen, 1966), p. 40; P. W. Synke, "Middelburg in woeling en strijd rondom 1787," *Arch. Zeeuwisch Genootsch. Wet.*, 1984, pp. 50–88, esp. p. 62; and Eric van der Doe and Arnold Wiggers, "De Kamer Zeeland van de V.O.C. als werkgeefster: Enige opmerkingen over haar personeel aan de wal in de tweede helft van de achttiende eeuw," *Zeeuws Tijdschrift*, 1987, 37:107–113, esp. pp. 107–109.

<sup>19</sup> For an overview of these circles see J. J. Kloek *et al.*, "Literaire genootschappen 1748–1800," *Documentatieblad Werkgroep Achttiende Eeuw*, 1983, 15–16:21–90. See the poems Wolff sent to Radermacher in 1769, preserved in the Zeeuws Archief, Middelburg, Familie-Archief Schorer, no. 512.

<sup>20</sup> This information is available on forty of the forty-four original members.

women's families owned a countryseat on the island of Walcheren, and some of them had managed to buy a landed estate with an accompanying title. There they spent part of their summers, enjoying the pleasures of country living—including the opportunity to cultivate their interest in natural history, horticulture, and architecture from the Orient by planting exotic species, filling greenhouses, and fashioning little Chinese temples in their gardens.<sup>21</sup> In wintertime, however, they usually returned to the houses in Middelburg that remained their home base. These families were thus part of the peculiarly Dutch social structure, an aristocracy that was more urban than rural, more capitalized than landed, but that enjoyed a status and wealth comparable to their French or English counterparts with larger estates.

In contrast to the primogeniture that prevailed across the Channel, in these Dutch circles daughters, sisters, granddaughters, and nieces usually inherited capital near or equal to that of their male relatives. Although we could trace the personal estates of only a quarter of the Genootschap's first-generation members, the information reveals them to have been very rich indeed. The inheritances left by these women amounted to an average of 276,946 Dutch guilders (*f*). For its equivalent today we should multiply this sum by thirty or forty. Hence according to contemporary Euro-American standards a number of the women would have been multimillionaires. For participation in the Natuurkundig Genootschap, however, their social capital was more important than their money. We know that at least two of the members had serious financial problems: during more than ten years one of them, Lady Anna van Citters, had to call on a family trust because she had trouble with her cash flow, and one of the others, Clasina Radermacher–De Kokelaer (see Frontispiece), owed her husband *f*27,654 upon her death in 1796.<sup>22</sup> Nevertheless, both these women possessed such superb social connections that they easily survived the balloting for admission to membership. Adhering to practices established in the learned societies by and for men, these women became voters in their small polity.

The Genootschap's women were truly among the “first born” of Middelburg, and the membership list of 1785 rightly addressed them as ladies. But a handful—four—of the first women members escape this rather tight profile. They did not descend from aristocratic families but instead were the daughters and wives of ministers appointed by the Dutch Reformed Church in Middelburg. The social status of ministers was relatively high in Calvinist Zeeland, and the province had been strongly influenced by successive Protestant Reform movements. Since the early seventeenth century pietist ideas connected to the Dutch Nadere Reformatie (Further Reformation) had secured a firm footing.<sup>23</sup> Instead of limiting divine worship to official services, followers of this movement believed in daily

<sup>21</sup> H. W. M. van der Wyck, *Het arkadisch Walcheren, getekend door Jan Arends 1770–1790* (Alphen aan den Rijn: Stichting Nederlandse Buitenplaatsen en Historische Landschappen; Canaletto/Repro-Holland, 2001); and Martin van den Broeke, *Jan Arends: Buitenplaatsen op Walcheren* (Alphen aan den Rijn: Stichting Nederlandse Buitenplaatsen en Historische Landschappen; Canaletto/Repro-Holland, 2001).

<sup>22</sup> Exact information is available on twelve personal estates of the first-generation members. These varied—after deduction of outstanding accounts—from *f*0 to *f*1,500,246. For several other members we have information on the amount of money they inherited when their parents died or about the value of their and their husbands' combined estates; these figures affirm that personal capital of this extent was not exceptional among these women. A century later the women of the Natuurkundig Genootschap would still be prospering financially: the last-generation members, on the 1887 membership list, left an average estate of *f*224,548, ranging from *f*678 to *f*669,031 (information on twelve of the seventeen last registered members). See the Appendix. The information on Anna van Citters comes from a letter from Jonkheer Lodewijk van Citters, present director and administrator of the family trust, 9 Dec 2000, whom we wish to thank for this information; that on Clasina Radermacher–De Kokelaer is in the Zeeuws Archief, Familie-Archief Schorer, no. 564.

<sup>23</sup> W. J. op 't Hof, “De Nadere Reformatie in Zeeland: Een eerste schets,” in *Rond de kerk in Zeeland*, ed. Arnold Wiggers *et al.* (Delft: Eburon, 1991), pp. 37–83.

religious introspection and bringing piety back into mundane activities and the everyday walks of life. In such a devout setting, ministers could easily acquire more prestige than was typical elsewhere. We may take it as a sign of their strong position that Middelburg ministers frequently married women of the local patriciate. The four “anomalous” women were not in that category; rather, they owed the privilege of society membership to their husbands and the crucial role they played in the *Natuurkundig Gezelschap* of the Middelburg gentlemen.

Since its official foundation in 1780, this men’s society had essentially known two different categories of membership. The majority, so-called contributing members, were recruited from the local regent aristocracy. They paid a high fee and in exchange were allowed to listen to the lectures others had prepared. To the second category belonged a minority of so-called teaching members who didn’t have to pay but who were expected to do the actual work of the society: the lecturing and experiments, the taking of minutes, and the registering of finances. Next to physicians and some enthusiastic autodidacts, ministers such as C. H. D. Ballot, who lectured to both the male and female scientific societies, were among the persons most likely to have developed expertise in natural philosophy sufficient to instruct others in matters scientific. Thus the success of the *Natuurkundig Gezelschap* depended in part on the willingness of local ministers to take the role of teaching members. The rather unexpected presence of a handful of ministers’ wives among the ladies of the *Natuurkundig Genootschap* is explicable by the role of their husbands within the men’s society. Reverend Ballot of the Dutch Reformed Church became the tutor on whom the women themselves depended for their biweekly lectures (see Figure 1). His wife, Anna Ballot-Buys, was not only admitted as a member but also exempted from paying the annual fee. Their grandson became a famous scientist.<sup>24</sup>

These Calvinist associations might suggest that the religious makeup of the society’s women was entirely Dutch Reformed, but while a number of the ladies were indeed members of what was virtually the established church, others attended the Walloon church—either because their foreign ancestors had preferred it or because of the social distinction of its membership and use of the French language suggested. The religious differences between the two churches were not great, and in Middelburg people seem frequently to have switched from the Walloon to the Dutch Reformed church and vice versa.<sup>25</sup> Protestant religious ideas, however, prove vital for enabling us to understand the women’s scientific interests and ideals. Their religious sentiments justified their membership. Physico-theology—a piety expressed through the study of God’s work—permeated the proceedings, just as in the entirely male societies and the universities.

#### GOALS, EXPECTATIONS, AND DEFENSES OF THE NATUURKUNDIG GENOOTSCHAP

With the original minutes of their society lost, and hardly any personal manuscripts saved, one of the few ways we can acquire an idea of these women’s interests and ideals is by

<sup>24</sup> C. H. D. Buys Ballot (1817–1890) was the founder of the KNMI (the Royal Dutch Meteorological Institute) and the inventor of the well-known Buys Ballot law on atmospheric pressure, wind force, and wind direction. On the membership categories see Schoute, “Geschiedenis van het Natuurkundig Gezelschap te Middelburg” (cit. n. 2), pp. 7–8, 24–25; and Zeeuws Archief, Archief van het Natuurkundig Gezelschap, Pt. 1, no. 1: *Wetten van het Natuurkundig Gezelschap*, 2nd ed. (Middelburg: Keel, 1796).

<sup>25</sup> J. Ab Utrecht Dresselhuys, *De Waalsche gemeenten in Zeeland voor en na de herroeping van het Edict van Nantes: Eene bijdrage tot de geschiedenis van de Hervormde Kerk in de Nederlanden* (Bergen op Zoom: Verkouteren, 1848).



**Figure 1.** Reverend Christophorus Henricus Didericus Ballot (1741–1797), the first tutor of the women's society in Middelburg. Engraving by G. Kockers, 1778. Zeeuws Archief, *Zelandia Illustrata*, Pt. 4, no. 1g2. Courtesy of the Koninklijk Zeeuwsch Genootschap der Wetenschappen.

attending to the voices of their husbands, chairmen, and lecturers. Frustrating as this may be, we can be grateful that the men involved were self-conscious enough not only to take the floor but also to have their words published and preserved for posterity. The printed opening speech of the Genootschap's first elected chairman, Johan van de Perre, given at the first ordinary meeting of the women in November 1785, is a wonderfully rich source revealing the expectations of the women and the ends they sought—as well as his own piety and ideas about gender. Addressing the gathered women, Van de Perre exclaims:

Our goal is thus the same, and it is exalted. You desire and seek knowledge, and among all worldly sciences and inquiries [you seek] specifically the one which, more than the others, provides insight into the Glory and Wisdom of the Creator and thus should be highly prized by each right-minded person; the one [natural philosophy] which is called the procreator of all cherished Arts, and which in the field of philosophy, after moral philosophy, benefits human society the most, and which will always leave incomprehensible truths and secrecies, however diligently and steadfastly pursued.<sup>26</sup>

Van de Perre (see Figure 2) asserts that these women want to be educated in natural philosophy, but educated to a purpose. Since the time of Robert Boyle and the Boyle Lectures of the 1690s in England, and Bernard Nieuwentyt in the early years of the eighteenth century in the Dutch Republic, a Protestant sensibility had linked natural philosophy to theology in a vast sermon literature that offered God's work to the educated laity as the way of grasping the wisdom of the Creator.<sup>27</sup> Even if this physico-theological rationale for science was not yet generally accepted in the setting of Middelburg—opponents still forced scientifically interested ministers to defend the compatibility of science and divine revelation in public—it was strong enough to inform the work of the Middelburg women. Ballot also lectured on the theme to the men's society. Indeed, throughout Europe, but particularly in Protestant settings during the course of the eighteenth century, physico-theology offered some of the more powerful arguments that legitimated and made science attractive. It rendered experimentation pious, and it used creation—defined as ordered and harmonious—to augment wonder in the face of the divine. The order in creation also found a human analogy: "Ladies," Van de Perre continued, "you have been willing to bring your society under befitting and salutary regulations, through good laws and rules." The Genootschap sought to instill a sense of order that would be both intellectual and personal, that would mirror God's order as it was found in nature. Could one expect otherwise, Van de Perre asked rhetorically, of "those, who by their inborn tenderness and softness, positively bear the image of Him, who is Goodness and Love itself"?<sup>28</sup>

It is not difficult to see how, in Dutch circles with an inclination to the Christian version of Enlightenment ideals, physico-theology could serve not only to motivate but also to

<sup>26</sup> Zeeuws Archief, Archief van het Natuurkundig Gezelschap, Aanhangel 1a: *Wetten van het Natuurkundig Genootschap* (Middelburg: Van Osch, 1785), with the attached "Aanspraak" by Van de Perre, pp. 13–34, on pp. 16–17: "Ons doelwit is toch hetzelfde, ons doelwit is verheven; Gij begeert en zoekt Wetenschap, en wel onder de Menschelijke Wetenschappen die geene, die meer, dan veele andere, eenig inzien in de Grootheid en Wijsheid van den Schepper geeft, en daar door bij elk weldenkend Mensch op hoogen prijs moet staan; die de voortteelster genoemd wordt van alle prijselijke Konsten; die, na de Zedenkunde, in de Wijsbegeerte, de voordeelen der Menschelijke Maatschappij het meest bevordert, en die, hoe vlijtig en standvastig nagespoord, altoos onbegrijpelijke waarheden en verborgenheden zal naalaten."

<sup>27</sup> Margaret C. Jacob, *Scientific Culture and the Making of the Industrial West* (New York: Oxford Univ. Press, 1997), pp. 89–92. See also J. W. Buisman, *Tussen vroomheid en Verlichting: Een cultuurhistorisch en -socio-logisch onderzoek naar enkele aspecten van de Verlichting in Nederland (1755–1810)* (Zwolle: Waanders, 1992); and Rienk Vermij, "Science and Belief in Dutch History," in *A History of Science in the Netherlands: Survey, Themes, and Reference*, ed. Klaas van Berkel, Albert van Helden, and Lodewijk Palm (Leiden/Boston: Brill, 1999), pp. 332–347.

<sup>28</sup> Van de Perre, "Aanspraak" (cit. n. 26), p. 15: "waart Gij bedacht, Dames! onder gepaste en heilzame verordeningen, hetzelfde [genootschap] tot stand te brengen, door goede wetten te regelen." *Ibid.*, pp. 14–15: "en zoude men ze dan niet verwachten by zulke, die uit hoofde haarer aangeborene tederhartigheid en zachtgeaardheid, met nadruk het beeld draagen van Hem, die de Goedheid en Liefde zelve is." For defenses of the compatibility of science and religion see Christophorus Henricus Didericus Ballot, *Oratio de physices studio, christiano . . . quod et ipsae Sacrae testantur Literae, dignissimo eique perituli* (Middelburg: Gillissen, 1789); and Herm. Jo. Krom, *Betoog dat de beoefening der natuur- en sterrenkunde niet strijdig is met de erkenenis der godlyke openbaring, en den geopenbaarden godsdienst van Jezus Christus* (Middelburg: Gillissen, 1790). See also Bert Paasman, *J. F. Martinet: Een Zutphens filosooph in de achttiende eeuw* (Zutphen: Van Someren, 1971), p. 28.



**Figure 2.** Johan Adriaen van de Perre (1738–1790), the first chairman of the women's society. Painting by P. de Sompsois, 1784. Zeeuws Museum in Middelburg. Courtesy of the Koninklijk Zeeuwsch Genootschap der Wetenschappen.

justify the scientific interests of women. Perhaps harder to see is how the scientific education of these women—who had no official place or formal influence in Dutch politics—was to benefit the commonwealth, as Van de Perre also claimed that it would. But the benefit to be derived from female education was an issue frequently taken up by Dutch Enlightenment authors. Van de Perre therefore had no difficulty in finding home-grown arguments to justify this new and highly unusual institution. He also sought affirmation in feminist literature of English origin, in particular the sermons of James Fordyce published in 1766. According to much of this literature, and also in the thinking of Van de Perre,

the feminine influence reached the world through children and husbands. The future happiness of humanity depended on the education of children: how wonderful it would be, then, if mothers themselves could teach their children the first principles of science, thus protecting them from the moral risks inherent in other settings. Moreover, if this project were successful, civic benefits would ensue. Their husbands would have much more time to dedicate themselves to their civic duties and to God, the Fatherland, and literary pursuits.<sup>29</sup> While we might question whether the women found this last prospect as attractive as Van de Perre did, the idea of personally educating and protecting their children probably appealed to most of the mothers present. In addition, Van de Perre predicted—with perhaps a typically Dutch obsession—that knowledge of the nature and characteristics of things would help the women become more economical. It would also enhance their appreciation of small and simple objects in a world that was increasingly threatened by decadence and luxury. The language of decadence and decline shows that Van de Perre was in touch with the controversies that embroiled the republic in the 1780s, a topic to which we shall return.

Van de Perre also stressed the personal benefits that science—more than that other interest of theirs, music—offered the society members. Apart from advancement toward God, educated women would earn respect for themselves and for their husbands. The men would come to them for advice and give them credit for their decisions. And finally—all still according to Van de Perre—the newly acquired knowledge would enrich the women more than any of their worldly belongings could: unlike other possessions, scientific knowledge could only be obtained in an honest way; moreover, it was inalienable and did not diminish when shared with others.<sup>30</sup> Van de Perre knew that what he was advocating for women was controversial. But before we examine his defensive arguments any further, we should consider the goals that the Middelburg scientific academy sought to accomplish.

After Van de Perre had addressed practical matters—noting that each meeting would last three hours, specifying the days and times, outlining the organizational structure, and so forth—the Rev. Christophorus Ballot, the women's first appointed lecturer, outlined the intellectual program that would be followed. Ballot understood that the women were not interested in physical experiments as simple amusements: the observation of experiments had to lead to a better understanding of nature and its specific operations. And because this knowledge would also lead the women to God, he promised, the great Creator would bless the project. To the end of a more comprehensive understanding of nature, Rev. Ballot intended to lecture on its totality: "I will have to point out the Characteristics of substances and lay open Movement and its different and many laws. I will have to explain Gravity, Hydrostatics, Mechanics, Optics. I will have to demonstrate Air, Water, Fire in their nature and effects. I will have to make known Light, Colors, Loadstone and Electricity in their amazing and astonishing Characteristics."<sup>31</sup> The emphasis on mechanics and, specifically,

<sup>29</sup> Regarding Dutch Enlightenment authors on the benefits of female education see Buisman, *Tussen vroomheid en Verlichting* (cit. n. 27), pp. 343–376. Van de Perre cites the Dutch translation: *Vriend der Juffrouwen*, 2nd ed. (Amsterdam, 1779), Pt. 2, p. 40, which is the last page of Ch. 8 of James Fordyce, *Sermons for Young Women* (London, 1766), rpt. with an introduction in Janet Todd, ed., *Female Education in the Age of Enlightenment*, Vol. 1 (London: Pickering, 1996). For enumeration of the civic benefits see Van de Perre, "Aanspraak," p. 24: "En dat uwe Echtenooten, van deeze zorg ontslaagen, zich geheel aan hunne Burgerlijke Plichten, aan God, het Vaderland, en de Letteroeffeningen kunnen overgeeven."

<sup>30</sup> Van de Perre, "Aanspraak," pp. 26–27.

<sup>31</sup> *Weten van het Natuurkundig Genootschap* (cit. n. 26), with Ballot's untitled speech on pp. 35–51; for the quotation see pp. 42–43: "Ik zal de Eigenschappen der stoffe moeten aanwijzen; de Beweging, en haare onderscheidene en veelvuldige wetten, moeten open leggen. Ik zal de Zwaarte-kracht, de Waterweeg-kunde, de Werktuig-kunde, de Gezicht-kunde, moeten verklaren. Ik zal de Lucht, het Water, het Vuur, in derzelve aart en uitwerkzelen, moeten vertoonen. Ik zal het Licht, de Couleuren, den Zeilsteen en de Electriciteit, in derzelve verbaazende en verwonderlijke Eigenschappen moeten kenbaar maaken."

electricity was very much the program of Abbé Nollet's *Leçons de physique expérimentale* (1743), a work translated into Dutch in six volumes between 1759 and 1772. Whether Ballot, Van de Perre, or the women themselves chose Nollet, his book was formally prescribed in the regulations of the Natuurkundig Genootschap as the one its lecturers would follow. A few years earlier the Nollet book had graced the curriculum of French engineers in Paris, and it was still being used in the 1780s by French boys in their teens.<sup>32</sup> Nollet is also mentioned as the manual in the regulations of the men's society in Middelburg, and Ballot is known to have used the book while lecturing the gentlemen on mechanics and electricity. There is no reason to believe that he altered his lectures according to the gender of his audience. In other Dutch scientific societies of the time natural philosophers like J. H. van Swinden also gave pious lectures, on occasion to both men and women, on the virtues of knowing science, while experimenters like Benjamin Bosma and Pieter Cramer offered mathematical and electrical demonstrations. Bosma was also a fervent advocate of physico-theology, which he wanted to offer to both men and women. Perhaps Bosma imitated his famous predecessor, the English Newtonian and traveling demonstrator John Desaguliers, whose public lectures given in French in the Dutch Republic had been offered to a mixed audience of men and women. Desaguliers also visited Middelburg, possibly as early as 1729.<sup>33</sup>

Ballot immediately took the opportunity to register his view that Nollet's book had certain deficiencies: it did not follow a mathematical method, and it was too long-winded. Nevertheless, he thought that its many advantages outweighed the disadvantages. On the whole, Ballot seems to have been a bit less optimistic about the expected successes of the women's educational project than Van de Perre had been. His repetitively skeptical intonation was probably intended to exonerate himself in the event that the project failed. Two years later, when the Genootschap celebrated its move to a new building, Ballot's skepticism had completely vanished.<sup>34</sup>

Van de Perre had been careful to defend the project at its inception against any would-be detractors. His charismatic opening speech with its physico-theological tone extolled what the women could accomplish but also defended their project against conservative minds that might oppose it. To be sure, some of Van de Perre's acquaintances would greet the initiative with moderate benevolence, as can be read in the letters of the Dutch phi-

<sup>32</sup> See C. Stewart Gillmore, *Coulomb and the Evolution of Physics and Engineering in Eighteenth-Century France* (Princeton, N.J.: Princeton Univ. Press, 1971), pp. 12–14; and the student notebooks of Eleuthère du Pont (b. 1771), Hagley Museum and Library, Greenville, Delaware, Longwood MSS, Series B, Box 10, on using Nollet, Desaguliers, and Franklin.

<sup>33</sup> On Ballot's use of Nollet for the gentlemen's society see Mijnhardt, *Tot heil van 't mensdom* (cit. n. 4), pp. 155–156. See Gemeente Archief, Amsterdam, Felix Meritis, MSS P.A. 59.19 (for a speech by van Swinden), P.A. 9.10 (for Bosma and Cramer at Concordia et Libertate). See also J. Lublink de Jonge, *Zeven, Ite en IIIe zevental verhandelingen over verschillende onderwerpen, voorgelezen in het Genootschap Concordia et Libertate* (Amsterdam, 1783–1794); for his piety see J. H. van Swinden, *Redenvoering en aanspraak, ter inwijding van het gebouw der Maatschappij Felix Meritis te Amsterdam, gehouden op den 31sten oktober en 1sten november MDCCCLXXXVIII* (Amsterdam: Warnars, 1789). Van Swinden had reservations about women participating in men's societies. For Bosma's views on physico-theology see Benjamin Bosma, *Redenvoering over de orde en derzelven zigbaarheid onder de schepselen* (Amsterdam, 1765), where he is also following Nollet. For Desaguliers's visit to Middelburg see Zuidervaart, "Konstgenoten" en hemelse fenomenen (cit. n. 2), pp. 71–76.

<sup>34</sup> In a lecture for the Zeeuwisch Genootschap der Wetenschappen (Scientific Society of Zeeland) in 1795 Ballot would also criticize Nollet for what he thought to be a sloppy explanation of the uniform acceleration of falling bodies. He might have confronted the same problem while lecturing the ladies on this subject; see his manuscript on this matter in the Zeeuwse Bibliotheek, Middelburg, hs. 4196. Ballot's enthusiasm for the Genootschap by 1787 can be seen in Zeeuws Archief, Archief van het Natuurkundig Gezelschap, Aanhangsel 1b: *Aanspraaken bij het overbrengen der vergadering van het Natuurkundig Genootschap der Dames, in het nieuw opgerichte Musaeum Medioburgense* (Middelburg: Van Osch, 1787), pp. 3–6, 13–15.

losopher Franz Hemsterhuis to the German princess Amalia von Galitzin. Over the next few years the women also confronted reactions ranging from blank incomprehension to severe mockery. As Kant pointed out at the same moment, living in the Age of the Enlightenment did not make people enlightened.<sup>35</sup> The traditional education of elite Dutch women usually entailed only literature, history, geography, dancing, singing, needlework, and lessons in French and, occasionally, German. Women with a passionate interest in science risked ridicule as pedantic, interfering “savantes”—in the most pejorative, Molièrian sense of the term. “Les femmes savantes” was a term—and a style—well known in the Dutch Republic, where French mores and attitudes were commonplace.<sup>36</sup> Acknowledging the perils of being both female and highly educated, Van de Perre sought to reassure the women on this point. He insisted that only arrogance and ignorance could produce accusations of unseemliness. And, as he added at the end of his speech, the fact that the women of the *Natuurkundig Genootschap* had wisely chosen a minister as their lecturer practically eliminated the risk that their reason would lose focus and become too much oriented toward worldly principles instead of those of Jesus—a danger inherent in all human exercises in philosophy.

Van de Perre marshaled every available argument. He focused on the scientific interests of famous male and female scholars in the past. Not only had great minds such as Solomon, Thales, Descartes, Newton, and Leibniz displayed an active interest in science, but many women had also proven that the female sex could be just as involved in and productive. Here Caroline, the British Princess of Wales and patron of the Newtonians, achieves a place along with the marquise du Châtelet and the Dutch women Anna Maria van Schurman, Margarita Godewijk, and Maria Sibylla Merian.<sup>37</sup> The point is hammered home “that the Spirit of Wisdom and Knowledge is not tied to any century, any age, any place or any subject; and that your Sex, as well as ours, can excel in Belles Lettres and Sciences if upbringing isn’t neglected and right means aren’t forgotten.” Interestingly, the examples Van de Perre chose were not all women with flawless reputations. Only a decade before the foundation of the *Natuurkundig Genootschap*, a moralizing Dutch weekly in the tradition of the *Spectator* had criticized du Châtelet and Van Schurman for their allegedly disdainful attitude toward feminine household activities. Many men had problems accept-

<sup>35</sup> For “moderate benevolence” see letters dated 7 Dec. 1787 and 9 May 1788, in *Briefve von Franz Hemsterhuis an die Fürstin Amalie von Galitzin*, Vol. 10, undated microfilm edition of the Universitäts- und Landesbibliothek Münster. (We thank Peter Sonderer for spontaneously offering us this information.) Less favorable reactions were noted by Van de Perre’s eulogist: Johannes Henricus van der Palm, *Lofrede op den Hoogwelgeborenen Heer Mr. Johan Adriaen van de Perre, heer van Nieuwerve, Welsingen en Everswaerd* (Middelburg: Gillissen, 1790), p. 42. For Kant’s remark see Immanuel Kant, “Was ist Aufklärung?” (1784), readily available in part in Margaret C. Jacob, *The Enlightenment: A Brief History with Documents* (Boston: Bedford/St. Martin’s, 2001), pp. 202–208.

<sup>36</sup> On the traditional education of elite Dutch women see Willem Frijhoff, “Van onderwijs naar opvoeding onderwijs: Ontwikkelingslijnen van opvoeding en onderwijs in Noord-Nederland in de achttiende eeuw,” in *Onderwijs en opvoeding in de achttiende eeuw* (Maarsse: APA, 1983), pp. 3–39, esp. pp. 8–10. On the risk of ridicule see Dorothée Sturkenboom, *Spectators van hartstocht: Sekse en emotionele cultuur in de achttiende eeuw* (Hilversum: Verloren, 1998), pp. 183–193. On the prevalence of French mores and attitudes see Frijhoff, “Verfransing? Franse taal en Nederlandse cultuur tot in de revolutietijd,” *Bijdragen en Mededelingen betreffende de Geschiedenis der Nederlanden*, 1989, 104:592–609.

<sup>37</sup> On Caroline see Schiebinger, *Mind Has No Sex?* (cit. n. 13), pp. 45–46. On Van Schurman see Mirjam de Baar et al., eds., *Choosing the Better Part: Anna Maria van Schurman (1607–1678)* (Dordrecht: Kluwer, 1996). On Godewijk see Joh. Arend Dijkshoorn, *L’influence française dans les mœurs et les salons des Provinces Unies* (Paris: Arnette, 1925), pp. 191–198; and Annelies de Jeu, “’t Spoor der dichtersessen”: *Netwerken en publicatiemogelijkheden van schrijvende vrouwen in de Republiek (1600–1750)* (Hilversum: Verloren, 2000), pp. 36–48, 86–87. On Merian see Natalie Zemon Davis, *Women on the Margins: Three Seventeenth-Century Lives* (Cambridge, Mass.: Harvard Univ. Press, 1995), pp. 140–202.

ing du Châtelet as a scientific authority. In that respect Kant's mindless ridicule of her scientific interests is symptomatic: "A woman who . . . engages in debates about the intricacies of mechanics, like the Marquise du Châtelet, might just as well have a beard; for that expresses in a more recognizable form the profundity for which she strives."<sup>38</sup>

Whether or not Van de Perre knew of Kant's misogyny, his own perspective was very different. He credited du Châtelet not only as a scholar who had expanded the work of Newton and explained it in a mathematical way but also as a woman wise enough to hide her intellect and experience behind the courtly politeness and diversions appropriate to her position as a lady-in-waiting to the queen of France. Van de Perre did not go so far as to advise the women to hide their newly acquired knowledge—as other Dutch authors of the time did.<sup>39</sup> But this small but telling detail reveals that he too realized that scientific knowledge had a different consequence for women's moral reputations than for those of men.

Although hardly an original thinker on the subject of gender, Van de Perre had done his homework. Even if it was said—and was perhaps true—that the male mind was stronger than the female mind, he claimed, one had to recall the different destinies of the sexes and recognize that those differences did not imply a male privilege in science. Precisely because women took care of their families—husbands and children—humanity would profit tremendously from all the scientific knowledge they mastered. From whatever source and for whatever reason, Van de Perre had absorbed aspects of feminist discourse commonplace in some circles within the international republic of letters.

Clearly, Van de Perre honestly wanted to believe that the mind did not necessarily have a sex. The examples of earlier female scholars proved to him that the mind could avoid subjection to the body and indeed demonstrated an inclination ever to return to its elevated origin. To illustrate his point, Van de Perre used the remarkable chemical metaphor of metallic substances that, under the impact of heat, escape from their material form and become free floating. Referring explicitly to positions held by Aristotle and Descartes, Van de Perre even suggested that the tender constitution of women—whether or not it was caused by their lack of physical exercise—was an advantage to the female mind because, "less burdened by physical matter, it is more free and quick to penetrate into all Arts and Sciences with less effort and more speed."<sup>40</sup>

For those of us who have learned to be ideologically alert to the body-mind trap, Van de Perre's observations might initially cause some confusion. He seems to contradict himself, suggesting the existence of a relationship between the female body and mind that he previously denied. Paradoxical as this may seem, he has actually taken his argument to its very logical end point: minds are not necessarily tied to bodies, especially not if the bodies in question are weak. It is certainly tempting to conclude that if there was any mind that had to be sexed, it was the man's mind—and this was not to his advantage.

Did the women who listened to Van de Perre's speech—and perhaps reread it many times afterward—reach the same conclusion? Did they believe that their minds were

<sup>38</sup> Van de Perre, "Aanspraak" (cit. n. 26), p. 20: "dat de Geest van Wijsheid en Wetenschap aan geen eeuw, geen ouderdom, geen plaats of onderwerp, gebonden is; en dat, wordt de opvoeding niet verwaarloosd, en de middelen niet uit het oog verloren, uwe Sexe, zo wel als de onze, in de fraaije Letteren en Wetenschappen kan uitmunten." For the criticism by the Dutch weekly see *De Opmerker*, 25 July 1774. On men's difficulty in accepting du Châtelet as an authority see Terrall, "Gendered Spaces" (cit. n. 12), pp. 224–232. Kant is quoted in Schiebinger, *Has Feminism Changed Science?* (cit. n. 16), p. 19.

<sup>39</sup> Sturkenboom, *Spectators van hartstocht* (cit. n. 36), p. 192.

<sup>40</sup> Van de Perre, "Aanspraak" (cit. n. 26), pp. 23–24: "hetzelve, minder met het stoffelijke bezwaard, [is] vrijer en vlugger . . . , om in alle Konsten en Wetenschappen, met minder moeite en meerder spoed, in te dringen."

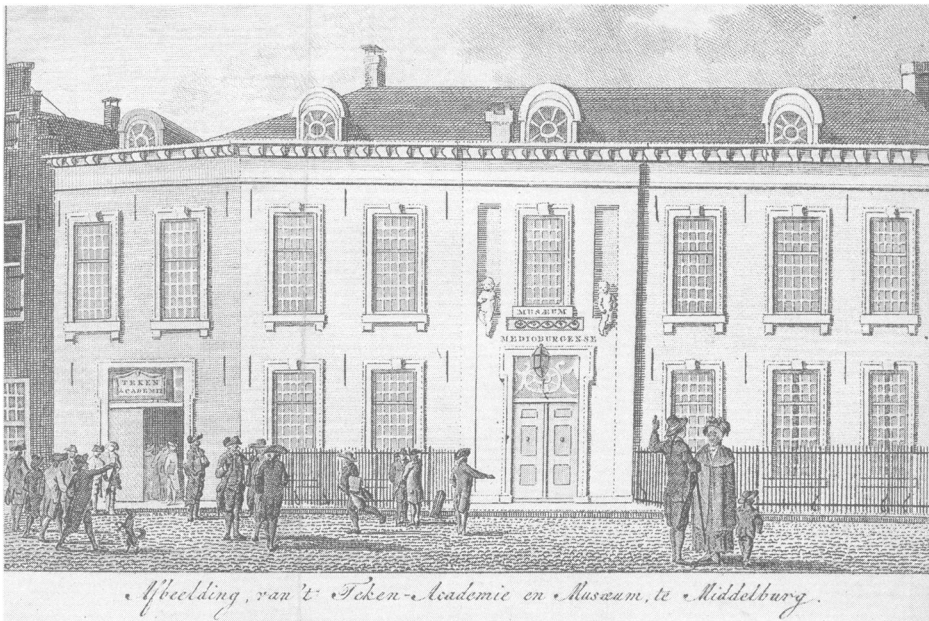
quicker to grasp things than men's? That they weren't tied to their bodies? That they fulfilled their destiny as mothers when they succeeded in educating themselves? We will never be able to hear their own answers to these questions, but we can safely assume that the women who joined the *Natuurkundig Genootschap* were aware of the risks of their project and yet had sufficient reasons to believe in their own capability to master the principles of nature. Certainly there were plenty of other, less taxing ways to spend their time and money. Because of the strength of Protestant physico-theology, they may actually have believed that membership in the academy was precisely what God wanted for them. An utterly strict Calvinism might have confined them to home and chapel, and thus we can postulate in Van de Perre's sentiments—and perhaps in those of his listeners, as well—a subtle mixture of Christian and enlightened ideals.

Having established an official society together, the Middelburg women had an organizational structure that empowered them in a practical sense as well. It permitted, for instance, the purchase of expensive instruments needed for their experiments, paid for by the academy's account to which each member contributed. In addition to their permanent male chairman, who for strategic reasons had to preside over their meetings and represent them in affairs with the outer world, the women elected their own day-to-day board of three directors each year. For important decisions they called a separate meeting, with all the members present. This organizational structure also made the women less vulnerable in the event of disagreements with their lecturer; they could decide as a group to fire him and hire someone else. Although the women give the impression of being entirely willing to follow the advice of their successive chairmen and lecturers, in theory they had the option to change course if they wanted to.

#### PERSONAL RELATIONS AND INTERESTS

To bring some of these women into sharper relief, let us turn to a few members of the society's first generation, with a brief glance into the nineteenth century as well. The personal records are deficient in more respects than we would like, yet they can help us get a better picture of the women's personal lives, relations, interests, and activities. One of the most intriguing women, in part because we know so little about her, is *Jacoba van den Brande* (1735–1794), one of the first three directors of the *Natuurkundig Genootschap* and the wife of *Johan van de Perre*. Perhaps because she was such a pious person, *Jacoba van den Brande* seems to have preferred to remain in the background of most local events. Nonetheless, she must have played a crucial role behind the scenes in the foundation of the society and in all the other activities in the arts and sciences that her husband sponsored or endowed.

Born the daughter of *Johan Pieter van den Brande* and *Maria van Reigersberg*, and the only niece and godchild of the unmarried *Jacob van Reigersberg*, squire of *Couwewerve* and *Krabbendijke*, *Jacoba van den Brande* inherited enormous capital at a relatively young age. Although her husband was certainly not without means—leaving *f* 307,338 when he died in 1790—she definitely was the richer of the two. At her death in 1794 the value of her personal belongings was estimated at *f* 1,500,246. Since the couple did not have children, *Jacoba van den Brande*'s estate was to be divided among her three nieces—one of them a member of the women's society herself—but only after the deduction of the legacies *Jacoba* had disposed for Walloon and Dutch Reformed church funds, local ministers, and her servants. After their marriage *Jacoba van den Brande* and *Johan van de Perre* lived at *De Commanderij*, a prestigiously rebuilt house in the center of Middelburg; in the



**Figure 3.** *Musaeum Medioburgense*, the building where the women's society held its meetings from 1787 onward. Taken from *Zeelands Chronyk Almanach voor 1791–1792*. Private collection.

summer they retreated to the castle Westhove on the coast of Walcheren. There they received such important guests as the Dutch stadtholder Willem V. Both properties belonged to Jacoba van den Brande, and both can still be admired in Zeeland today.<sup>41</sup>

Despite the fact that it was childless, the marriage seems to have been a happy one, at least according to the poems that celebrated the couple's silver jubilee in 1785. Having given up all his political functions in 1779, Johan van de Perre thereafter committed himself full time to several projects characteristic of the Dutch Enlightenment and especially related to science and education. His own intellectual interests centered on astronomy, meteorology, physics, and chemistry, but he also supported the establishment of several local scientific societies and educational projects.<sup>42</sup> Undoubtedly, his most revolutionary venture—apart from the women's society—was the *Musaeum Medioburgense* (see Figure 3). It was Johan van de Perre's ambition to make this place a center of scientific and educa-

<sup>41</sup> H. J. Zuidervaart, "Mr. Johan Adriaen van de Perre (1738–1790): Portret van een Zeeuws regent, mecenas en liefhebber van nuttige wetenschappen," *Arch. Zeeuwsch Genootsch. Wet.*, 1983, pp. 1–169, esp. pp. 11–13, 45–47, 65–70; Zuidervaart, "Eender en anders: 'Representant' Van de Perre en 'Gouverneur' Schorer, twee bewoners van een machtig pand," in *Een bijzonder huis op een bijzondere plek: Het Van de Perrehuys in Middelburg en zijn omgeving*, ed. Jeanine Dekker, Peter Don, and Albert Meijer (Middelburg: Zeeuws Archief, 2000), pp. 129–157, esp. pp. 131, 134–137.

<sup>42</sup> Before his retirement from political service, Van de Perre's most important function was that of the "representant van de Eerste Edele van Zeeland" from 1768 to 1778—i.e., he represented the Dutch stadtholder at different administrative levels in Zeeland, which made him temporarily the most powerful man of the province. Besides the *Natuurkundig Gezelschap* and the *Natuurkundig Genootschap*, Van de Perre supported or stimulated the foundation of local departments of the *Oeconomische Tak der Hollandsche Maatschappij der Wetenschappen*, the *Natuur- en Geneeskundige Correspondentie Societeit*, and the *Zeeuwsch Genootschap der Wetenschappen* that was housed originally in Vlissingen. He also supported the *Middelburgsche Teeken Academie*, an educational institute for artistic painting and technical sketching.

tional activities for those among the upper and lower classes whose education needed improvement. In 1787 he bought the former house of his brother in the Latijnse Schoolstraat, next to the Illustrious School, and had it adapted. Not only was this building meant to facilitate the meetings of the various local societies—which indeed it did from 1787 onward—but eventually it was intended to house a permanent teacher who would be hired to give lessons covering all fields of knowledge to adults of both sexes. This last plan was never realized, although by 1790 Van de Perre had succeeded in establishing a public library in the building and in finding a minister, Johannes Henricus van der Palm, whom he considered suitable to give the lessons. Unfortunately, the early death of Johan van de Perre impeded the expansion of activities in the *Musaeum Medioburgense*, but the building would remain the home base for the women's society until it ceased meeting in 1887. Van de Perre's ambitious educational projects are reminiscent of those associated with so many European Freemasons and their lodges. Not surprisingly, he belonged to the Middelburg lodge, *Le Philanthrope*.<sup>43</sup>

Primary and secondary sources usually herald Johan van de Perre as the great initiator and genius behind all these projects. But we want to emphasize the role that may have been played by his domestic conversations with his wife. If their marriage was as good as it was said to be, it is highly likely that Johan van de Perre discussed his ambitions first with Jacoba van den Brande. Might she even have inspired the women's society project? Little is known about her personal interests, but who is to say that some of his ideas were not forged in the atmosphere of their camaraderie? After the death of her husband, Jacoba took over his role. She continued to support local ministers and local projects in sciences and arts. She kept the impressive collection of books and scientific instruments he had amassed, thus enabling both the *Natuurkundig Gezelschap* and the *Natuurkundig Genootschap* to continue to use these materials in the same way. She presented the *Zeeuwsch Genootschap der Wetenschappen* with the gift of Johan van de Perre's beloved and precious planetarium, thus moving it to a semipublic space where more people could admire its design and use it to learn about the planetary system. She lent money under favorable conditions to the local instrument-maker David Reghter, thus enabling him to continue in his trade after one of his main clients died. And, finally, she donated the proprietary rights of the building of the *Musaeum Medioburgense* to the gentlemen's *Natuurkundig Gezelschap*, thus securing the facilities for both the men's and women's societies into the distant future.<sup>44</sup>

<sup>43</sup> The Illustrious School was a university without graduation rights. See Willem Frijhoff, "Patterns," in *A History of the University in Europe*, Vol. 2: *Universities in Early Modern Europe (1500–1800)*, ed. Hilde de Ridder-Symoens (Cambridge: Cambridge Univ. Press, 1996), pp. 43–110, esp. p. 52. On Van de Perre's plans for the *Musaeum Medioburgense* and the eventual uses of the building see Zuidervaart, "Johan Adriaen van de Perre" (cit. n. 41), pp. 52–62; and Palm, *Lofrede op den Hoogwelgeboren Heer Mr. Johan Adriaen van de Perre* (cit. n. 35). On his lodge affiliation see the online database on the membership of Dutch societies compiled by Gerard Schulte Nordholt, accessible at [www.schultenordholt.org/societies1800](http://www.schultenordholt.org/societies1800).

<sup>44</sup> On the possible influence of Jacoba van den Brande see Zuidervaart, "Johan Adriaen van de Perre," p. 37; and Baar–De Weerd, "Natuurkundig Genootschap der Dames te Middelburg" (cit. n. 1), p. 81. On the gift of the planetarium see H. J. Zuidervaart and H. Hoitsma, "Een Zeeuws planetarium uit de tweede helft van de 18e eeuw," *Arch. Zeeuwsch Genootsch. Wet.*, 1982, pp. 72–148. On the donation of the building rights see Zuidervaart, "Johan Adriaen van de Perre," pp. 63–70, 99–108. The fact that she did not offer joint ownership of the building to both the men's and the women's societies suggests that in 1791 the legal position of the women's society might have been less strong. Possibly the *Natuurkundig Genootschap* had not yet obtained the status of a *corporatie*, which we know for certain it had from 1800 onward. See *Zeeuws Archief*, *Zeeuwsch Genootschap der Wetenschappen*, no. 271, letter from the last president of the *Natuurkundig Genootschap*, Mrs. Albertina Luteijn, 7 Sept. 1893, summarizing the most important events in the history of the society, note under "19 April 1800."



**Figure 4.** Anna Huijssen van Kattendijke–Hurgronje (1726–1791) and her family. Anna Hurgronje was one of the three first female directors and a benefactress of the women's society. Courtesy of the Iconografisch Bureau/RKD, The Hague.

Jacoba van den Brande was not the only female director of the *Natuurkundig Genootschap* who tried to secure the future of the women's society by her financial support. Another codirector, Anna Hurgronje (1726–1791), who was married to Alexander Huijssen, squire of Kattendijke and Wytvliet, bequeathed the women's society *f*400 upon her death (see Figure 4). Thus she proved to be not only the beautiful, virtuous, eloquent, wise, and intelligent woman who—according to their 1749 marriage poems—acted as the loadstone of her husband's senses, but also a very generous patron.<sup>45</sup>

<sup>45</sup> "Anna, die hy steeds zal minnen, is de Zeilsteen van zyn zinnen": Zeeuws Archief, Familie-Archief Snouck Hurgronje, Pt. 1, no. 119.

Anna Hurgronje's bequest enabled the women in November 1793 to buy a special air pump from one of the leading Dutch instrument-makers in Amsterdam, the Englishman John Cuthbertson (1743–1821), together with another instrument (not further specified) to compress air. These were given to the fraternal *Natuurkundig Gezelschap* as a contribution to their collection of instruments, which the ladies were permitted to use on the condition that they helped to enlarge the holdings. Though their donations were not as regular nor equal in value to those of the men, the members of the *Natuurkundig Genootschap* kept their part of the bargain. In 1785 they had presented the men's society with a pair of globes by the London instrument-maker George Adams (1750–1795)—possibly purchased via a Leiden instrument-maker—which the men themselves had longed to possess but considered too expensive to buy. And in 1789 the ladies purchased a small collection of optical instruments at a local auction. In later years, however, the women preferred to invest their money in articles that would make their own meetings during the long, cold winter evenings more comfortable: silver candle-holders and tea-ware, foot-warmers and cushions.<sup>46</sup>

In fact, part of the bequest of Anna Hurgronje was invested in such items. As one of the society's oldest members, she probably had discovered for herself that it was hard to sit through the three-hour evening sessions in the *Musaeum Medioburgense* without becoming stiff. As her fellow-member Sara Matthias (1720–1809), widow of Pieter Pous, would write to her son Bonifacius in 1795, it was sometimes tempting to stay at home when a winter storm raged through the town. At such times, Sara said, it would seem more attractive to read or write letters close to the fire. At other times she may have chosen to rearrange her small mineralogical collection of special stones and ores, which we know she collected and left to her daughter, Sara de Beveren-Pous, another member of the women's society.<sup>47</sup>

Anna Hurgronje was the only member who bequeathed funds to the women's society. Most other members were rich enough to have done so but instead favored their families, their church, their servants, or even their cat—as Suzanna de Chuy (1731–1816) did in her will. As second wife and widow of Isaäc Winckelman (1723–1796)—councillor, secretary, and burgomaster of the nearby town Vlissingen—and without children of her own, Suzanna de Chuy knew perfectly well that she could permit herself to be eccentric. And perhaps one of her eccentricities was her penchant for scientific and scholarly enterprises. She was one of the very few women who are registered as benefactors in the early annals of the *Zeeuwsch Genootschap der Wetenschappen*. Perhaps inspired by her husband—one of the first directors of this prestigious scientific society—she started to contribute to the society's scholarly, scientific, and art collections in 1771 by donating the four-volume *Letter- en oudheidkundige verlustigingen* [*Literary and Antiquarian Diversions*] by Petrus Nieuwland. Her last gift, granted in 1803, was a “beautifully manufactured ivory ball” that held several other balls in it, a curiosity of precision crafting comparable to the wooden Russian dolls we know today.<sup>48</sup>

<sup>46</sup> The instruments purchased by the women for the men's collection are noted in the letter from Albertina Luteijn, 7 Sept. 1893 (cit. n. 44). See also Schoute, “Geschiedenis van het *Natuurkundig Gezelschap te Middelburg*” (cit. n. 2), pp. 13, 17–18.

<sup>47</sup> For Sara Matthias's letter to her son see *Zeeuws Archief, Familie-Archief Mathias-Pous-Tak van Poortvliet*, no. 140, undated letter from Nov. 1795. Her mineral collection is noted in the inventory, *ibid.*, no. 126.

<sup>48</sup> With regard to Suzanna de Chuy's self-conscious eccentricity see the chosen wording in the will from 1 May till 2 Nov. 1805; for the bequest to her cat see the will of 13 June 1816: both wills are held at the *Zeeuws Archief, Archief I. Winckelman*, no. 4. For her donations see *Zeeuws Archief, Archief van het Koninklijk Zeeuwsch Genootschap der Wetenschappen*, no. 130, 31 Dec. 1771, no. 131, 28 Apr. 1778, no. 139, 8 Jan. 1803.

By that time the sisters Johanna Godefrida and Hillegonda Catharina Schorer had entered the Natuurkundig Genootschap, following in the footsteps of their mother, Johanna Philippine van Herzelee, their older sister Maria Petronella, and their nieces Jacoba Magdalena and Elisabeth Wilhelmina Schorer, who had enrolled in the society when it was founded in 1785. At that time, however, Johanna (born in 1767) and Hillegonda (born in 1770) were still too young. The Schorers are a fascinating family not only because so many of them were members of the Genootschap but also because of the small collection of scientific books, instruments, and rarities that Johanna and Hillegonda Schorer assembled in their house at the Rouaansche Kaai (the quay for trade with the French town Rouen) in Middelburg. The collection was auctioned in 1821 after the death of Hillegonda Schorer, but it probably belonged to both her and Johanna, who had died in 1809 and left all her personal belongings and half of her property to the beloved younger sister with whom she had lived so closely for so many years.<sup>49</sup>

The Schorer collection of books, instruments, and rarities was auctioned by the bookseller Salomon van Benthem for *f*2,332 and thus formed only a small part of Hillegonda Schorer's estate, which was estimated at a total value of *f*309,881. For us, however, it is by far the most interesting part, because it reveals that some of the Middelburg women were doing experiments by themselves at home. Since both Johanna and Hillegonda remained single, we can be sure that the books and instruments found in their home belonged to them personally. Among the more than forty titles that were dedicated to science or physico-theology, we find famous authors such as Nieuwentijt, 's Gravesande, and Nollet, but also others: Cavallo, Cuthbertson, Waitz, and Winkler on electricity; Baker on microscopes; Boysen, Colonne, Fockens, Glover, and Valmont de Bomare on natural history; Linnaeus, Miller, Pallas, and Kleeman on botany and zoology; and Ten Kate, Martinet, Ray, and Sander on natural philosophy from a physico-theological point of view. All foreign titles were represented in a Dutch translation. The collection of instruments included an electrical machine, a Leiden jar, a cylinder and discharger, a microscope, a telescope and reflector, a magnetic box, a magnetic viewer, and a kaleidoscope. In addition, there were several other small objects to be used for demonstrations of "physique amusante"—that is, objects that displayed dramatic lights, made sudden movements, or emitted melodic sounds when electrified with the electrical machine. Among other such amusing items were a tiny thunder house, a gun, and some bells. According to handwritten notes in the auction catalogue, a number of the latter objects, plus the electrical machine and its appurtenances, were bought by Widow Van Citters, who had commissioned two men to bid in her name.<sup>50</sup> Apparently the women of the Natuurkundig Genootschap were not

<sup>49</sup> The other half was to go to the two children of her other sister, Maria Lambrechtsen-Schorer, who had died in 1803. This was the moment at which Johanna decided to make her (new?) will. Hillegonda's will was also made in 1803; the phrasing is identical to that of Johanna's will, but with Johanna named as the main beneficiary. See the Zeeuws Archief, Archief N. C. Lambrechtsen, no. 68, and the Familie-Archief Schorer, no. 258. Regarding the auction of the sisters' collection see Zeeuwse Bibliotheek, Kluis, 1113 G 56: *Katalogus van eene fraaije verzameling boeken, in onderscheidene talen en wetenschappen . . . en eindelijk eenige bijzonderheden en rareiten, nagelaten door wijlen Jonkvrouwe H. C. Schorer* (Middelburg: Van Benthem, 1821).

<sup>50</sup> Because initials weren't mentioned, it is difficult to identify this widow with 100 percent certainty. A good candidate would be Julia Dorothea Wermelskircher (1753–1822), widow of Cornelis van Citters Aernoutsz (1750–1798). Julia had been a client of the bookseller and auctioneer Van Benthem for many years and lived at the Rouaansche Kaai—close to the Schorer sisters. It is possible that she purchased the machine for her daughter Sophie (1787–1863), who was not married at the time and lived at home with her mother. Sophie was certainly interested in experimenting and science: in 1825 she put an advertisement in the paper to buy a globe, and she bought books on animal magnetism. See the acquisition ledgers of Van Benthem, kept in the library of the University of Amsterdam, Series BBe 2-81 et seq. and BBe 2-24 et seq.

interested only in the serious side of the new experimental philosophy—as Rev. Ballot had advocated in his inaugural speech in 1785—but also in its potential for amusement. This “other” side of natural science, however, did not counteract but, rather, reinforced the practice of many scientists at the time; amusement was used as an adjunct to serious study.<sup>51</sup> In short, the presence of little electrical toys in Dutch instrument collections should not lead us to trivialize the scientific interests of their owners.

Although the Schorer collection is the only local example of an exclusively women’s collection, other members of the *Natuurkundig Genootschap* also had access to scientific facilities at home. Most of the women eventually married and thus may have used the collections of their husbands for further reading and experimenting, inspired by stories and events at their meetings. Although we may never be certain that these women did actually use the equipment, a number of local auction catalogues inform us that in several cases the necessary books and instruments were at least present and at their disposal.<sup>52</sup>

As to Johanna and Hillegonda Schorer, it is highly likely that their interest in science was further stimulated by their uncle, the regent Daniel Radermacher (1722–1803), who was not only one of the occasional lecturers but also the second chair of both the men’s and women’s scientific societies in Middelburg from 1790 until 1803 (see Figure 5). His enthusiasm and engagement in the women’s educational project seems to have equaled that of his friend and fellow Freemason Johan van de Perre. In April 1794 Radermacher donated a small planetarium to the women’s society. Perhaps it was less impressive than Van de Perre’s planetarium, but it certainly served the women’s educational needs. On that occasion he also gave a guest lecture on the solar system and demonstrated phenomena such as lunar eclipses with the planetarium. Two weeks later he repeated the astronomical lecture, word for word, at the men’s *Natuurkundig Gezelschap*. His presentation must have left a good impression in the collective memory: three years later he was invited for a recapitulation and demonstration of “his” planetarium for both societies, again on separate evenings.<sup>53</sup>

When Daniel Radermacher celebrated his eightieth birthday, in 1802, he received congratulations from the *Natuurkundig Genootschap* and several birthday poems, among them two by his nieces Maria Petronella and Hillegonda Schorer. They honored him for his role as chairman of the women. By that time, however, Radermacher had already started to delegate some of his responsibilities to others. In 1801 he turned the *Genootschap*’s archive and banknotes (then with a value of *f* 3,198) over to Johanna Schorer, who thereupon became the treasurer and secretary of the women’s society.<sup>54</sup> Possibly she was the first woman to be appointed to this office: the ministers Ballot and Drijfhout had taken on this task at least until 1797, after which there might have been a vacancy as the result of Ballot’s unexpected death.

Ballot’s lessons for the women were continued by Johannes de Kanter, a notary and—from a scientific perspective—a self-made man, who would serve the women’s society as their permanent lecturer until far into the nineteenth century. In 1799 De Kanter would also be appointed as the only lecturer for the men’s society. By that time the men were having difficulties in finding enough capable teaching members and so adopted the system

<sup>51</sup> Sutton, *Science for a Polite Society* (cit. n. 14), esp. pp. 338–341.

<sup>52</sup> See the auction catalogues, held in the Zeeuwse Bibliotheek, of E. Ph. van Visvliet (1799/1800), D. Radermacher (1803), P. Changuion (1805), A. Drijfhout (1827), D. J. de Superville (1847), G. J. Ackermans (1851), and P. M. de Ligny (1894).

<sup>53</sup> The texts of his lectures have been preserved in the Zeeuws Archief, Familie-Archief Schorer, no. 526.

<sup>54</sup> Zeeuws Archief, Familie-Archief Schorer, nos. 515 (birthday poems), 510.



**Figure 5.** Daniel Radermacher (1722–1803), the second chairman of the women's society, who donated a small planetarium to the women and occasionally lectured on astronomy. Courtesy of the Iconografisch Bureau/RKD, The Hague.

of having one permanent lecturer that the women had used from the start. De Kanter was a voluminous writer on diverse historical and scientific subjects. The titles of his books evince a special passion for planets and comets, floods, tides and water management, geometry, weights and measures, barometers, and other measuring instruments. Probably the same topics were discussed in his lessons for the ladies and gentlemen of Middelburg, though we may never be certain since all his unpublished manuscripts were destroyed, following the terms of his will, after his death in 1841.<sup>55</sup> We do know, however, that when De Kanter published his two-volume astronomical work *Nieuwe Ecliptische Tafelen* in 1803 Johanna Schorer was the only woman among the subscribers. With the sisters Schorer and De Kanter we have entered the nineteenth century, a period we will have to reserve

<sup>55</sup> Schoute, "Geschiedenis van het Natuurkundig Gezelschap te Middelburg" (cit. n. 2), pp. 24–25 (permanent lecturer); and A. J. van der Aa, *Biographisch woordenboek der Nederlanden* (Haarlem, 1859), Vol. 4, pp. 11–12 (on De Kanter).

for another occasion.<sup>56</sup> At this point it is more important to ask the question, How did this women's society fit in the late eighteenth-century world of the Dutch Republic?

### THE DUTCH CONTEXT

While the women's society of Middelburg may have been exceptional in that it was explicitly organized from a gendered standpoint—in contrast to the more implicit gender bias of the scientific societies of men—it was by no means unusual in its scientific orientation, curriculum, and organizational structure. In the course of the eighteenth century quite a few scientifically active circles were formed in cities of the Dutch Republic, and in the second half of the century a considerable number of them became formally institutionalized as “amateur” societies comparable in functioning to the *Natuurkundig Genootschap*. The pursuit of useful knowledge, sociability, and the progress of humankind were among the more obvious Enlightenment ideals that motivated Dutch citizens to participate in these local scientific societies. Physico-theology was another source of inspiration. Moreover, Dutch public opinion in the late eighteenth century was haunted by the idea of national decline.<sup>57</sup>

The Golden Age of the Dutch Republic was perceived to be dimming, and reformers believed change to be imperative. Dutch Enlightenment writers blamed the republic's waning economic and political power on moral decay and a failing educational system. Contemporaries believed that this decline—which we now know was relative rather than absolute—could and should be countered by a stronger engagement of Dutch citizens with their fellow men and their nation, to be expressed in activities that would benefit society. The readiness to educate oneself and to share knowledge would have a beneficial effect on society, they insisted. Utilitarian and reformist ideals infused late Enlightenment discourse, and subsequently the scientific activities of Dutch societies began to focus on practical problems instead of “purely” scientific questions. This was particularly true for societies in Zeeland: since the invention of the telescope in Middelburg in 1608 the province had developed a strong tradition and sustained interest in applied science.<sup>58</sup>

The geographically isolated position of the island of Walcheren did not imply a political or cultural isolation. The commercial interests of the region resulted in a cosmopolitan orientation, and newspapers, periodicals, and books kept the social elites informed of what

<sup>56</sup> Dorothée Sturkenboom, *De elektrische kus* (Amsterdam: Augustus, in press), a forthcoming book on the women's society.

<sup>57</sup> On Dutch scientific societies see R. Hooykaas, “De natuurwetenschap in ‘de eeuw der genootschappen,’” in *NG 200: Natuurkundig Gezelschap te Utrecht 1777–1977* [Utrecht, 1977], pp. 4–38; Mijnhardt, *Tot heil van 't menschedom* (cit. n. 4); H. A. M. Snelders, “Professors, Amateurs, and Learned Societies: The Organization of the Natural Sciences,” in *The Dutch Republic in the Eighteenth Century: Decline, Enlightenment, and Revolution*, ed. Margaret C. Jacob and Wijnand W. Mijnhardt (Ithaca, N.Y./London: Cornell Univ. Press, 1992), pp. 308–323; Rienk Vermij, “Nieuwe wijn in oude zakken? Iets over de plaats en functie van genootschappen in de maatschappij van het ancien régime,” *Tijdschr. Gesch.*, 1999, 112:24–46; Roberts, “Going Dutch” (cit. n. 6), pp. 378–387; and Gerard Schulte Nordholt, “Are All Men Created to Be Equal? Dutch Cultural and Scientific Societies in the Decades around 1800,” *Achttiende Eeuw*, 1999, 31:163–172 (also available on the web through [www.schultenordholt.org/societies1800](http://www.schultenordholt.org/societies1800)). On the perception of decline see Mijnhardt, “The Dutch Enlightenment: Humanism, Nationalism, and Decline,” in *Dutch Republic in the Eighteenth Century*, ed. Jacob and Mijnhardt, pp. 197–223, esp. pp. 206–211.

<sup>58</sup> On the invention of the telescope see G. L. E. Turner, “Animadversions on the Origins of the Microscope,” in *The Light of Nature: Essays in the History and Philosophy of Science Presented to A. C. Crombie*, ed. J. D. North and J. J. Roche (Dordrecht/Boston: Nijhoff, 1985), pp. 193–207, esp. pp. 201–204. On the particular interest in applied science see Willem Frijhoff, “Zeelands universiteit: Hoe vaak het mislukte en waarom,” *Arch. Zeeuwsch Genootsch. Wet.*, 1987, pp. 7–25; and Jeanine Dekker, “Over heren van stand en culturele erfenamen: Wetenschapsbeoefening in het Zeeuws Genootschap bezien in 't licht van de tijd,” *Zeeland*, 2001, 10:2–9.

was going on elsewhere. In Middelburg science, commerce, cosmopolitanism, and utilitarian and reformist ideals combined with a strongly religious culture and a specific sociopolitical structure where enormous amounts of money and power were concentrated in the hands of a small number of families, who, in addition, very much depended on each other for daily contacts and diversions. Somehow all these factors together triggered the foundation of a unique institution—an institution of a sort that women elsewhere at that moment could only dream of.<sup>59</sup>

Elements such as religious values, the fear of luxury and decay, the advantages of organized sociability, and the societal benefits of scientific interest are all in evidence in Van de Perre's opening speech of 1785. The *Natuurkundig Genootschap* was, to be sure, not the first group of Dutch women who received lessons in natural philosophy, but it was the first with an organizational structure that guaranteed a term of life independent of the individual motives of their male lecturers. The same cannot be said for the thirty-three women who enrolled in the special women's course in experimental philosophy given by the Amsterdam private lecturer Benjamin Bosma in the years 1765–1772. When Bosma got busy with another, more interesting project—teaching the sons of Amsterdam merchants—he cut down on his evening lessons and stopped lecturing to the women. The Middelburg society was also different from the group of thirty to fifty young women in the Dutch town of Zutphen who in 1778 observed experiments in physics and had to study natural history as part of their catechetical training by the physico-theologian Reverend J. F. Martinet. His enormously popular *Katechismus der natuur*, published in four volumes from 1777 to 1779, was originally written as a manual for the lessons in religion and philosophy that he offered to other groups as well. In twenty-two dialogues between a teacher and (male) pupil, Martinet explained God's creation in detail, combining insights from theology, biology, astronomy, geology, physics, meteorology, philosophy, and psychology. He also published a special edition for children, *Kleine catechismus der natuur voor kinderen*, soon translated into French, English, and German. Although beyond the scope of this essay, all these scientific books for children are also a part of the story of assimilation.<sup>60</sup>

While the structure and conditions of these other Dutch educational projects for women were different from those in Middelburg, the motivation of the women involved may very well have been the same. Martinet intended his pupils to become sensible spouses and knowledgeable mothers.<sup>61</sup> The Amsterdam women too were for the most part (future) mothers and may have shared the wish of the Middelburg women to be able to teach their children by themselves. They may have had other motives as well, sharing the many and varied reasons that their male relatives had to engage in sociable and scientific activities:

<sup>59</sup> That other women did indeed dream of educational institutions exclusively for women can be read in Schiebinger, *Mind Has No Sex?* (cit. n. 13), pp. 132–136. In other countries, however, they would have to wait until the nineteenth century to see the realization of this dream. Regarding Middelburgers' information about the outside world see J. J. Kloek and W. W. Mijnhart, *Leescultuur in Middelburg aan het begin van de negentiende eeuw* (Middelburg: Zeeuwse Bibliotheek, 1988).

<sup>60</sup> On Bosma see Marja Keyser, "Het intekenboek van Benjamin Bosma: Natuurwetenschappelijk en wijsgerig onderzoek te Amsterdam, 1752–1790: Een verkenning," *Jaarverslagen Koninklijk Oudheidkundig Genootschap*, 1986, 124–127:65–81, esp. pp. 70, 80. On Martinet see Paasman, *J. F. Martinet* (cit. n. 28), pp. 29–65, esp. pp. 41–42. For his publications see J. F. Martinet, *Katechismus der natuur*, 4 vols. (Amsterdam, 1777–1779); and Martinet, *Kleine catechismus der natuur voor kinderen* (Amsterdam, 1779). For more on scientific books for children see James A. Secord, "Newton in the Nursery: Tom Telescope and the Philosophy of Tops and Balls, 1761–1838," *History of Science*, 1985, 23:127–151; and Aileen Fyfe, "Reading Children's Books in Late Eighteenth-Century Dissenting Families," *Historical Journal*, 2000, 43:453–473.

<sup>61</sup> Paasman, *J. F. Martinet*, pp. 41–42.

curiosity, the appeal of diversion, the need for social status, a purely intellectual interest in new things and theories, the longing to feel and understand God's universal presence, or the belief that scholarly and scientific enterprises were useful for the development of society at large. Some motives, however, were more easily accepted than others. In the Dutch setting of national decline, the intellectual and moral education of the next generation may have proved a particularly strong argument for women, especially in combination with the widespread Enlightenment ideal of progress for all. Dutch women could educate themselves in order to fulfill their civic duties and improve the instruction of future generations.

Women did not have to be mothers to contribute to the process of improvement and in the course of it ensure the assimilation of science into the fabric of home life. The first successful initiative to modernize vocational training for Dutch boys came from a rich widow, Maria Duyst van Voorhout, *Vrijvrouw* van Voorhout, who upon her death in 1754 left her entire fortune for the foundation of three technical schools for orphans. Other Dutch women chose the road of writing and publishing. Physico-theological elements can be traced in the poetry of several Dutch women, including the well-known educationalists Betje Wolff (1738–1804) and Petronella Moens (1762–1843), both of Zeeland origin. A Middelburg friend of Wolff, Petronella Johanna de Timmerman (1724–1786), also communicated her considerable scientific knowledge in poems. As young woman and member of the circle around the Middelburg astronomer Jan de Munck (see Figure 6), a friend of her father, De Timmerman watched comets from his private observatory in Middelburg. She may also have attended the lectures of the physician Leonardus Stocke in the early years of the gentlemen's society, a few decades before its formal establishment in 1780. But for the most part she was self-taught. According to her second husband, the Utrecht professor in philosophy, mathematics, and astronomy Johann Friedrich Hennert, De Timmerman had plans to write an introduction to physics, astronomy, and philosophy, following the *Lettres à une princesse d'Allemagne* of Leonhard Euler. A brain hemorrhage at the age of fifty-two prevented the realization of that project.<sup>62</sup> What all these Dutch women, and many other European women of the time, had in common was a strong interest in natural philosophy and the desire to share this interest with others—readers, friends, husbands, children. Unwittingly, they participated in something that, by 1800, had become a distinctively Western enterprise: the assimilation of science, both as ideology and as practice, to a degree unknown earlier or elsewhere.

#### CONCLUSION

We have positioned the ideals and activities of the Middelburg women against a Dutch background of Protestant religiosity, Enlightenment projects, and perceived decline. No evidence in the surviving records tells us why women organized around science in Middelburg and not in Amsterdam or other places. That Middelburg was the site of the first officially constituted scientific society for women may have been a consequence of the narrowness and wealth of its elite and its relatively isolated geography. In any case, more important than knowing the why of this particular site is knowing that it existed and possessed historical meaning.

<sup>62</sup> On the technical schools for orphans see E. P. de Booij, "Hoger beroepsonderwijs op de fundaties van de *Vrijvrouw* van Renswoude, 1756–1811," in *Onderwijs en opvoeding in de achttiende eeuw* (cit. n. 36), pp. 93–102. On De Timmermann see Zuidervaart, "*Konstgenoten*" en hemelse fenomenen" (cit. n. 2), pp. 323–325, 620–622; and Schenkeveld–Van der Dussen, ed., *Met en zonder lauwerkrans* (cit. n. 10), pp. 583–588.



**Figure 6.** Family portrait of the Middelburg architect and astronomer Jan de Munck (1678–1768), tutor of the Middelburg poet and “amateur” astronomer Petronella Johanna de Timmerman (1724–1786). At the end of the nineteenth century De Munck’s great-granddaughter, Johanna Catharina Van der Feen–Ackermans (1812–1897), was among the last members of the women’s society. Undated drawing by Thibout Regters. Courtesy of the Rijksprentenkabinet, Amsterdam.

One question that is seldom asked in the various histories of gender and science can now finally be addressed: What did gender have to do with the integration and assimilation of scientific learning into Western culture? We are arguing here that it had an important role to play in that story. In the second half of the eighteenth century the new natural sciences gradually became integrated into Dutch domestic life, not only through the private collections of instruments and books assembled by men but also through the efforts of comfortable, but ordinary, women to master this new field of knowledge—whether in the interest of their families, to benefit society, or purely to please themselves. While many Dutch writers in the late eighteenth century insisted on the family and household as the destined sphere of activity for women,<sup>63</sup> the evidence indicates that in those very households quite a few women may have been attending, assisting in, and performing scientific experiments. Indeed, Van de Perre’s inaugural speech even suggests that it was precisely the widespread ideal of a tenderly loving wife whose purpose in life was to take care of her husband and children that offered women in the Dutch Republic legitimation to read books on physics and engage in scientific activities—if necessary at meetings outside their own homes.

<sup>63</sup> Sturkenboom, *Spectators van hartstocht* (cit. n. 36), pp. 187–193, 317–344.

The integration of science into the very fabric of daily life, which made it something that anyone claiming to be educated had to know, would not have been so successful without its domestication. Our histories take it for granted that sometime after 1750 Westerners of all ages became interested in science, but we do not see that households, leisure-time activities, conversations at dinner tables, and advances in female education may have been critical elements in that slow but remarkable process, apparent by the late eighteenth century throughout the old and new worlds.<sup>64</sup> Before 1800, when science in the form of physics, mechanics, and advanced mathematics had not become a part of every secondary school curriculum, it resided in other venues. Its mores, ideology, and practice had seeped into elite households—as well as into artisanal ones—with consequences that can still be traced in educated culture. The story of gender and science may indeed be grim overall, but it is not without glimpses of light or elements of meaning for the larger story of the assimilation of science into everyday thought and practices. Some of that light and meaning can be dimly perceived among the fragments left behind by the elite women of Middelburg and their male cosponsors and lecturers.

#### APPENDIX

##### MEMBERS OF THE NATUURKUNDIG GENOOTSCHAP DER DAMES IN MIDDELBURG (1785–1887)

A more extensive prosopography with all the information retrieved on these women and references to the archival resources used will be deposited in the Zeeuws Archief, Hofplein 16, P.O. Box 70, 4330 AB Middelburg ([www.zeeuwsarchief.nl](http://www.zeeuwsarchief.nl)). Access: Archief Natuurkundig Gezelschap. Identifying name: “Collectieve Biografie Damesleden.” Note the significant wealth recorded in many of the legal documents.

\* Female relative(s) in the Natuurkundig Genootschap

# Male relative(s) in the Natuurkundig Gezelschap

+ Male relative(s) in the Zeeuws Genootschap der Wetenschappen

##### *First Members, Recorded in 1785*

1. Anna Petronella Ballot-Buys (1755–1829) # +  
Parents: Anna van der Dorst and Anthony Buys  
Husband: (1784) Christophorus Henricus Didericus Ballot, minister, lecturer of the women’s society; his second marriage
2. Sara Maria de Beveren–Pous (1750–1834) # +  
Parents: Sara Catharina Mathias and Pieter Pous, J.D., regent of the VOC, member of the town council of Zierikzee  
Husband: (1774) Wilhelm Aarn. de Beveren, J.D., a minister’s son, member of the High Council of Finances and Maritime Affairs in Den Haag  
Capital: Inherited *f* 48,750 from her mother
3. Adriana Susanna Boddaert-Ackerveld (1757–1799) #  
Parents: Catharina Wilhelmina Pfeijffer and Johan Ackerveld  
Husband: (1776) Phoenix Isaac Boddaert, J.D., successively justice in the Court of Vlaanderen at Middelburg, regent of the VOC, pensionary of Veere, member of the Estates of Walcheren, tax collector-general of Zeeland
4. Johanna Suzanna du Buisson–Becius (ca. 1738–1811)  
Parents: Susanna de Feyffer and Assuerus Becius, teller of the Exchange Bank and dean of the grocer’s guild  
Husband: (1759) Isaac Brungne du Buisson, J.D., attorney of the town of Middelburg  
Capital: Left *f* 130,107

<sup>64</sup> For the marketing strategies that further stimulated this process see Secord, “Newton in the Nursery” (cit. n. 60); and Alice N. Walters, “Conversation Pieces: Science and Politeness in Eighteenth-Century England,” *Hist. Sci.*, 1997, 35:121–154.

5. Johanna Maria Changuion–de Beaufort (1741–1800) \* # +  
 Parents: Johanna Catharina Schorer and Pieter Bernard de Beaufort, successively councillor of Tholen, member of the Provincial Estates of Zeeland, and councillor of the Admiralty of Zeeland  
 Husband: (1762) Paul Ch. Changuion, J.D., successively member of the town council, pensionary, and clerk of Vlissingen, later clerk of Middelburg
6. Anna Suzanna van Citters (1746–1814)  
 Parents: Anna Barbara Duvelaar and Aarnout van Citters, J.D., member of the electoral council of Middelburg, attorney of the VOC, tax collector, shareholder of the WIC
7. Adriana van Citters–van Dishoeck (1746–1785) \*  
 Parents: Cornelia Adriana Ockerse and her first husband Anthony Pieter van Dishoeck, J.D., squire of Domburg, Oudhuizen, and Ter Horst  
 Husband: (1763) Wilhem Aarnout van Citters, J.D., regent of the VOC, alternately member of the town council and burgomaster of Middelburg, later pensionary of Zeeland; his first marriage
8. Susanna Maria Kien van Citters–van Hogendorp (1759–1832) # +  
 Parents: Maria Elizabeth Radermacher and Count Gijsbert van Hogendorp, J.D., member of the town council of Middelburg  
 Husband: 1. (1779) Wilhem Aernoud Kien van Citters, J.D., successively member of the town council and burgomaster of Middelburg  
 2. (1797) Wilhem Aarnout van Citters, J.D., regent of the VOC, alternately member of the town council and burgomaster of Middelburg, later pensionary of Zeeland; his third marriage
9. Magdalena Adriana Kien van Citters–Steengracht (1732–1799) \* # +  
 Parents: Anna Maria Spiering and Nicolaas Steengracht, J.D., successively member of the town council and burgomaster of Veere, member of the Provincial Estates of Zeeland, member of the Estates General in Den Haag  
 Husband: (1755) Cornelis Kien van Citters, J.D., squire of Ter Hooge, member of the town council and burgomaster of Middelburg, regent of the VOC, later steward-general of Zeeland Bewester Schelde
10. Margrietha Drijfhout–van Beem (?–1804) # +  
 Parents: ?  
 Husband: (1770) Ane Drijfhout, minister, lecturer of the men's society, treasurer of the women's society
11. Anna Elisabeth Fremerij–van Essen (?–1791) \* # +  
 Parents: Susanna Wopkens, a minister's daughter, and Jacobus van Essen, accountant of the Exchange Bank in Middelburg  
 Husband: (1776) Johannes de Fremery, minister, professor in theology at the Illustrious School in Middelburg  
 Capital: Left *f* 79,296
12. Cecilia van Gelre–van Vrijberghe (1740–1825) \* +  
 Parents: Isabella Johanna de Huybert and Johan François van Vrijberghe, lieutenant-general  
 Husband: (1761) Pieter Paul van Gelre, J.D., member of the town council of Zierikzee and later councillor of the Admiralty of Zeeland  
 Capital: After 1810 she had the usufruct of her husband's inheritance of *f* 443,721
13. Arnoldina Catharina Godin–van der Poort (ca. 1761–1828) #  
 Parents: Petronella Arnoldina Pasques de Chavennes and Evert van der Poort, justice in the Court of Vlaanderen at Middelburg  
 Husband: 1. (1779) Guillaume Frederik Godin; his second marriage  
 2. (1797) Jean Francois Robert de la Mare, commander of the brigade in service of the French Republic

14. Anna Elisabeth Hinlopen-Schorer (1761–1817) \* # +  
 Parents: Magdalena van Citters and Johan Guilelmus Schorer, member of the town council of Middelburg  
 Husband: (1790) Jan Hinlopen, successively clerk of the town council of Utrecht, clerk of the Departmental Administration of Utrecht, State Councillor of King Louis Napoleon
15. Geertruida Anna Elisabeth Hoffman-Bruistens #  
 Parents: ? and A. Bruistens, minister  
 Husband: (1780) Bernhardus Hoffman, minister and lecturer of the men's society
16. Anna Huijssen van Kattendijke–Hurgronje (1726–1791) # +  
 Member: One of the first three female directors in 1785  
 Parents: Maria Anna Amsincq Paulsdr. and Phoenix Isaacksz Hurgronje  
 Husband: (1749) Alexander Johan Hieronymus Huysen, squire of Kattendyke and Wytvliet, member of the town council of Middelburg
17. Anna Elisabeth Hurgronje-Wijbo (1750–?) # +  
 Parents: Elisabeth Johanna Canzius (1722–1752) and Johannes Wijbo, J.D., attorney of the Generality of the Dutch Republic and later Attorney General of the Court of Holland, Zeeland, and West-Friesland  
 Husband: (1792) Paul Hurgronje
18. Anna Catharina Snouck Hurgronje–Elias (1746–1796) \* # +  
 Parents: Anna Margarita Velters and Steven Elias, general major  
 Husband: 1. (1766) Steven Matthijs Snouck Hurgronje, member of the town council of Vlissingen and later of Middelburg, regent of the VOC, registrar of the mint of Zeeland  
 2. (1789) Wilhem Aarnout van Citters, J.D., regent of the VOC, alternately member of the town council and burgomaster of Middelburg, later pensionary of Zeeland; his second marriage  
 Capital: Owned *f* 100,620 when she married in 1766
19. Maria Petronella Lambrechtsen-Schorer (1760–1803) \* # +  
 Parents: Johanna Philippine van Herzeele and Wilhelm Schorer Joh. Assz., J.D., alternately member of the town council and burgomaster of Veere, later councillor of the Admiralty of Zeeland  
 Husband: (1790) Nicolaas Cornelis Lambrechtsen, J.D., successively pensionary of Vlissingen, member of the General Assembly of the Batavian Republic, State Councillor of King Louis Napoleon, member of the town council of Middelburg
20. Cecilia Maria Lantsheer-Steengracht (1764–1816) \* # +  
 Parents: Jacoba Magdalena Ockerse, lady of Oosterland, Sint Jansland, and Oosterstein, and Johan Steengracht, J.D., successively member of the town council and pensionary of Veere, attorney of the Admiralty of Zeeland, and member of the electoral council of Middelburg  
 Husband: 1. (1788) Johan Pieter Lantsheer, J.D., clerk of the Admiralty of Zeeland, member of the town council of Middelburg  
 2. (1803) Abraham van Doorn, J.D., successively member of the town council and burgomaster of Vlissingen, member of the Legislative Body of the Batavian Republic, and, later, of the Kingdom of Holland and of the Empire of France, bailiff of Zeeland, State Councillor of King Louis Napoleon; his second marriage
21. Sara Catharina Pous-Mathias (1720–1809) \*  
 Parents: Sara Wilhelmina Sandra and Johan Constantijn Matthias, burgomaster of Middelburg  
 Husband: (1743) Pieter Pous, J.D., member of the town council of Zierikzee, regent of the VOC  
 Capital: Left *f* 92,500
22. Anna Maria Mathias Pous–Steengracht (1753–1828) \* # +  
 Member: One of the first three female directors in 1785  
 Parents: Jacoba Wilhelmina Van Gelre and Adriaan Steengracht, J.D., squire of Grijskerke and Poppendamme, successively pensionary of Tholen and Middelburg, clerk of the Provincial Estates, pensionary of Zeeland

- Husband: 1. Bonifacius Mathias Pous, regent of the VOC and successively justice in the Court of Vlaanderen at Middelburg, member of the town council of Middelburg, member of the Provincial Estates of Zeeland, and member of the National Assembly  
 2. (1801) Johannes de Fremery, minister, professor in theology at the Illustrious School in Middelburg; his second marriage  
 Capital: Left *f* 447,124
23. Sara Cornelia Paspoort (1765–?) \* #  
 Parents: Elisabeth Maria Schorer and Cornelis Galenus Paspoort, regent of the VOC and burgomaster of Middelburg
24. Elisabeth Maria Paspoort-Schorer (1732–1802) \* # +  
 Parents: Johanna Coenraads and Daniel Schorer, clerk of the Council of Vlaanderen  
 Husband: (1756) Cornelis Galenus Paspoort, regent of the VOC and burgomaster of Middelburg; his second marriage
25. Jacoba van de Perre–van den Brande (1735–1794) \* # +  
 Member: One of the first three female directors in 1785  
 Parents: Maria van Reigersberg and Johan Pieter van den Brande  
 Husband: (1760) Johan Adriaen van de Perre, J.D., squire of Nieuwerve en Welsing, member of the town council of Middelburg, later representant of the “eerste edele” (the Dutch stadtholder) in Zeeland, first chairman of the women’s society  
 Capital: Left *f* 1,500,246
26. Johanna Susanna van de Perre–van der Mandere (1747–1790) \*  
 Parents: Petronella Geertruda van Berckel and Jacob van de Mandere (1707–1775), J.D., squire of Ouderkerk, regent of the VOC, member of the town council of Vlissingen  
 Husband: (1765) Paulus Ewaldus van de Perre, J.D., member of the town council of Middelburg
27. Clasina Cornelia van de Perre de Westcapelle–van Bronckhorst (?–1811) # +  
 Parents: Johanna Meinarda van Cleeff and Adrianus van Bronckhorst, member of the town council and burgomaster of Utrecht  
 Husband: (1780) Martinus Johannes Veth van de Perre, regent of the VOC, member of the town council and burgomaster of Middelburg
28. Clasina Petronella Radermacher–de Kokelaer (1734–1796) # +  
 Parents: Josina Buteux and Pieter de Kokelaer, J.D.  
 Husband: 1. Daniel Jan Bouwens, J.D.  
 2. (1782) Daniel Radermacher, J.D., squire of Nieuwerkerk, regent of the VOC, member of the town council of Middelburg, second chairman of the women’s society; his second marriage  
 Capital: Left a debit balance of *f* 24,000 to her husband
29. Elizabeth Josina van Raaij–van Hemert (?–before 1814)  
 Parents: ? Probably Hillegonda Wilhelmina Cours and Jacob Hendrik van Hemert, J.D., member of the town council of Middelburg  
 Husband: Herman Hendrik van Raaij, J.D., former clerk and attorney of the domain of Wisch (Gelderland)
30. Elisabeth Wilhelmina Schorer (1752–?) \*  
 Parents: Petronella Maria de Beaufort and Johan Schorer, J.D., justice in the Court of Vlaanderen at Middelburg, member of the electoral council of Middelburg, tax collector-general of the Province and the Admiralty of Zeeland
31. Jacoba Maria Schorer (1754–1827) \*  
 Parents: Petronella Maria de Beaufort and Johan Schorer, J.D., justice in the Court of Vlaanderen at Middelburg, member of the town council of Middelburg, tax collector-general of the Province and the Admiralty of Zeeland  
 Capital: Left *f* 94,658

32. Johanna Philippine Schorer–van Herzeele (1735–1790) \* # +  
 Parents: Jeanne le Boullenger and Pieter van Heerzeele, merchant in Rotterdam  
 Husband: (1759) Wilhelm Schorer Joh. Assz., J.D., alternately member of the town council and burgomaster of Veere, later councillor of the Admiralty of Zeeland
33. Johanna Cornelia Schorer-Thibaut (1766–1788) \* # +  
 Parents: Barbara Adriana van de Perre and Willem Thibaut, J.D., squire of Aagtekerke, member of the electoral council of Middelburg, clerk of the Admiralty of Zeeland  
 Husband: (1786) Jacob Hendrik Schorer, J.D., successively member of the town council of Middelburg, member of the Estates General in Den Haag, burgomaster of Middelburg, governor of Zeeland in service of King Willem I
34. Dana Elisabeth Schorer–van Visvliet (1767–1824) \* # +  
 Parents: Maria Catharina Wijbo and Egbert Philip van Visvliet, J.D., M.D., chairman of the electoral council of Middelburg  
 Husband: (1788) David Isaac Schorer, J.D., member of the Provincial Estates of Zeeland, burgomaster of Middelburg, regent of the “Commercie Compagnie”  
 Capital: Joined estate with her husband *f*296,492
35. Jacoba Wilhelmina Steengracht–van Gelre (1733–1807) \* +  
 Parents: Anna Margarethea Ockerse and Johannes Herman van Gelre, J.D.  
 Husband: (1752) Adriaan Steengracht, J.D., squire of Grijskerke and Poppendamme, successively pensionary of Tholen and Middelburg, clerk of the Provincial Estates of Zeeland, pensionary of Zeeland  
 Capital: Left *f*370,876
36. Anna Petronella de Superville–van Visvliet (1763–1823) \* # +  
 Parents: Susanna Catharina van Heemskerck and Meinard van Visvliet, J.D., accountant of the VOC, pensionary of Middelburg  
 Husband: (1799) Daniel Jacques de Superville, regent of the VOC, managing director of customs and excise  
 Capital: Left *f*186,154
37. Cornelia Wilhelmina Thibaut–van Hoorn (1747–?) \* # +  
 Parents: Margaretha Johanna Ockerse and Nicolaas van Hoorn, J.D., squire of Burgh and Crayesteyn, alternately member of the town council and burgomaster of Vlissingen, regent of the VOC  
 Husband: (1775) Willem Thibaut, J.D. squire of Aagtekerke, member of the electoral council of Middelburg, clerk of the Admiralty of Zeeland; his third marriage
38. Maria Petronella Versluijs–van den Brande (1766–1825) \* # +  
 Parents: Susanna Maria Tresel Bevers and Johan Pieter van den Brande, J.D., squire of Gapinge, Krabbendijke, Kleverskerke, and Couwerve, member of the town council of Middelburg  
 Husband: (1794) Marinus Emanuel Cornelis Versluijs, J.D., successively member of the town council of Middelburg and of the Provincial Estates of Zeeland, consul for the United States of America  
 Capital: Inherited *f*605,082 from aunt and mother
39. Anna Johanna Vis-Grymalla (1767–1821) +  
 Parents: Sara Jacoba Huyge and Pieter Lucas Grymalla, member of the electoral council of Middelburg  
 Husband: 1. (1787) Cornelis Vis (1757–1809), member of the town council of Middelburg  
 2. (1810) Gerardus Blaubeen, minister; his second marriage
40. Anna Henrietta van Visvliet (1746–1821) \* # +  
 Parents: Johanna Margaretha Radaeus and Meyndert van Visvliet, M.D., member of the town council of Middelburg and professor in medicine at the Illustrious School  
 Capital: Left *f*42,513
41. Petronella Elisabeth Visvliet–van Goens (1754–1807) \* # +

- Parents: Dana Barbara Pottey and Rijklof Gerbrand van Goens, member of the town council of Vlissingen, later pensionary of Middelburg  
 Husband: (1777) Egbert Philip van Visvliet, J.D., M.D., chairman of the electoral council of Middelburg; his second marriage
42. Susanna Catharina Visvliet–van Heemskerck (1741–1785) \* # +  
 Parents: Agnes Marguerita Albinus and Count Coenraad van Heemskerck, squire of Achttienhoven  
 Husband: (1762) Meinard van Visvliet, J.D., accountant of the VOC, pensionary of Middelburg
43. Susanna Johanna Winckelman–de Chuy (1731–1816) # +  
 Parents: Catharina Reynera Reiniersen Thooren and Claude de Chuy, burgomaster of Vlissingen  
 Husband: (1770) Isaïc Winckelman, J.D., member of the town council and burgomaster of Vlissingen; his second marriage  
 Capital: Left at least f 226,500 but probably more
44. Pieterrella Suzanna van Zeebergh–Wijbo (1740–1800) #  
 Parents: Pieterrella Lacroix and Bartholomeus Wijbo  
 Husband: (1759) Pieter van Zeebergh, J.D.

*Members of the Nineteenth Century* (chance findings; no membership list)

45. Christina Geertruida Sara Ackermans (1819–1876) \* # +  
 Member: Director, 1866–1876  
 Parents: Sara Petronella van Rosenthal and Gerardus Jacobus Ackermans, J.D., Attorney General of the Provincial Court of Zeeland  
 Capital: Left f 306,350
46. Sara Petronella Ackermans–van Rosenthal (1787–1851) \* # +  
 Member: Reference in 1846  
 Parents: Martina Geertruid Alvarez and Wilhelm van Rosenthal  
 Husband: (1811) Gerardus Jacobus Ackermans (1788–1849), J.D., Attorney General of the Provincial Court of Zeeland  
 Capital: Left f 308,386
47. Anna Ferdinanda Becius-Changuion (1770–1833) \* # +  
 Parents: Johanna Maria de Beaufort and Paul Changuion, J.D., successively member of the town council, pensionary, and clerk of Vlissingen, later clerk of Middelburg  
 Husband: (1812) Johan Assuërus Becius, J.D., member of the town council of Middelburg and, later, of the Provincial Estates of Zeeland, steward-general of the count's domains in Zeeland; his second marriage  
 Capital: Left f 70,000
48. Maria Fokker–van den Broecke (1819–1882) \* # +  
 Member: Director, 1872–1875  
 Parents: Maria Jacoba Diemont and Abraham van den Broecke, broker, member of the town council of Middelburg and, later, of the Provincial Estates of Zeeland  
 Husband: (1840) Antoni Herman Gerard Fokker, merchant, broker, ship-owner, and member of the town council of Middelburg  
 Capital: Left f 270,320
49. Hillegonda Catharina Schorer (1770–1820) \* # +  
 Member: Reference in 1802  
 Parents: Johanna Philippina van Herzeele and Wilhelm Schorer Joh. Assz., J.D., alternately member of the town council and burgomaster of Veere, later councillor of the Admiralty of Zeeland  
 Capital: Left f 309,881
50. Johanna Godefrida Schorer (1767–1809) \* # +  
 Member: Treasurer in 1801  
 Parents: Johanna Philippina van Herzeele and Wilhelm Schorer Joh. Assz., J.D., alternately member of the town council and burgomaster of Veere, later councillor of the Admiralty of Zeeland

51. Wilhelmina Maria Magdalena Schorer (1789–1857) \* # +  
 Member: Treasurer in 1846  
 Parents: Dana Elisabeth van Visvliet and David Isaac Schorer, J.D., member of the Provincial Estates of Zeeland, burgomaster of Middelburg, regent of the “Commercie Compagnie”  
 Capital: Left *f* 58,190
52. Johanna Maria Tak van Poortvliet–Pous (1805–1871) \* # +  
 Member: Director, 1866–1870  
 Parents: Susanna Petronella de Fremery and Pieter Pous, J.D., administrator of the archives of the VOC and WIC, member of the town council of Middelburg, and later administrator of the Zeeland Treasury  
 Husband: 1. (1829) Petrus Johannes Koolhaas, minister  
 2. (1838) Adriaan Tak (1805–1873), squire of Poortvliet, minister  
 Capital: Left *f* 1,105,572
53. Johanna Cornelia Willes–Janse van Zoutelande (1820–1916)  
 Member: Director, 1866–1876  
 Parents: Johanna Elisabeth Andriessen and Jacobus Stroobant Janse van Zoutelande, J.D., squire of Zoutelande, merchant, barrister and judge in Middelburg  
 Husband: (1877) Nicolaas van Willes, lieutenant-general and later inspector of the infantry; his second marriage  
 Capital: Left *f* 280,579

*Last Members, Recorded in 1887*

54. Maria Anna Anschutz-Botgorsche(c)k (ca. 1809–1893) #  
 Parents: Unknown; she was an immigrant from Vienna  
 Husband: (Married before 1834) Gustav Adolf Anschutz  
 Capital: Left *f* 678
55. Johanna Jacoba Backer-Buteux (1830–1915) \* # +  
 Member: Treasurer since 1879  
 Parents: Wilhelmina Antoinetta Ermerins and Pieter Idus Buteux, J.D., successively cantonal judge, burgomaster of Heinkenszand, member of the Provincial Estates of Zeeland  
 Husband: (1858) Anthonij Jacob Backer, minister
56. Elisabeth Neeltje van Benthem Jutting (1844–1926)  
 Parents: Maria Johanna Woutersen and Christiaan Hermanus Johannes van Benthem Jutting, bookseller
57. Dina Frederika Ermerins-Tak (1819–1899) \* # +  
 Member: Director since 1876  
 Parents: Dina Anthonia Vermere and Pieter Roetert Tak, squire of Poortvliet, merchant and the largest landowner in Zeeland  
 Husband: (1850) François Ermerins, tax collector and later alderman of Middelburg  
 Capital: Left *f* 491,144
58. Johanna Catharina Van der Feen–Ackermans (1812–1897) \* # +  
 Parents: Sara Petronella van Rosenthal and Gerardus Jacobus Ackermans, J.D., Attorney General of the Provincial Court of Zeeland  
 Husband: (1841) Guillian Balthasar Christiaan van der Feen, M.D.  
 Capital: Inherited *f* 453,000 from parents and sister
59. Maria Fokker (1847–1914) \* # +  
 Parents: Maria Fokker and Antoni Herman Gerard Fokker, merchant, broker, ship-owner, and member of the town council of Middelburg  
 Capital: Left *f* 102,111

60. Antoinetta Wilhelmina Fokker-Turk (1850–1917) \* +  
 Parents: Catharina Digna Buteux and Lambertus Karel Gerbrandsz. Turk, chief engineer-director of the local ship-building industry  
 Husband: (1876) Johan Pieter Fokker, merchant, broker, and chair of the Chamber of Commerce  
 Capital: Left *f* 423,904
61. Sophia Wilhelmina Snouck Hurgronje (1825–1912) \* # +  
 Parents: Johanna Adriana Maria Lambrechtsen and Adriaan Isaac Snouck Hurgronje, minister; his second marriage  
 Capital: Left *f* 536,092
62. Antoinette Adriana de Ligny (ca. 1827–1889) \* #  
 Parents: Maria Apollonia Tak and Louis Hendrik de Blaecke de Ligny, pharmacist  
 Capital: Left *f* 9,169
63. Charlotte de Ligny–van Deinse (1837–1915) \* # +  
 Parents: Johanna Ackermans and Hendrik Jacobus van Deinse, clerk of the cantonal court  
 Husband: (1869) Pieter Marinus de Ligny, pharmacist, professor in chemistry at the Medical School of Middelburg, member of the Medical Council of Zeeland, and member of the town council of Middelburg  
 Capital: Left *f* 80,964
64. Albertina Henrietta Luteijn (1826–1898) \* #  
 Member: President, 1879–1887  
 Parents: Wilhelmina Suzanna Cornelia Risseeuw and Steven Luteijn, merchant, member of the Provincial Estates of Zeeland  
 Capital: Left *f* 156,086
65. Catharina Luteijn–de Kanter (1833–1917) \* # +  
 Parents: Johanna Alida van An del and Hubert Philippus de Kanter, minister, member of the town council of Den Briel (Holland)  
 Husband: (1855) Johannes Luteijn, merchant, first agent of the Bank of the Netherlands in Middelburg, and managing director of the Exchange Bank in Middelburg  
 Capital: Left *f* 99,212
66. Antoinette de Man (ca. 1857–1942) # +  
 Parents: Neeltje Elisabeth Kamerman and Jan Cornelis de Man, M.D., curator of the National Museum for Natural History in Leiden
67. Martina Geertruida Hendrika van de Meer Mohr–van Diggelen (ca. 1826–1905) \* +  
 Parents: Martina Geertruida Alvarez and Hendrik van Diggelen, engineer  
 Husband: (1869) Johannes Cornelis van der Meer Mohr, drawing-master at the local high school; his second marriage  
 Capital: Left *f* 43,852
68. Cornelia Jacoba (or Cornelia Johanna) Staal (1821–1906)  
 Parents: Gerardina Geertruida van Steveninck and Johan Pieter Staal, surgeon  
 Capital: Left *f* 82,335
69. Anna Tak (1840–1931) \* #  
 Parents: Johanna Christina Fak Brouwer and Elias Tak, pharmacist and later merchant  
 Capital: Inherited *f* 116,273 from parents and an aunt
70. Maria Sara Tak (1802–1897) \* # +  
 Parents: Dina Anthonia Vermere and Pieter Roetert Tak, squire of Poortvliet, merchant and the largest landowner in Zeeland  
 Capital: Left *f* 669,031