# Jane Colden: Colonial American Botanist

*Mary Harrison*

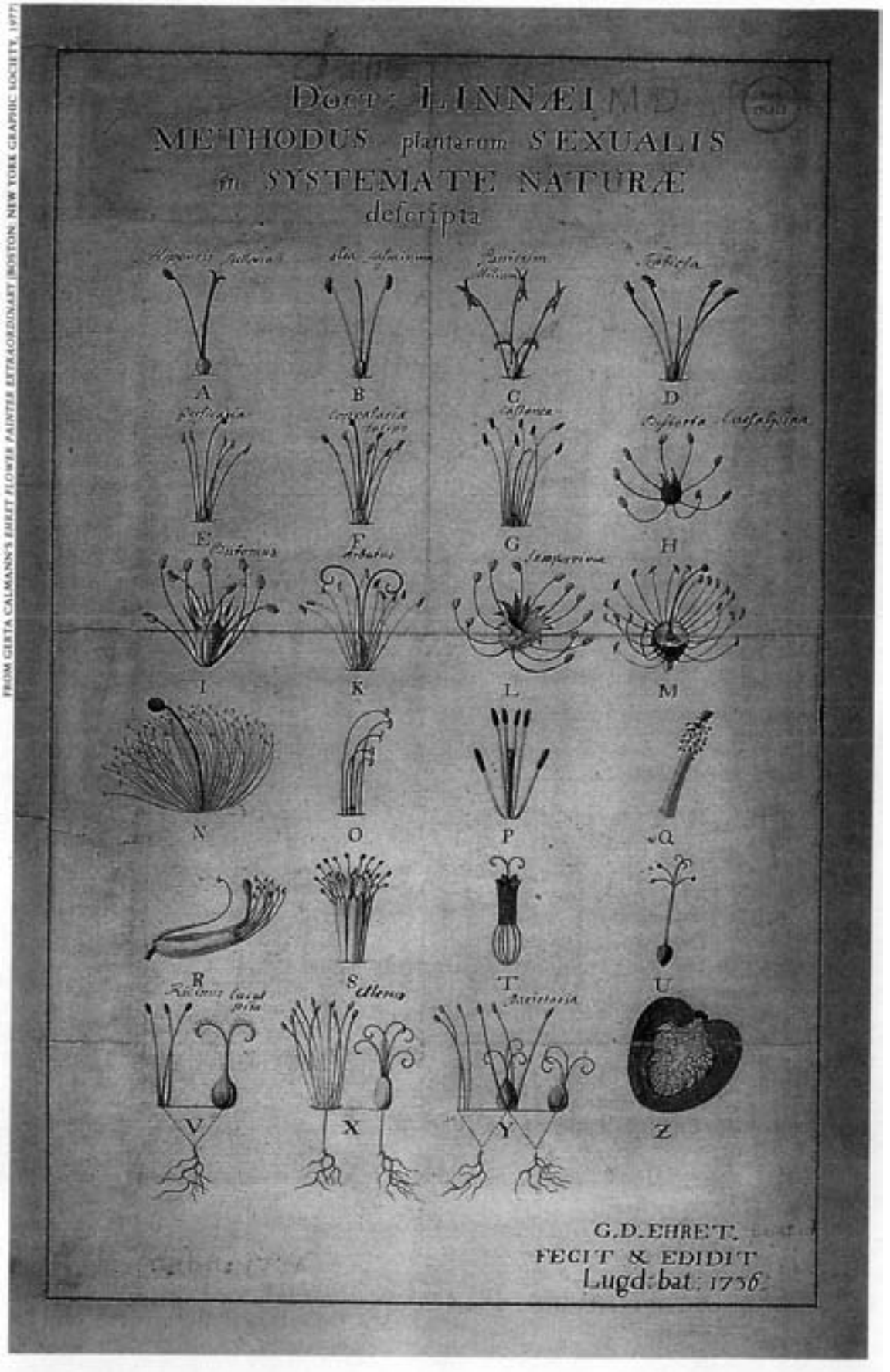
**"She deserves to be celebrated," wrote Peter Collinson to Linnaeus of Jane Colden, whom he described as "perhaps the first lady that has perfectly studied Linnaeus' system."[1]**

In the early eighteenth century only a few women in Europe or the American colonies were involved in botany or any other science. Those few were usually related to a man working in the subject: Sophia Sarah Banks assisted her brother, explorer and naturalist Joseph Banks; Caroline Herschel became an astronomer through her association with her brother William. And Jane Colden (1724–1766), the subject of Peter Collinson's praise to Linnaeus in his 1756 letter, was initiated into botany by her father Cadwallader Colden.[2]

We know directly of Jane Colden's botanical work through a single manuscript of hers that now resides in the British Museum. Nonetheless, there is little doubt that she was a respected member of an international community that was deeply involved in the exchange of plants and botanical information that followed the discoveries of new plant material in North America. Contemporary botanists in England and the colonies discussed her in their correspondence, describing her with such accolades as "assiduous," "accomplished," "scientifically skilful," "ingenious." Collinson wrote enthusiastically about her not only to Linnaeus but to John Bartram: "our Friend Coldens Daughter Has in a Scientificall Manner Sent over Several sheets of plants very Curiously Anatomised after [Linnaeus'] Method I believe she is the first Lady that has Attempted any thing of this Nature."[3]

Only a few letters written by Jane Colden survive, none of them dealing with her botanical work, but we know she corresponded with botanists in Europe and America, among them John Bartram whom she had met when he visited her father's estate at Coldengham, New York. In a letter written in January 1757, he thanks her for her letter and reports that he has read it "several times with agreeable satisfaction." He adds, "Indeed I am very careful of it and it keeps company with the choicest correspondents, ye european letters"—a high honor, for his European correspondents included the predominant naturalists of the day: Peter Collinson, a wealthy London draper and plant collector; Philip Miller of the Chelsea Physic Garden; Carolus Linnaeus; and John Fothergill, patron of scientists and plant collectors.[4] Another friend and correspondent, Dr. Alexander Garden of Charleston, South Carolina, in a letter to John Ellis in 1755, passes on the information that Dr. Colden's "lovely daughter is greatly master of the Linnean method."[5] And John Ellis, in a letter to Linnaeus written in 1758, reports on Jane's botanical activities and her knowledge of Linnaeus' system.

In view of the limited educational opportunities available to women in the eighteenth century, Jane Colden's acceptance by this august group of naturalists and botanists is all the more remarkable. Like most women of her station and period, she had no formal education, but she was blessed with parents who recognized her talents and encouraged and equipped her to pursue her interests. Cadwallader Colden, the son of a Scottish minister, studied at Edinburgh University. He abandoned his original intention of entering the Church of Scotland and turned instead to medicine. Since his father was financially unable to help him establish a career in



Scotland, Colden left for the American colonies in 1710. Aided by family connections, he settled in Philadelphia. In 1715 he returned to Scotland and married Alice Christy. They left Scotland for Philadelphia in 1716 and moved to New York a few years later. Through his acquaintanceship with the governor of New York, Dr. Colden was named to the position of Surveyor General of the colony, the first of many important offices he held. The governor also offered him a stipend to compile a list of the plants and animals of New York; however, funds were not forthcoming and the project did not materialize. Later Colden was to assemble an inventory of plants growing on his own estates.

In 1719 Colden received a grant of two thousand acres of land situated in what is now the town of Montgomery in Orange County, New York, followed shortly by another grant of one thousand acres. It was here, behind the highlands of the Hudson, about ten miles west of Newburgh, that Colden built "Coldengham," his country house, and settled with his family. Even before the family moved into their new home, Colden had begun to cultivate the land and in 1727 was recording in his journal the details of crops sown and harvests gathered. Jane was four years old when the Colden family, now with six children, moved to this wilderness estate, in the words of her father, "the habitation of wolves, bears and other wild animals."[6]

There was no school available in the area so the charge of educating their children fell entirely to Alice and Cadwallader Colden. Mrs. Colden was the daughter of a clergyman and had been brought up in Scotland in an intellectual atmosphere. Dr. Colden was a man of infinite interests and talents: he wrote on anthropology and philosophy as well as medical subjects, but he claimed little knowledge of botany except for the rudiments acquired during his medical training. In letters to Collinson and Gronovius he refers to his "ignorance in botany as a science" and his awareness that he could "understand so very little botany."[7] Some years after moving to Coldengham, however, he records that he "accidentally met Dr. Linnaeus' *Genera Plantarum*. I was so taken with the accuracy of his characters, that I resolved to examine them with the plants that grow near my house. And this is the sole occasion of what you have seen from me in Botany and which is so inconsiderable that I can have no pretensions of merit in the Science."[8] Nevertheless, his collection and documentation of plants around his home resulted in the first local flora of New York, "Plantae Coldenhamiae," which Linnaeus published in 1749.[9]

Linnaeus' ideas had infiltrated the American colonies some years earlier. In 1737 Collinson wrote to John Bartram, "The *Systema Naturae* is a curious performance for a young man; but [Linnaeus'] conning a set of new names for plants, tends but to embarrass and perplex the study of Botany. As to his system on which they are founded, botanists are not yet agreed about it." But by 1743 Collinson was able to report to Linnaeus, "Your system, I can tell you obtains much in America. Mr. Clayton and Dr. Colden at Albany of Hudson's River in New York are complete Professors. . . . Even Dr. Colden's daughter was an enthusiast."[10] (Linnaeus' binomial system reduced plant names to two words, the first the generic name, the second the specific name. As an example, before Linnaeus, the common flax that we know botanically as *Linum usitatissimum*—where *Linum* is the genus and *usitatissimum* is the specific name—was listed as *Linum raris foliisque alternis linearilanceolatis radice annua.*)

Testimony to Jane's interest in botany is also offered in a letter of 1755 from Colden to Gronovius.

> I have a daughter who has an inclination to reading and a curiosity for natural phylosophy or natural History and a sufficient capacity for at-

*Opposite: George Dionysius Ehret drew and engraved this "tabella" of Linnaeus' so-called sexual system of plant classification in 1736. In this system, plants were grouped according to the number of reproductive parts in the flower. By counting the number of stamens and pistils in its flower, a plant could be put into any one of Linnaeus' twenty-four classes. Ehret labelled the twenty-four classes with the letters of the alphabet and selected representative plants to illustrate the first eleven and the last four classes. Linnaeus used Ehret's engraving in his* Genera Plantarum *of 1737. The original watercolored drawing is in the Natural History Museum, London.*

> taining a competent knowledge I took the pains to explain to her Linnaeus's system and to put it in English for her to use by freing it from the Technical Terms which was easily don by useing two or three words in place of one. She is now grown very fond of the study and has made such progress in it as I believe would please you if you saw her performance Tho' perhaps she could not have been persuaded to learn the terms at first she now understands to some degree Linnaeus' characters notwithstanding that she does not understand Latin.[11]

Jane's lack of knowledge of Latin was characteristic of women of her time both in England and in the American colonies. Seventeenth-century writers commenting upon the lack of Latin instruction recognized it as a miserable handicap. "Not to read Latin was to go in blinkers," and the few females who overcame this difficulty had to put up with "those wise Jests and Scoffs that are put upon a Woman of Sense and Learning, a Philosophical Lady as she is call'd by way of Ridicule."[12] Jane's mother, and Jane herself, were not far removed from such attitudes and were certainly not yet liberated from the traditions that produced them. Nevertheless, Jane's father was able to report that her enthusiasm for botany did result in the acquisition of "some knowledge of Botanical Latin." Women were not alone in suffering from lack of knowledge of Latin. "Learned languages," according to Colden, were little understood in the colonies, and the need for English botanical works was crucial. He begged Collinson, who had cultivated North American plants in his garden for many years, to publish descriptions of them, for "We have nothing in botany tolerably well done in English."[13]

Though he was pleased that living in the country protected his children from "the temptations to vice which youth is exposed to in the city,"[14] Dr. Colden was aware that the isolation and lack of cultural opportunities in a young colony were very restricting for a young woman with a serious interest in botany. He wrote to Collinson,

> As [Jane] cannot have the opportunity of seeing plants in a Botanical Garden I think the next best is to see the best cuts or pictures of them for which purpose I would buy for her Tourneforts Institutes and Morison's Historia plantarum, or if you know any better books for this purpose as you are a better judge than I am I will be obliged to you in making the choice.[15]

Collinson was able to acquire "Tournefort's Herbal . . . in excellent preservation." He also provided two volumes of Edinburgh Essays and "2 or 3 of Ehrett's Plants for your ingenious Daughter." More prints were promised but they had to be sent "by another ship" as they were "liable to be taken"—a reference to the piracy prevalent at the time.[16]

In addition to providing her with a good library and sharing his correspondence with her, Colden was able to offer Jane the company of other botanists. One of many visitors to Coldengham was Peter Kalm, a student of Linnaeus who had been sent by the Royal Academy of Sweden to study the natural history of the northern parts of North America. A notable gathering in 1754 included Alexander Garden of Charleston, South Carolina, then a young man of twenty-four, and William Bartram, fourteen. Garden, an active collector of his local flora, later corresponded with Jane, exchanged seeds and plants with her, and instructed her in the preservation of butterflies. The young Bartram was already recognized as a skilled illustrator of plants, birds, and animals, though he had had no formal instruction in this art. In Peter Collinson's words, "He paints them in their natural colors so elegantly so masterly that the best judges here think they come nearest to Mr. Ehrett's, of any they have seen." Collinson had, in fact, written to Colden that "I wish your fair Duagt. was Near Wm. Bartram he would much assist her at first Setting out."[17] John Bartram, too, recorded visits to Coldengham where he and William "looked over some of the Doctor's daughter's botanical curious observations."[18]

Another young visitor who shared Jane's interests was Samuel Bard, who later became physician to George Washington. The son of John Bard, a friend of Colden, he was fourteen when he spent the summer of 1756 with the Colden family. His memory was filled "with pleasing recollections both of the society and studies to which it introduced him . . . In the family resided Miss Colden . . . With this lady, differing in years but united in tastes, Mr. Bard formed an intimate friendship; under her instruction

he became skilful in botanizing . . . to the end of his life he never mentioned the name of his instructress without some admiration or attachment."[19]

Colden seems to have closely supervised his daughter's botanical activities and acted as her negotiator and in some cases her amanuensis. In 1755 he wrote to Gronovius, collaborator with Linnaeus in the cataloging of the *Flora of Virginia*, introducing his daughter who "has a curiousity for natural history" and offering her services if "she can be of any use to you. She will be extremely pleased in being employed by you either in sending Descriptions for any seed you shall desire or dried specimens of any particular plant. . . . She has time to apply herself to gratify your curiosity more than I ever had."[20] Alexander Garden apparently asked Colden's permission to use Jane's work. In a 1755 letter he wrote, "It gives me great pleasure that you give me leave to send Miss Colden's Description of the new plant to any of my correspondents."[21] And it was Colden who sent one of Jane's plant descriptions to John Fothergill. One wonders whether her father's supervision was a form of protection for a young woman operating in an unfamiliar sphere. Or perhaps Jane was too busy performing her domestic responsibilities and keeping her botanical records to conduct her affairs independently. We know she corresponded with John Bartram, with Alexander Garden, and with two Edinburgh doctors, Whyte and Alston, but her letters do not survive.[22]

Since her father's interests were not confined to botany, Jane became increasingly responsible for collecting and recording the plants discovered on their vast acres. There is no record that she ventured beyond Coldengham boundaries, and indeed the times did not favor the most intrepid collectors venturing into the wilderness. The French and Indian wars were spreading, making travel very threatening. Bartram complains in a letter to Alexander Garden, "I want much to come to Carolina to observe ye curiosities toward ye mountains but ye mischievous Indians is so treacherous that it is not safe trusting them. No traveling now."[23] Indeed, in December 1757 Colden was "forced out of my own house and farm" and removed his family to Flushing, Long Island. Villages in the vicinity of Coldengham were being burnt and destroyed and "cunning French spies are everywhere."[24]

On March 12, 1759, Jane married Dr. William Farquhar, a Scottish widower and a medical practitioner, "distinguished for his knowledge and abilities in New York City and vicinity."[25] There is no evidence to suggest that she continued botanizing during her brief marriage. Nor do we know the cause of her death in 1766 at the age of forty-two; her only child also died in that year.

In spite of the great impression she obviously made on her contemporaries during her brief botanical career, Jane received no formal recognition during her lifetime. One of her plant descriptions was published in full in *Essays and Observations*, Volume II (Edinburgh, 1770), four years after her death. Jane had received a specimen of the plant in question, *Hypericum virginicum* (marsh St. Johnswort) from Garden in 1754. She herself had already discovered it the previous summer, and as first discoverer, had named it *Gardenia*, intending to honor her friend. It must have been a great disappointment to discover that John Ellis, the English botanist, had given the name *Gardenia jasminoides* to the Cape jasmine and under the conventions of botanical nomenclature was entitled to its use.

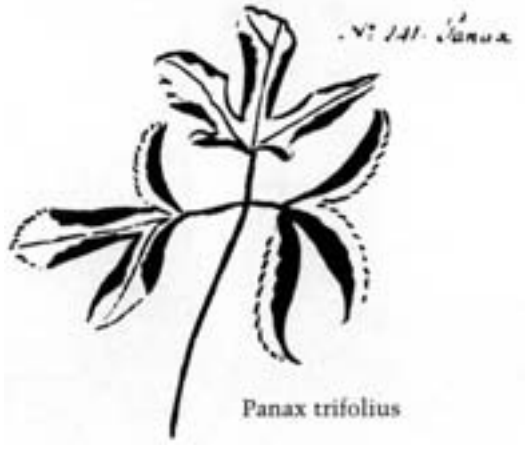
In 1758 John Ellis, a fellow of the Royal Society, informed Linnaeus that Dr. Colden had sent


Hypericum virginicum. *This and the following drawings by Jane Colden are from* Botanic Manuscript of Jane Colden, *edited by H. W. Rickett and E. Hall (New York: Chanticleer Press, 1963).*

to Dr. Fothergill a new plant described by Jane Colden and called by her *Fibraurea*, a translation of its common name, goldthread. Ellis pointed out to Linnaeus that "this young lady merits your esteem and does honour to your System," and suggested that Linnaeus name for her the plant she had described: "Suppose you should call this Coldenella, or any other name that might distinguish her among your Genera," adding that Jane had described four hundred plants "in your method only."[26] Linnaeus did not recognize the genus as distinct, however, and placed the plant in the already known genus *Helleborus*. His decision was subsequently countermanded by Richard Anthony Salisbury, who gave it the name *Coptis*.

Jane's father was among those who admired her prowess, of course, and in spite of his understated manner one senses his pride when he writes to Gronovius in 1755, reporting of Jane,

> She has allready a pretty large volume in writing of the Description of plants . . . That you may have some conception of her performance and her manner of describing I propose to inclose some samples in her own writting some of which I think are new Genus's. One is of Panax folys ternis ternatis . . . I never had seen the fruit of it till she discover'd it . . . Two more I have not found described any where and in the others you will find some things particular which I think are not taken notice of by any author I have seen.[27]




The manuscript that comprises Jane's "pretty large volume" is now part of the Botany Library of the British Museum (Natural History) in Kensington, London. Its journey to England was a circuitous one. After the author's death it became the property of Captain Frederick von Wangenheim, a Prussian who served in a Hessian regiment during the American Revolution. We don't know how he acquired it, though his interest in forestry might have steered him in the direction of other areas of botany and its practitioners. An introductory letter by him, included with the manuscript, is marked New York, 1782, but gives no information on how he acquired it. Later it passed through the hands of Godfrey Baldinger, Professor of Botany at the University of Göttingen, who added a title page. Ultimately it was acquired by Sir Joseph Banks (1743–1820). It was at his death that the manuscript went to the British Museum.


Jane Colden's manuscript consists of 341 descriptions and 340 illustrations. Records are written in a legible, consistent hand with neatly underlined headings and subheadings. Latin and common names for the plants are given. Some of the vocabulary used is unfamiliar to modern readers: *cup* for calyx, *chives* for stamens, *tips* for stigmas, *fibers* for veins. Observations on each part, including root and seed, are noted in great detail. The month of flowering is recorded and the habitat described. Often the medicinal use of the plant is given, information gleaned through her familiarity with the remedies used by Indians and country people, and no doubt through consultation with her father. Suggestions are given to aid in propagation, as in her entry on pokeweed, *Phytolacca decandra* (now *P. americana*).

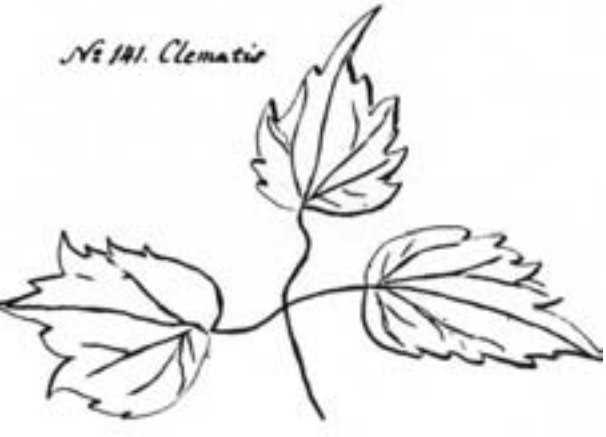
> . . . some curious persons in England have endeavoured to propagate this plant by the seed braigth from America, but could not produce any plant from the Seed. The propagation from this plant is maket in America in the Dung of birds. For this reason it may be necessary to give in Europe the berries to birds, and to plant the seeds with the Dung of the fowls through which they pass intire.[28]

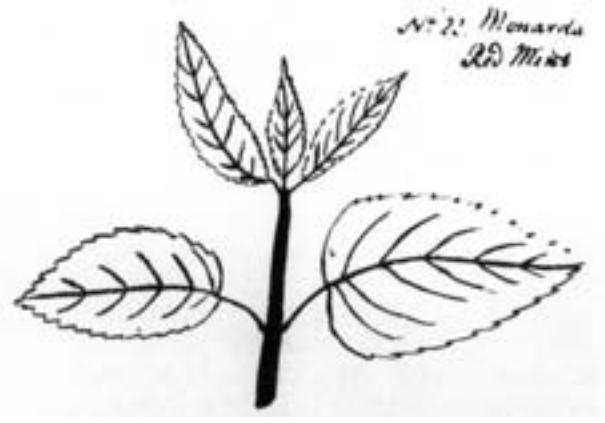

In her description of snakeroot, *Polygala senega,* an additional section is headed "Observat," in which she takes Linnaeus to task, for he

> describes this as being a Papilionatious Flower, and calls the two largest Leaves of the Cup Alae, but as they continue, till the Seed is ripe and the two flower Leaves, and its appendage fol together I must beg Leave to differ from him. Added to this, the seed Vessell differs from all that I have observed of the Papilionatious Kind.[29]

She continues in this stern vein in her description of *Clematis virginiana,* pointing out to Linnaeus that "there are some plants of Clematis that bear only male flowers, this I have observed with such care that there can be no doubt about it."[30]

The descriptions include observations of plants as they develop and indicate the long hours she must have spent visiting and revisiting the plants under study. Of red mint, *Monarda didyma,* she writes, "There are but few of the flowers blown at the same time, those in the middle or top blow first, and those towards the edges gradually afterwards, as they do not continue long the first are fallen before the last come out." When technical terms elude her she resorts to her own vocabulary and describes one leaf rising through the "hollow neck" of the first leaf in the dogtooth violet, *Erythronium*




*americanum.* The female flowers of the common ragweed *(Ambrosia artemisifolia),* she writes, grow at the "Arm Pits" of the leaves.[31]

These descriptions portray plant characteristics that are familiar to most modern gardeners, and much of their appeal is evoked by the charm of the language and an awareness of the period in which they were written. Jane Colden was documenting for her countrymen, and for eager Europeans, an entirely new flora, and it is with this in mind that we can fully understand her delight in botany and appreciate her contribution.


There seems to have been agreement concerning the high quality of Jane's descriptions, and the manuscript

confirms that judgment. In the case of her illustrations, however, a disparity exists between the surviving comments about her work and the illustrations themselves. Walter Rutherfurd, a contemporary admirer though not a botanist, wrote to a friend, "[Jane] draws and colors [her illustrations] with great beauty."[32] However, the manuscript illustrations are very simple sketches, and while venation, shapes, and arrangement of leaves are clearly portrayed, there is little evidence of artistic merit. Certainly those of "great beauty" were not used in her manuscript and, like her letters, are not available to us.

Unfortunately, Jane's manuscript was out of the reach of succeeding generations who might have been inspired by her enterprise; and more than two hundred years after her death the major part of her work remains unpublished.[33] Nevertheless, by its compilation, though she might not have shattered the contemporary view that natural history was only "an amusement for ladies," she has provided us with an intimate glimpse of the initiation of a woman into colonial botany.

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Mary Harrison is a volunteer at the Arnold Arboretum.

**Endnotes**

[1] James Britten, "Jane Colden and the Flora of New York," *Journal of Botany, British and Foreign* (1895) 33: 15.

[2] For the history of women in science, two recent works are *Women in Science· Antiquity Through the Nineteenth Century. A Biological Dictionary* by M. B. Ogilvie (Cambridge: The MIT Press, 1986); and *Hypatia's Heritage A History of Women in Science from Antiquity Through the Nineteenth Century* by M. Alic (Boston: Beacon Press, 1986).

[3] E. Berkeley and D. S. Berkeley, eds., *The Correspondence of John Bartram, 1734–1777* (Gainesville: University of Florida Press, 1992), 393.

[4] Ibid., 414.

[5] A. M. Vail, "Jane Colden, An Early New York Botanist," *Torreya* (1907) 7(2): 30.

[6] *Letters and Papers of Cadwallader Colden*, 9 vols. (New York: New York Historical Society, 1918–1937) 2: 263.

[7] Ibid., 3: 88.

[8] Ibid., 4: 260.

[9] Vail, "Jane Colden," 22.

[10] E. Berkeley and D. S. Berkeley, *John Clayton: Pioneer of American Botany* (Chapel Hill: University of North Carolina Press, 1963), 84.

[11] *Papers of C Colden* 5: 30.

[12] A Fraser, *The Weaker Vessel* (New York: Alfred A. Knopf, 1984), 465, 85.

[13] *Papers of C Colden* 5: 203; 2: 282.

[14] Ibid., 2: 262.

[15] Ibid., 5: 37.

[16] Ibid., 5: 37, 139, 149, 190.

[17] Ibid, 5: 190.

[18] *Correspondence of J Bartram*, 360.

[19] H. W. Rickett and E. Hall, eds., *Botanic Manuscript of Jane Colden* (New York: Chanticleer Press, 1963), 19

[20] *Papers of C Colden* 5: 30.

[21] Ibid., 5: 10.

[22] Ibid., 5: 263; Vail, "Jane Colden," 32.

[23] *Correspondence of J. Bartram*, 404.

[24] *Papers of C. Colden* 5: 212, 213.

[25] Rickett and Hall, *Manuscript of J Colden*, 18.

[26] Britten, "Jane Colden," 14.

[27] *Papers of C Colden* 5: 30.

[28] Rickett and Hall, *Manuscript of J. Colden*, 82.

[29] Ibid., 51.

[30] Britten, "Jane Colden," 15.

[31] Rickett and Hall, *Manuscript of J. Colden*, 29, 143, 114.

[32] Vail, "Jane Colden," 32.

[33] In 1963 the Garden Club of Orange and Dutchess Counties, New York, commemorated their fiftieth anniversary by publishing fifty-seven of Jane Colden's descriptions with illustrations in a limited edition of fifteen hundred copies.

In 1989 the manuscript was bound in red leather by the Botany Library at the Natural History Museum, London, in a volume measuring approximately 12.5 x 8.75 X 2.25 inches. On the spine, printed below the Botany Department symbol, we read: "J.Colden, Flora Nov. Eboraensis."