

Lately I've found myself spending quite a bit of time in the 18th century, beginning in 2007 with the tercentenary of Carol Linnaeus's birth (Uddenberg, 2007). Then I read a little book with the rather interesting title *Sex, Botany, and Empire* (Fara, 2003). It's about how the activities of Linnaeus and Joseph Banks changed the way the world saw plants. Linnaeus (1707–1778), who created the fundamental principles of our system of classification, used the sexual organs of plants as the basis for ordering them. Banks, who traveled on the first of Captain James Cook's voyages around the world, went on to emphasize the importance of the plants to the economic and territorial conquest of the world by the British. More recent books have fanned the flames of my interest in Banks and others of this era. Richard Holmes's (2008) *The Age of Wonder*, a study of science in the development of British romanticism, has Joseph Banks as one of its main subjects, and Andrea Wulf's (2008) *The Brother Gardeners* deals not only with Banks but with such American figures as John Bartram and Benjamin Franklin.

But it was a lesser-known yet intriguing figure who really made me linger in the 18th century: Mary Granville Pendarves Delany, better known simply as Mrs. Delany. She was born in 1700 and died in 1788, so she really is an 18th-century woman, and she knew many of the leading scientific figures of the day, either personally or through their work. She has been receiving quite a bit of attention lately because of a beautiful exhibit, "Mrs. Delany and Her Circle," at the Yale Center for British Art (YCBA). I've had a fascination with Mary Delany for some time, so I decided it was worth a trip to New Haven to learn more about her and, most of all, to see her work.

By "work," I mean several things. Delany did a great deal of drawing and also shell work, which was popular at the time: decorating ceramic pieces, niches, and even grottos with a variety of sea shells. However, Delany is better known for two other crafts. First, there is her embroidery. She was presented to the British court early in 1741 in a black silk gown embroidered with 200 different flowers, stitched with great detail and accuracy. Other pieces of her handiwork indicate that she was a master needlewoman, but it's thought that the dress was the work of professionals – just the extent of the job would have made it difficult for one person to create it and live long enough to wear it. There are sketches of the flowers firmly attributed to Delany, so at the very least she was responsible for the design (Laird & Weisberg-Roberts, 2009).

I had seen pictures of portions of the dress in a biography written by Delany's descendent, Ruth Hayden (1993). It was exciting to finally see these pieces and others in person. The dress was cut up in the 19th century and divided among a number of relatives. Obviously some of them did a better job of preservation than others. One large piece looks perfect, with the silk embroidery richly colored. The flowers are almost presented as botanical illustrations – they are that detailed and the coloring that nuanced. Other pieces are literally pale by comparison, having faded considerably. I do a little embroidery, so I was fascinated by the

work as an indication of just what is possible with thread painting – but don't expect me to be ready for presentation to the Queen any time soon.

Though accomplished, none of the work I've mentioned so far would rate an exhibit at Yale; rather it is Mary Delany's paper cutouts depicting flowers that have made her at least a minor star in the world of botanical art. When she was 72, she began to create botanical illustrations by cutting out colored pieces of paper and gluing them to a background, usually black. Over the next 10 years, she created about 1,000 of these works, which are exquisitely detailed and accurate. Early in this enterprise, she used watercolor and gouache to add realistic touches to the cut paper pieces, but as she became more skilled in this medium she relied less and less on these embellishments – the paper pieces were so small and detailed that they said it all. I had seen a few of these works in the past, but over 30 of them were displayed at Yale, including a number that were hung together. This allowed for comparison and also admiration for how she achieved so many different effects, from shading to dimensionality to accurate rendition of flower parts. To add even more touches of realism, Delany sometimes incorporated real leaves or folded paper. You can almost see her intently at work, trying to devise new ways to bring her plants as close to life as possible.

One reason we know so much about Delany and her handiwork is that she was a prolific letter writer. In the 19th century, a descendent published six volumes of her correspondence. That seems like a lot to read by a woman who is not an important historical figure, but Delany wrote well and, more importantly, was well placed to meet many of the most important names of the day, including those in the realm of science. She was born into a titled family; her uncle was Lord Lansdowne, but her father was a second son and so wasn't in line for any great inheritance. After his death, she was married off at the age of 17 to Alexander Pendarves, who was almost 60 years old at the time. This was a loveless and relatively short-lived marriage, with Pendarves dying four years later. Unfortunately, Mary didn't receive much from his estate, so she and her family were always trying, through their Lansdowne relatives, to receive royal appointments in order to supplement their income.

This strategy meant that Delany lived well, but always at the pleasure of others. She was seeking one such appointment when she created her court dress. In the early 1730s, she traveled to Ireland with a cousin and there she met Patrick Delany, an Anglican cleric and friend of Jonathan Swift. After his wife died, Delany traveled to England and proposed marriage to Mary Pendarves, and they were married in 1743. This was not the type of marriage that would bring her closer to the royal court, so her family opposed it, but she persisted. The couple lived happily, dividing their time between England and Ireland, where they had a home called Delville, outside Dublin. Both Delanys were interested in gardening, and Mrs. Delany used her talent with shells to build a grotto on the property. She also created landscape drawings of Delville and its environs.

## ○ Noble Connections

After 1768, when Patrick Delany died, Mary remained in England, dividing her time between a house in London and Bulstrode, the estate of her close friend the Duchess of Portland (1715–1785). They were drawn together by a love of learning and by mutual interests in gardens, art, and natural history. The Duchess was a collector, whose cabinet of curiosities was extensive and grew by leaps and bounds until her death, when her family auctioned everything off. In an effort to at least suggest what wonders the cabinet contained, the Delany exhibit includes an installation of a cabinet created by Jane Wildgoose (2009) with items from both YCBA and Yale's Peabody Museum of Natural History. It's absolutely fascinating because, like the real cabinets of the Enlightenment, it has natural objects ranging from stuffed animals to dried plants to minerals, and also works of art such as botanical illustrations and ceramic figurines. In between there are amalgams of the two such as one of my favorites, a nautilus shell encrusted in gold-plated silver to make an elaborate cup. The Yale ecologist, and student of history, Evelyn Hutchinson (1965) describes such objects as representative of the time before science and art went their separate ways.

The interest of the Duchess and Delany in the living world was much deeper than that of most dilettantes. They studied the work of Linnaeus, which was still relatively novel at the time, and the Duchess took advantage of all the new plants coming into England from explorations around the world and cultivated a number of these species in her garden, one of the major sources of models for Delany's cutouts. The Duchess also had a menagerie and Delany drew some of the animals in it, including a Java hare and a secretary bird. The two women studied nature together, with Delany focusing on plants and investigating Linnaeus's taxonomic system, and the Duchess particularly interested in entomology and in collecting fossils, shells, and minerals. These women were thus more than mere dilettantes; their investigations went deeper. They were intensely interested in learning more and in getting their facts right.

Delany was also intent on improving her art. She was well placed to do this, because the botanical artist Georg Ehret (1708–1770) tutored the Portland children in drawing, and Delany thus had first-hand demonstrations of his technique. Here she was obviously learning from a master. Ehret was one of the foremost botanical illustrators of his time, and among his accomplishments were the plates for a book on the plants in the garden of the Dutch banker George Clifford; none other than Linnaeus wrote the text. Links like this to the larger intellectual world make Mrs. Delany's own life particularly interesting. The fact that she wrote so many letters to family and friends, and that they were saved and later published, makes her important to historians delving into the 18th-century world.

Unfortunately, the Duchess of Portland died in 1785. However, this did not leave Delany without important patronage, to say the least. She was obviously a very pleasant and interesting person to have around, so much so that none other than the King and Queen of England looked after her and provided her with a home close to theirs so they could visit her in the evenings. Both royals were themselves avidly interested in the science of the time, Queen Charlotte being a student of botany and of botanical illustration. King George III collected scientific instruments and was a patron to many of the leading scientists. Americans don't have warm feelings for this king, to say the least, but if his activities are regarded more broadly, he does seem to have been one of the more learned and cultured of monarchs – and obviously he was also nice to old ladies. Although Mrs. Delany never gained an official place in the court, despite having avidly sought one in her earlier years, she died in royal favor in 1788.

## ○ Joseph Banks

While I'm obviously enamored of Mary Delany, I have to admit that there are many other fascinating figures in 18th-century British biology, and perhaps the most important of them is Joseph Banks (1743–1820). Delany of course knew Banks, and he considered her cutouts accurate

enough that he could identify the species portrayed without fear of error. This is quite significant praise from someone who was both an expert on plants and, at the time, becoming one of the most important scientific names in Britain. Banks came from a wealthy family, so he was able to bankroll a place for himself and his entourage on Captain Cook's first voyage around the world, which set sail in 1768 and returned in 1771. Among those with him were Sydney Parkinson, who created drawings of over 900 plant species, with notations on color for each. He also managed to produce over 400 drawings of animals before he died of malaria on the homeward journey.

The botanist Banks employed to collect and describe the plants collected on the voyage, with the plan of publishing a book on them, was Daniel Solander (1736–1782). He had been a student of Linnaeus, who sent Solander to England for further study and then was unhappy when his protégé decided not to return but instead to travel and then continue working with Banks in England. This isn't surprising, because Banks had a tremendous enthusiasm for botany and also the money to be an attractive patron. After their return to England, Solander worked on sorting, classifying, and studying the collected materials. Even though Solander had completed the text and Banks had commissioned 739 engravings, the two never did get around to publishing their work. The 35 volumes of *Banks' Florilegium* weren't published until the 1980s (Diment & Humphries, 1980–1988).

In the years following the expedition, Banks became one of the most powerful scientific figures in England thanks both to his wealth and to his position as president of the Royal Society for 41 years. As Fara (2003) argues, Banks made botany an economically important science by emphasizing that the plants being discovered by explorers around the world, including by himself and Solander, could be profitably cultivated. For example, he financed a scheme to transport 2,000 breadfruit trees from Tahiti to the West Indies to provide a new food source for the islands. Though the fruit was not at first appreciated by the natives, it eventually became a staple in the region. Banks also encouraged the use of a flax plant native to New Zealand as a much needed source of fibers for the British Navy. He even commissioned a portrait of himself holding a drawing of this flax and wearing a garment made from its fiber. Over the years following his return from Cook's expedition, Banks became known less for his own contributions to science than for his support of the scientific researches and enterprises of others.

Richard Holmes's (2008) book uses Banks to set the stage for the two stars of British Romantic sciences on whom he focuses: the astronomer William Herschel (1738–1822) and the chemist Humphry Davy (1778–1829). Herschel had just recently emigrated to England when Banks became president of the Royal Society. Throughout Herschel's career, Banks provided both scientific and financial support and also served as a liaison between Herschel and George III, who sometimes became outraged at the amounts Herschel spent on his ever larger telescopes. Davy comes into the picture toward the end of Banks's career, when he acts as a young Turk questioning the stodgy ways of the Royal Society and then taking over as president shortly after Banks's death. Holmes is known as a biographer of Romantic poets such as Coleridge and Shelley, and I was interested in seeing how he would handle the shift to more scientific lives. He does a good job, but surprisingly, there is less about poetry here than I had expected. Most of it comes in the chapters on Davy. I suppose this makes sense, in that of the three, Davy was the most interested in poetry, being a poet himself and also a longtime friend of Coleridge. Holmes's book reminds us of the broad interests of all intellectuals of the time and is a wonderful ode to cross-pollination among the disciplines. Admittedly, he wanders into the 19th century, but his discussion of Banks justifies mentioning the book here.

## ○ The Colonies

Wulf's book on *The Brother Gardeners* is narrower in viewpoint and begins earlier, in the first part of the 18th century, with the relationship between

the British gardener and student of plants Peter Collinson (1694–1768) and the Colonial plantsman John Bartram (1699–1777). I've always had a soft spot for Bartram and his son William (1739–1823), ever since reading the latter's book *Travels* (1980), which tells of the journeys he took, with his father and then later by himself, to the southern states to collect specimens. The Bartrams were farmers and horticulturalists. The elder Bartram began a correspondence and business relationship with Peter Collinson that lasted until the latter's death in 1768. Bartram was clever enough to see that there was money to be made in providing New World plants to wealthy British gardeners. Collinson was the focus of his trade and the contact through whom Bartram began selling to other gardeners as well.

Drawing on the extensive correspondence between these two men, Wulf paints a vivid picture of the sense of wonder both felt in response to the plant material they exchanged. The letters also suggest the frustration experienced by each correspondent from time to time over the slowness of communication, with 6 months sometimes elapsing between letters and packages or, even worse, their loss or the arrival of dead plants or deteriorated seeds (Irmscher, 1999). Still, enough good material got through to encourage Collinson to continue the trade and the correspondence, the depth of which is indicated by Bartram's desolation when he learned, very belatedly, of Collinson's death. William Bartram carried on his father's business, though he wasn't as astute with money. He was, however, not only a fine writer but an artist whose botanical watercolors are an indication of the artistic and scientific sophistication to be found in Philadelphia in the early days of the republic (Magee, 2007).

I may seem to be wandering far from Mrs. Delany, but there is a tie-in here. Remember, she created cutouts of over 1,000 species, and while many of them depicted plants native to the British Isles, there were plants that had arrived in Britain from around the world. For example, there is a cutout of *Phlox suaveolens*, which Peter Collinson cultivated, probably from Bartram's seeds. She also depicted a Carolina phlox that had been sent to England by another important 18th-century naturalist working in America, Mark Catesby (1683–1749; McBurney, 1997). On the reverse side of many of her works, Delany noted the provenance of the specimen she used as a model. As interest in her cutouts grew and because of her wide acquaintance with the scientifically powerful, Delany was able to borrow plants from Kew Gardens, where George III had made Joseph Banks the unofficial director. She also had access to plants at the Chelsea Physics Garden, which had been established back in 1673 and had its heyday during the tenure of Philip Miller as chief gardener from 1722 to 1770. Hans Sloane (1660–1753), another avid gardener and student of botany, had donated the land for the garden, which had previously been rented. His herbarium formed the basis for the collection of the British Museum, which is now housed in the Natural History Museum, London.

All these historical connections make London a fascinating place, botanically speaking – and I haven't even mentioned the Royal Horticultural Society, of which Joseph Banks (who else?) was a cofounder. Many of these institutional interrelationships date back at least to Mrs. Delany's time and reveal just how exciting a period it was for those interested in plants. It wasn't just that people were involved in collecting plants, observing them closely, growing them, and drawing them; plants were also important cultural elements. As an example, Wulf writes about a book published anonymously in 1779 called *Mimosa: or, The Sensitive Plant*, which was a parody of Banks. It focuses on his sexual prowess, which had become legendary because of stories making their way back to England from Banks's voyage with Cook. The parody was based on the fact that mimosa leaves seem to shrink and grow. As Wulf notes, "It is hard to imagine modern adults laughing at, let alone buying, a long poem that slanders the sexual proclivities of prominent aristocrats through botanical innuendo" (p. 12).

Another book-length poem with a botanical theme, though not nearly as racy, was Erasmus Darwin's (1791) *The Botanic Garden*. At this point, it will probably not surprise you that Mrs. Delany and her cutouts make

an appearance there, with references to her "mimic bowers" and "paper foliage." This is the wonder of Delany, that she not only did such fascinating work, but also had such fascinating associates. Unfortunately, the media she chose to work in, thread and paper, were not the "accepted" media for botanical communication, so her art has remained on the periphery until recent years, when feminist scholars have revived interest in her (Moore, 2005). Classics on the history of botanical illustration don't even mention her (de Bray, 1989; Blunt & Stearn, 1994). Yes, the cutouts are unorthodox and not as detailed or accurate as the best botanical illustrations, but they are truer to their subjects than many early engravings and woodcuts that make their way into histories of botanical art.

I won't get on my soapbox here, but I do think we have to consider how we judge what is appropriate and inappropriate for the representation of biological material. We are quite willing to accept plastic models of flowers, cells, and anatomical parts even though they are often hideously colored. We still designate them as "scientific" models despite their sometimes crude manufacture. Delany's cutouts – and her embroideries as well – have a texture to them that isn't found in flat drawings or watercolors, a dimensionality that reminds the viewer, better than a completely flat page does, that the object represented is three-dimensional. I admit that I may be overstating the case, but I would argue that what is referred to as "women's work" has more value as botanical art than is usually credited. A recent exhibit on 17th-century British embroidery had a large number of representations of plants and animals that were magnificent as art and craft but also revealed how closely the women of the time were observing nature (Morall & Watt, 2008).

It's sometimes hard to tell if this interest in botany led to a desire to represent flowers in the medium most familiar to women, or whether a desire for realism in art led to a need for more information. In either case, the two were closely tied together, as indicated by the number of books published from the 17th through the 19th century that focused on botanical information, often also including embroidery patterns. Therefore, it is not surprising that by the 19th century, "flowering" was a term used to describe embroidery (Parker, 1984). Though I would like to think that embroidery is making a comeback today, I am not suggesting that our bio labs become sewing rooms (at least not for more than a day). However, it wouldn't hurt to slip in a slide of one of Mrs. Delany's cutouts next time you're covering flower structure.

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