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Describing the Flora of the United States: Botanies at Libraries in Syracuse

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“**Y**OUNG people should be early taught to distinguish the stops, commas, accents, and other gramatical marks, in which the correctness of writing consists; and it would be proper to begin with explaining to them their nature and use *.”

* ROLLIN on the Belles Letters, b. i. c. 1.

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Describing the Flora of the United States: Botanies at Libraries in Syracuse

BY DUDLEY J. RAYNAL

The first written descriptions of the flora of North America were those of sixteenth-century Europeans who marvelled at the botanical treasures brought to them by explorers of the New World. The earliest account of American natural history was that of the English botanical explorer Thomas Hariot who wrote his *Briefe and True Report of the New Found Land of Virginia* in 1590 after returning from an expedition arranged by Sir Walter Raleigh.¹ Hariot carried to England tubers, fruits, and seeds of plants previously unknown in Europe. Perhaps thirty different plant species had been introduced into Europe from the New World by 1600, most of these valued for their practical uses or unusual properties.² Pumpkin, persimmon, potato, sunflower, mulberry, sassafras, arborvitae, maize, chestnut, black walnut, and tobacco found their way to Old World gardens.

During the 1600s, sojourners from Europe as well as colonial Americans were busy describing the natural resources of America and enumerating the flora. The first book devoted entirely to American botany was *Canadensium Plantarum* (1635) written by the French scientist Jacques Cornut, who described plants sent to him in France by explorers in Canada.³ Later the Englishmen John Josselyn, a resident of Boston, and the Rev. John Banister, who settled in Virginia, wrote of their botanical discoveries in *New England's Rarities* (1672) and *A Catalogue of Plants Observed in Virginia* (1680). By the 1700s many industrious and observant naturalists in America had

1. Howard A. Kelly, *Some American Medical Botanists* (Troy, N.Y.: Southworth Company, 1914), 13.

2. Joseph Ewan, *A Short History of Botany in the United States* (New York: Hafner, 1969), 29.

3. Kelly, *Medical Botanists*, 12.

collected botanical specimens and sent them—along with sketches and accounts of their occurrence and distribution—to scientists and patrons in Europe who were eager to learn of novel plants. In 1763 John Bartram, America's first native-born botanist, well known for establishing a fine botanical garden near Philadelphia, wrote to Peter Collinson, an English patron of botany, "The variety of plants and flowers in our south western continent is beyond expression. . . . If I could but spend six months in Ohio, Mississippi, and Florida in health, I believe I could find more curiosities than the English, French, and Spaniards have done in six score years."⁴

Illustrations of the flora informed Europeans of the beauty and diversity of American plants and kindled deep interest in botanical discovery. In the mid-1700s Jane Colden, perhaps our first colonial woman botanist, illustrated a manuscript (now in the British Museum) in which she described the plants on the estate of her father, Cadwallader Colden, surveyor general of the colony of New York and himself an accomplished botanist. The handsome drawings of Mark Catesby accompanying his *Natural History of the Carolinas, Florida, and the Bahama Islands*, published in London from 1730 to 1743,⁵ record in splendid realistic detail the plants and animals he observed in natural settings. The style and beauty of Catesby's illustrations undoubtedly influenced the painting of the noted ornithologist John James Audubon in the next century.

The first botanical works to present American plants in a systematic arrangement were published in Europe. *Flora Virginica* (1739), compiled by J. F. Gronovius of Leiden, was based on collections of the colonial botanist John Clayton, who lived near Williamsburg, Virginia (fig. 1). *Flora Caroliniana* (1788) by Thomas Walter of Santee, South Carolina, described plants that he and Scottish botanist John Fraser collected in the coastal plain and piedmont of the Carolinas.

The world's outstanding botanist of the 1700s was undoubtedly Carolus Linnaeus, the Swedish scientist who revolutionized botanical study. He developed an ingenious system of classification based on a few easily observed properties of the flower and standardized the use

4. William Darlington, *Memorials of John Bartram and Humphry Marshall* (New York: Hafner, 1967), 256.

5. A copy of Volume II of a revised edition (1754) is found in the George Arents Research Library at Syracuse University.



Fig. 1. Spring-beauty (*Claytonia virginica* L.), a tuberous perennial named in honor of John Clayton, colonial botanist (W.P.C. Barton, *A Flora of North America*, 1821, Plate 51).

of binomial nomenclature. Called the “sexual system” because of its emphasis on stamen features, the scheme was adopted widely during the mid-eighteenth to the mid-nineteenth centuries because of its simplicity and utility. Although Linnaeus himself never visited North America, he sent his favorite pupil Peter Kalm to America in 1748 for two and a half years. Kalm collected widely and carried back many plants to Linnaeus in Uppsala. Linnaeus honored him by naming the genus of mountain laurel, *Kalmia* (fig. 2). Another Linnaeus student, Adam Kuhn, an American, became professor of botany at the University of Pennsylvania, the first such professorship in the United States.

By the end of the century, works describing the flora of North America had begun to be published in the United States. *Arbustum Americanum* (1785), written by the horticulturist Humphry Marshall, was the first volume on American plants by an American that was published in the United States. It contains a description of *Franklinia alatamaha* (fig. 3), a tree discovered by John Bartram and his son William in their travels along the Altamaha (in its current spelling) River in Georgia.⁶ John Bartram, a founding member with Benjamin Franklin of the American Philosophical Society,⁷ was appointed “King’s Botanist” by George III of England, his service to be that of plant collector. The famed Franklin tree (named by William Bartram for Benjamin Franklin), a member of the tea family and closely related to *Camellia*, has been extinct in the wild since 1803 but survives in cultivation in the United States and Europe.⁸

In the 1800s the United States and France fostered botanical discovery through sponsorship of scientific exploration in America. The Lewis and Clark Expedition to the Northwest (1803–1806), conceived by Thomas Jefferson, collected many plants new to science. Jefferson himself promoted botany by encouraging the import and export of agricultural plants and by stimulating scientific investigation. The name of the delicate forest herb known as twinleaf, *Jeffer-*

6. Mark Van Doren, ed., *The Travels of William Bartram* (New York: Macy-Masius Publishers, 1928), 370.

7. Edmund and Dorothy Smith Berkeley, *The Life and Travels of John Bartram* (Tallahassee: University Presses of Florida, 1982), 112.

8. Keith Stewart Thomson, “Benjamin Franklin’s Lost Tree”, *American Scientist* 78 (1990): 203–6.

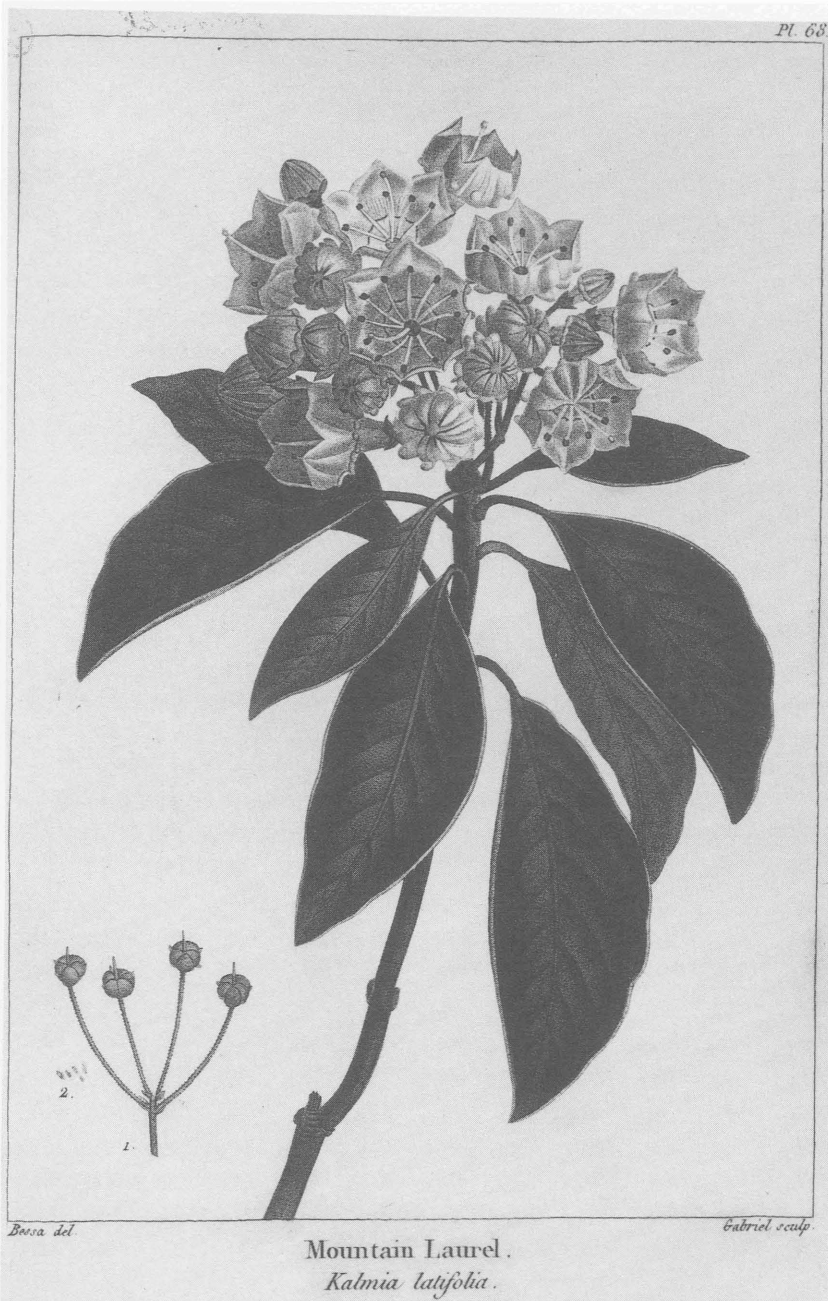


Fig. 2. Mountain laurel (*Kalmia latifolia* L.), named by the Swedish botanist Carolus Linnaeus for his student, Peter Kalm, who explored the United States (F. A. Michaux, *The North American Sylva*, 1852, Plate 68).



Fig. 3. Franklin tree (*Franklinia alatamaha* Marsh.), discovered by John and William Bartram in their travels (F. A. Michaux, *The North American Sylva*, 1852, Plate 59).

son *diphylla* (L.) Pers., commemorates his botanical contributions.⁹ The Wilkes Expedition to the Pacific coast (1838) produced discoveries that kept botanists at work for more than a decade.¹⁰ The French government sought to replenish the depleted forest resources of France and sent André Michaux to America in search of useful plants and wood products.¹¹ Michaux's travels extended from Florida to Canada and west to the Mississippi River and resulted in the shipment to France of boxes of acorns and seedlings. In 1803, based on his explorations, Michaux published the first extensive catalogue or flora of North American plants. Had he not been diverted elsewhere by the French government, Michaux might have served as botanist for the Lewis and Clark Expedition. Without a formally trained participating botanist, plants collected on that expedition had to await identification until the venture was completed. Michaux's son François continued his father's botanical exploration and contributed a multivolume work on trees, *The North American Sylva*, to the growing literature on American plants.

Following the Mexican War (1846–1848), a series of government-sponsored expeditions to the Mexican border, Rocky Mountains, California, and the Pacific Northwest produced many plant discoveries. During this midcentury period of frontier extension, two successors of Amos Eaton (see page 12), Professors John Torrey of Columbia University and Asa Gray of Harvard University, as well as physician George Engelmann of St. Louis, Missouri, published accounts of plants collected on the expeditions, including those of Fremont (1842–48), Marcy (1852) and Emory (1853–56).¹² Many montane, grassland, and desert plants were described. The naming of Mount Gray and Mount Torrey in the Colorado Rocky Mountains and the Engelmann spruce, a dominant conifer of their slopes, attests to the exploits of these eminent scientists.

9. Edmund H. Fulling, "Thomas Jefferson. His Interest in Plant Life Revealed in His Writings. II", *Bulletin of the Torrey Botanical Club* 72 (1945): 248–70.

10. A. Hunter Dupree, *Asa Gray, American Botanist, Friend of Darwin* (Baltimore: Johns Hopkins Press, 1988), 69.

11. Frederick Brendel, "Historical Sketch of the Science of Botany in North America from 1635 to 1840", *American Naturalist* 13 (1879): 754–71.

12. Frederick Brendel, "Historical Sketch of the Science of Botany in North America from 1840 to 1858", *American Naturalist* 14 (1880): 25–38.

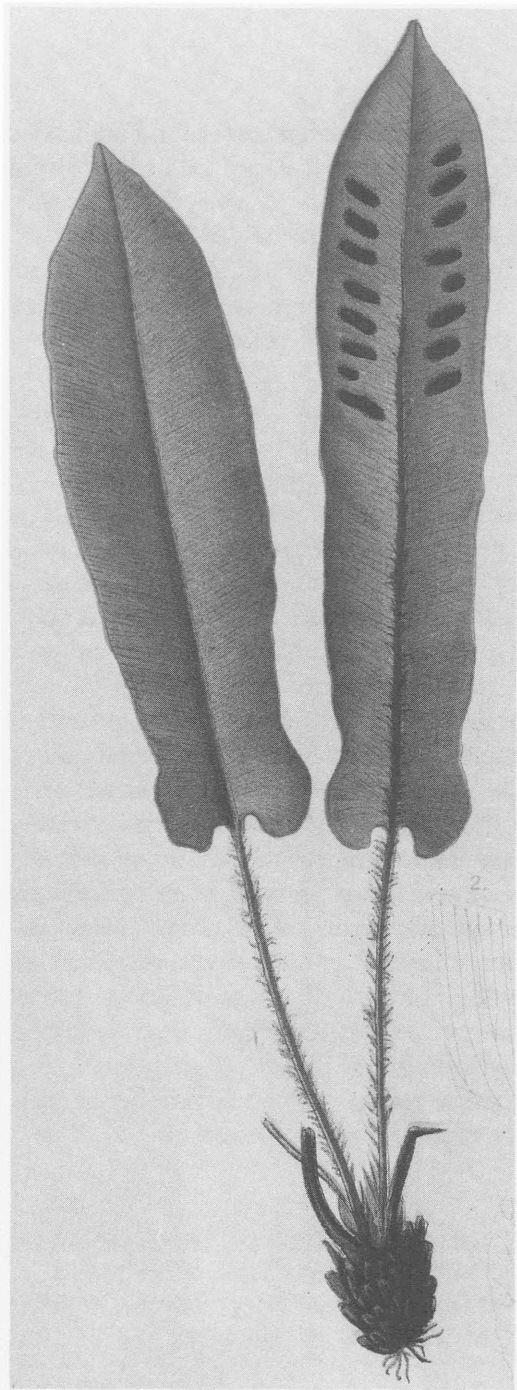


Fig. 4. Hart's-tongue fern, *Phyllitis scolopendrium* (L.) Newm., var. *americana* Fern., drawn from a small specimen collected in Onondaga County, New York by L. M. Underwood (D. C. Eaton, *The Ferns of North America*, 1879, Plate 32).

The uses of plants in medicine also prompted botanical interests in America. The first American *materia medica*, *Materia Medica Americana Potissimum Regni Vegetabilis*, was written in 1787 by Dr. Johann Schoepf, a German physician from Erlangen who visited the United States.¹³ American physicians and botanists, most notably Drs. Benjamin S. Barton and Jacob Bigelow, followed with similar works in 1801 and 1817. Bigelow critically evaluated the medicinal uses of numerous plants. In describing the root of the native ginseng, for example, he wrote that “its virtues do not appear, by any means, to justify the high estimation of it by the Chinese.” However, “many have acquired an habitual fondness for chewing it,” it being “certainly one of the most innocent articles for this purpose.” Physicians interested in natural medicines produced so-called family floras as well as a number of *materia medica*. Some of these works have actually contributed to confusion about plant identity. For example, Cyrus Thomson’s *Materia Medica* (1863) contains an illustration of *Trillium* labeled as *Orobanche*, the broom-rape, a very different and unrelated plant. Constantine Samuel Rafinesque, a European immigrant who discovered and named many American plants, published his *Medical Flora* in 1828 and Francis Peyre Porcher, a South Carolina naturalist, wrote *Resources of Southern Fields and Forests* (1863), a work that provided Confederate troops with practical information on plant uses.

Benjamin S. Barton, noted scientist and professor at the University of Pennsylvania, advanced botanical education in the United States by producing the first botany textbook,¹⁴ *Elements of Botany*, in 1803. Barton contributed to botanical science not only through teaching and writing but also by sponsoring the expeditions of the productive botanists Frederick Pursh and Thomas Nuttall. Pursh, a native of Germany, visited the Middle Atlantic and northeastern states and first discovered the rare hart’s-tongue fern, *Phyllitis scolopendrium* (L.) Newm. var. *americana* Fern. (fig. 4), near present-day Syracuse, New York. Today it is known only from New York, Michigan, Tennessee, Alabama and Ontario.¹⁵ Nuttall, an English bota-

13. Kelly, *Medical Botanists*, 15.

14. Ewan, *A Short History*, 37.

15. Diane M. Cinquemani, Mildred E. Faust, and Donald J. Leopold, “Periodic Censuses (1916–1986) of *Phyllitis scolopendrium* var. *americana* in Central New York State”, *American Fern Journal* 78 (1988): 37–43.

nist, extensively explored the area from the Atlantic seaboard to the Rockies and the West Coast, collecting plants and recording their distribution.¹⁶

Amos Eaton, who had begun his own studies at Yale, and whose impressive botanical *Manual* went through eight editions from 1817 through 1840, instilled a love of his subject in many of the students he taught at Albany and Troy, New York. Among them was Mrs. Almira Hart Lincoln, whose *Familiar Lectures on Botany* (1829) was used widely in female academies and seminaries. More significantly, Eaton encouraged the botanical interest of the young John Torrey, who would, after obtaining his medical degree in New York City, establish a distinguished career as professor of botany at Columbia University and later at Princeton. Torrey's influence in botanical circles was celebrated in 1866 by the founding of the Torrey Botanical Club, a society that remains active today and publishes a respected professional journal. The Torrey cedar, *Torreya taxifolia* Arnott, an endangered Florida evergreen, memorializes his major contributions to taxonomic botany. Torrey's most noted student was Asa Gray, America's greatest botanist of the last century. Gray, a Harvard professor and friend as well as advocate of Charles Darwin, promoted scientific exploration of the western United States and conducted lively botanical intercourse with both American and European botanists of his day. Several plant names honor Gray, most notably the genus *Grayia*, the hop-sage, a shrub found in the plains of the West. Gray's *Manual of Botany*, first published in 1848 and revised seven times, remains a standard reference even today.

The end of the 1800s witnessed the publication of two fully illustrated botanical works of enormous importance. Charles Sprague Sargent produced, beginning in 1892, *The Sylva of North America* in which he precisely described the rich diversity of trees of North American forests. In 1896 Nathaniel Lord Britton (of Columbia University and, later, the New York Botanical Garden) and his collaborator and patron, Addison Brown, wrote their *Illustrated Flora*, a comprehensive guide to the plants of eastern North America. The work was twice revised and still serves as a valued identification manual.

16. Jeannette E. Graustein, *Thomas Nuttall, Naturalist* (Cambridge: Harvard University Press, 1967), 1.

OUTSTANDING BOTANICAL VOLUMES IN SYRACUSE

The libraries at Syracuse University, the State University of New York College of Environmental Science and Forestry, and the SUNY Health Science Center, as well as the Onondaga County Public Library, contain outstanding botanical works that mark the discovery and description of the American flora, and include many first editions. While not a complete assemblage of eighteenth- and nineteenth-century American botanies, the collections do represent well the early writings about the flora of this continent. What follows is a chronological, annotated list of these works by Americans or by scientists from Europe who sojourned in America. Representing early discourses on botanical science, the volumes at the Syracuse libraries document the North American flora and are nicely complementary with little duplication. The heart of the collections in the Arents Library is from the personal natural history library given by William Martin Smallwood.¹⁷ The books listed here are in the special collections of libraries in Syracuse. Their locations are designated by the standard library codes as follows:

Syracuse University George Arents Research Library	[NSyU]
State University of New York College of Environmental Science and Forestry F. Franklin Moon Library	[NSyU-F]
State University of New York Health Science Center Library	[NSyU-M]
Onondaga County Public Library	[NSy]

Marshall, Humphry (1722–1801). *Arbustum Americanum: The American Grove; or, An Alphabetical Catalogue of Forest Trees and Shrubs, Natives to the American United States*. Philadelphia: Joseph Cruikshank, 1785. [NSyU]

A compilation intended as a botanical vademecum, useful to those, including foreigners, seeking information on the characteristics of American woody plants. Interestingly, the title page carries the typographical error *Arbustrum Americanum*. The author dedicated

17. Eileen Snyder, "William Martin Smallwood and the Smallwood Collection in Natural History at the Syracuse University Library", *Syracuse University Library Associates Courier* 22 (1987): 67–94.

- the book to Benjamin Franklin, then president of the American Philosophical Society.
- Stearns, Samuel (1741–1809). *The American Herbal; or, Materia Medica*. Walpole, N.H.: David Carlisle, 1801. [NSyU-M]
 An early account of the medical uses of plants, written for physicians, surgeons, and apothecaries as well as “masters and mistresses” of families. The book was published without illustrations and was intended to shed “medical light and information in America”.
- Barton, Benjamin Smith (1766–1815). *Collections for an Essay Towards a Materia Medica of the United States*. 2 vols. Philadelphia: Robert Carr, 1801–2. [NSyU-M]
 Barton sought to promote an understanding of the medicinal properties of indigenous American plants. In the foreword, he asks “how are we to know what plants are most proper for the purposes of medicine, until we shall have examined the properties of a great body of vegetables?” He then proceeded to outline briefly the characteristics of potentially useful species.
- Michaux, André (1746–1802). *Flora Boreali-Americana*. Paris: Levrault, 1803. [NSyU]
 A catalogue of North American plants presented in Latin and arranged in the system of classification developed by the Swedish botanist and “father of taxonomy”, Carolus Linnaeus. This work, published posthumously, contains fine plate illustrations by Pierre Redouté.
- Barton, Benjamin Smith. *Elements of Botany; or, Outlines of the Natural History of Vegetation*. Philadelphia: Printed by the Author, 1803. [NSyU]
 An early textbook written by the professor of *materia medica*, natural history, and botany, at the University of Pennsylvania. The book presents plant morphology, physiology, and the Linnaean sexual method of classification.
- Waterhouse, Benjamin (1754–1846). *The Botanist*. Boston: J. T. Buckingham, 1811. [NSyU]
 Waterhouse was a physician who obtained his medical education at Leiden and was known for his early advocacy of cowpox vaccination to prevent smallpox.¹⁸ This anthology, based on lectures
18. William M. Smallwood, *Natural History and the American Mind* (New York: Columbia University Press, 1941), 293.

- on natural history given by the author at Rhode Island College and Harvard University, served as a textbook. It was dedicated to John Adams, formerly president of the United States, at that time president of the Massachusetts Agricultural Society.
- Wakefield, Priscilla Bell (1751–1832). *An Introduction to Botany*. Boston: Kimber and Conrad, 1811. [NSyU]
 The first American edition (from the fifth London edition) of a popular British textbook designed to acquaint young persons with elementary botany. It contains illustrative engravings.
- Henry, Samuel [dates unknown]. *A New and Complete American Medical Family Herbal*. New York: Published by the Author, 1814. [NSyU-M]
 An account of the natural history and botanical characteristics of medicinal plants and their uses designed specifically for the layman. Hand-colored engravings decorate the text.
- Pursh, Frederick (1774–1820). *Flora Americae Septentrionalis; or, A Systematic Arrangement and Description of the Plants of North America*. 2 vols. London: White and Cochrane, 1814. [NSyU; NSyU-F]
 Frederick Pursh was given the task of describing plants collected on the Lewis and Clark Expedition.¹⁹ This work, based on twelve years of botanical exploration and study, contains descriptions of many of those species. Because Pursh collaborated with and was assisted by John and William Bartram, Humphry Marshall, Benjamin S. Barton and others, his *Flora* contains considerably more species than that of Michaux, who based his work on his own observations.
- Bigelow, Jacob (1787–1879). *Florula Bostoniensis: A Collection of Plants of Boston and its Environs, with their Generic and Specific Characters, Synonyms, Descriptions, Places of Growth, and Time of Flowering, and Occasional Remarks*. Cambridge, Mass.: Cummings and Hilliard, 1814. [NSyU; NSyU-F (1824 edition)]
 The first local flora in America,²⁰ written in English and presented in the Linnaean system without figures or engravings by the professor of *materia medica* at Harvard. The book was intended to make information about plants “growing spontaneously in their wild state” widely available.

19. Fulling, *Thomas Jefferson*, 261.

20. Ewan, *A Short History*, 6.

Smith, Sir James Edward (1759–1828). *An Introduction to Physiological and Systematical Botany*. Boston: Finley, Bradford and Read, 1814. [NSyU]

The author of this work was the first president of the Linnaean Society of London. He purchased the Linnaeus herbarium from Linnaeus's widow and moved it from Sweden to London, where it remains today in the care of the Society. This first American edition of Smith's elementary text was published through the efforts of Jacob Bigelow, who added explanatory notes to the text.

Bigelow, Jacob. *American Medical Botany, Being a Collection of the Native Medicinal Plants of the United States*. 3 vols. Boston: Cummings and Hilliard, 1817–20. [NSyU-M]

In this work, Bigelow, a prominent Boston physician and professor of *materia medica* at Harvard University, described in lucid text and attractive illustrations the virtues of numerous herbaceous plants. To aid botanical students, he supplied detailed drawings of flower and fruit dissections.

Eaton, Amos (1776–1842). *A Manual of Botany for the Northern States*. Albany: Websters and Skinners, 1817. [NSyU]

The first of eight editions of an exceedingly popular textbook containing a botanical dictionary translated from the French. This text presents plant species in the Linnaean system. With the advent of the natural system of classification that provided a more realistic treatment of plant arrangement, this work eventually became obsolete.

Barton, William Paul Crillon (1786–1856). *Compendium Florae Philadelphiae: Containing a Description of the Indigenous and Naturalized Plants Found within a Circuit of Ten Miles around Philadelphia*. 2 vols. Philadelphia: M. Carey and Son, 1818. [NSyU]

An early local flora written by the nephew of Benjamin Smith Barton, intended for use by students taking field botany courses. The work preceded Barton's more comprehensive study of the American flora (see 1821–23 entry).

Locke, John (1792–1873). *Outlines of Botany*. Boston: Cummings and Hilliard, 1819. [NSyU]

Written by a lecturer at Dartmouth and Yale, this book was intended as an introductory text for use in schools and academies. It was dedicated to the influential Cambridge physician and botanist, Jacob Bigelow.

Michaux, François André (1770–1855). *The North American Sylva; or, A Description of the Forest Trees of the United States, Canada and Nova Scotia*. Paris: C. D'Hautel, 1819. [NSyU-F]

An English translation of a single-volume work on North American trees written by the son of André Michaux, this book was a precursor of his multivolume illustrated work on the trees of America (see entry for 1852). Despite the comprehensive title, this book presents only American oaks observed by André and François Michaux. It includes twenty-nine species from the United States and Canada and twenty-one from Mexico.

Torrey, John (1797–1873). *A Catalogue of Plants Growing Spontaneously within Thirty Miles of the City of New York*. Albany: Websters and Skinners, 1819. [NSyU]

Torrey, a principal American botanist during the nineteenth century, wrote this local flora while a medical student in New York City. Just five years later his *Flora* appeared (see 1824 entry).

Barton, William Paul Crillon. *A Flora of North America*. 3 vols. Philadelphia: M. Carey and Sons, 1821–23. [NSyU]

A set of books describing the flora of North America written by the professor of botany at the University of Pennsylvania; beautifully illustrated with color plates.

Elliott, Stephen (1771–1830). *A Sketch of the Botany of South Carolina and Georgia*. 2 vols. Charleston: J. R. Schenck, issued in parts, 1821–24. [NSyU]

Despite the title “Sketch”, this work, written by an influential South Carolina planter, legislator, scientist, and teacher, is a masterly documentation of the southeastern flora using the Linnaean system. A unique feature is the presentation of botanical descriptions in Latin and English in parallel columns. Elliott was instrumental in founding the Medical College of South Carolina and the state’s Philosophical and Literary Society. The work is inscribed in memory of the Rev. Henry Muhlenberg (1753–1815) of Lancaster, Pennsylvania, a respected botanist of the time.

Smith, Sir James Edward. *A Grammar of Botany, Illustrative of Artificial as well as Natural Classification*. New York: James V. Seaman, 1822. [NSyU]

An introductory textbook presenting plants according to the natural system of classification of the French botanist, Antoine Jussieu. The natural system was designed to express floral affinities

rather than the sexual differences that the Linnaean system had emphasized. The grouping of related plants was an attractive feature of the natural system of plant classification and led to the gradual replacement of the Linnaean method. The book contains handsome early hand-colored lithographs.

Torrey, John. *A Flora of the Northern and Middle Sections of the United States*. 3 vols. New York: T. and J. Swords, 1824. [NSyU]

Serving as a counterpart of Stephen Elliott's *A Sketch of the Botany of South Carolina and Georgia*, this work described the flora of the northern and middle states using the Linnaean system. The book is dedicated to Thomas Nuttall, indefatigable English botanist who explored much of the United States.

Barton, William Paul Crillon. *Vegetable Materia Medica of the United States; or, Medical Botany*. Philadelphia: H. C. Carey and I. Lea, 1825. [NSyU-M]

A compendium of botanical descriptions and medical uses of plants, this work was issued by subscription in eight fascicles. In the foreword, Barton requested responses from users of the book, "As it is probable that country practitioners of medicine residing in different parts of the United States, are possessed of much useful information, derived from experiences, covering our native medicines, the author earnestly solicits communications on the subject".

Torrey, John. *A Compendium of the Flora of the Northern and Middle States*. New York: S. B. Collins, 1826. [NSyU]

A condensation of Torrey's *Flora* (1824), this book was published in pocket-size format for convenient field reference.

Barton, William Paul Crillon. *Outlines of Lectures on Materia Medica and Botany*. 2 vols. Philadelphia: Joseph G. Auner, 1827. [NSyU-M]

Based on lectures given by the author at Jefferson Medical College, Philadelphia, this work was written "to aid the student in the laborious task of taking notes". Volume I gives a synopsis of *materia medica* and the therapeutic uses of plants; Volume II lists alphabetically plants and their uses.

Rafinesque, Constantine Samuel (1783–1840). *Medical Flora of the United States*. Philadelphia: Atkinson and Alexander, 1828. [NSyU-F]

An eccentric genius, Rafinesque of Transylvania University, Lexington, Kentucky, eschewed the Linnaean system of classification

- calling it “defective and indelicate . . . too obsolete for the state of the science”. This book provides morphological and chemical descriptions of plants in alphabetical order. The uses, doses, preparations, and equivalent substitutes for plants are explained. The work is dedicated to John Torrey, Charles Wilkins Short (also of Transylvania), and Stephen Elliott.
- Phelps, Almira Hart Lincoln (1793–1884). *Familiar Lectures on Botany*. Hartford: H. and F. J. Huntington, 1829. [NSyU; NSyU-F]
The first of many editions of a popular textbook used in schools and academies, written by a former pupil of Amos Eaton of Albany. Mrs. Phelps was a science educator rather than a botanical scholar.
- Nuttall, Thomas (1786–1859). *An Introduction to Systematic and Physiological Botany*. Cambridge, Mass.: Hilliard and Brown, 1830. [NSyU]
Written by the capable and energetic English naturalist, this second edition of a book first published in 1827 was produced as a text for students at Harvard, where Nuttall served as curator of the botanical garden for ten years. Nuttall’s *Genera of Plants* (1818) (not found in the Syracuse collections, except in a facsimile edition) is a botanical classic.
- Browne, Daniel J. (b. 1804). *The Sylva Americana*. Boston: William Hyde, 1832. [NSyU-F]
A single-volume compilation admittedly not based on original study, but intended to “furnish the public with the history of all important species of forest trees indigenous to the United States”.
- Comstock, John Lee (1789–1858). *An Introduction to the Study of Botany*. Hartford: D. F. Robinson, 1832. [NSyU]
A descriptive illustrated guide that includes the major groups of plants as presented in the Linnaean system. This textbook competed with those of Eaton, Beck, and Phelps.
- Beck, Lewis Caleb (1798–1853). *Botany of the Northern and Middle States*. Albany: Webster and Skinners, 1833. [NSyU; NSyU-F]
This manual provided a synopsis of plant genera arranged according to the Linnaean system. However, his growing disenchantment with Linnaean classification led Beck also to include in this volume an introduction to the British botanist Lindley’s natural system of classification. The author, a professor at Rutgers, dedicated the book to the much respected Moravian botanist

Lewis David von Schweinitz (1786–1834) of Bethlehem, Pennsylvania.

Wright, John (1796–1873) and James Hall (1811–1898). *A Catalog of Plants Growing without Cultivation in the Vicinity of Troy*. Troy, N.Y.: N. Tuttle, 1836. [NSyU]

An inventory and guide to the plants growing within ten miles of Troy, New York, written by protégés of Amos Eaton.

Priest, Michael L. [dates unknown]. *Medical Companion*. Exeter, N.H.: J. C. Gerrish, 1838. [NSyU-M]

This volume by the physician Priest was written for persons living in the country or spending time at sea. A listing of non-technical descriptions of medicinal plants accompanies text characterizing human diseases and their remedies.

Torrey, John, and Asa Gray (1810–1888). *A Flora of North America*. 3 vols. New York: Wiley and Putnam, 1838–43. [NSyU]

The beginnings of a comprehensive flora that was never completed as envisaged, this scholarly collaborative work on indigenous and naturalized plants combined the considerable skills of two outstanding American botanists, professors at Columbia (and later Princeton) and Harvard, respectively. The work is dedicated to the foremost British botanist of the day, Sir William Jackson Hooker, Regius Professor of Botany, University of Glasgow, Scotland, and, later, Director of the Royal Botanical Garden at Kew, near London.

Gray, Asa. *The Botanical Textbook*. New York: Wiley and Putnam, 1842. [NSyU]

Following his earlier book, *Elements of Botany* (1836), Gray sought in this text to develop a book that would (but never did) supplant Amos Eaton's *Manual*.²¹

Torrey, John. *A Flora of the State of New York*. 2 vols. Albany, 1843. [NSyU-F; NSy]

In 1836 the Legislature of the State of New York commissioned a survey of the natural history of the state. In his capacity as director of the botanical survey, Torrey compiled this impressive illustrated flora. Colored lithographs with technical botanical details add much to this important early state flora.

21. A. Hunter Dupree, *Asa Gray: 1810–1880* (Cambridge: Belknap Press of Harvard University Press, 1959), 125.

Smith, Elisha [dates unknown]. *The Botanic Physician, being a Compendium of the Practice of Medicine, upon Botanic Principles*. New York: Daniel Adee, 1844. [NSyU-M]

A revised version of *Smith's Botanic Physician* (1830) written by Isaac S. Smith, Elisha's father, this volume appeared in two parts and included sections on the "Art of Healing" and *materia medica*.

Good, Peter P. (1789?–1875). *The Family Flora and Materia Medica Botanica containing the Botanical Analysis, Natural History, and Chemical and Medicinal Properties of Plants*. 2 vols. Elizabethtown, N.J.: Published by the Author, 1845. [NSyU; NSyU-M (vol. 1 only)]

An illustrated directory of plants and their uses published quarterly in parts for subscription.

Emerson, George B. (1797–1881). *A Report on the Trees and Shrubs Growing Naturally in the Forests of Massachusetts*. Boston: Dutton and Wentworth, 1846. [NSyU-F]

A commissioned inventory of woody plants arranged according to the natural system, submitted by the author to the state governor.

Strong, Asa B. [dates unknown]. *The American Flora*. 4 vols. New York: Strong and Bidwell, 1846. [NSy (vol. 1 only)]

A *materia medica* providing non-technical botanical descriptions along with the medical uses and properties of a diverse array of plants. Beautiful handcolored engravings accompany the text.

Gray, Asa. *A Manual of the Botany of the Northern United States*. Boston: James Munroe, 1848. [NSyU; NSyU-F]

This first edition of Gray's monumental work, dedicated to his teacher, colleague and confidant, John Torrey, was intended to be a pocket volume. Its listing of plants according to the natural system of classification did much to popularize that system in America. Through eight editions (the later ones edited by subsequent Harvard botanists and the last appearing in 1950) this work became a standard botanical taxonomic reference for the eastern United States.

Michaux, François André, and Thomas Nuttall. *The North American Sylva*. 6 vols. Philadelphia: Robert P. Smith, 1852 [NSyU; NSyU-F, another edition. 6 vols. in 5. Philadelphia: D. Rice and A. N. Hart, 1857]

Produced with stunning color plates, this set describes trees of the United States and Canada. Volumes 1–3 are a translation by

- A. L. Hillhouse of Michaux's *L'Histoire des arbres forestiers de l'Amérique septentrionale* and cover the eastern United States; volumes 4–6 were written by Nuttall to complete the project by including species of the western states: they appear only in English language editions.
- Tatnall, Edward (1818–1898). *Catalogue of the Phaenogamous and Filicoid Plants of Newcastle County, Delaware*. Wilmington: J. T. Heald, 1860. [NSyU-F]
 A local flora modeled after the work of Asa Gray, it updated an earlier list of flora of that region.
- Thomson, Cyrus (1797–1867). *Materia Medica: A Book for Everybody*. Geddes, N.Y.: Published by the Author, 1863. [NSyU-M]
 Described by the author as a “treatise upon the laws of health” this work was written as a guide to natural medicine for the layman. It contains descriptions and illustrations of “vegetables” used medicinally and recipes to prepare them for use.
- Paige, E. W. [dates unknown]. *Catalogue of the Flowering Plants of Schenectady County*. Albany: Van Benthuyzen, 1864. [NSy]
 This pamphlet, which has no illustrations, lists all the herbaceous plants observed by the author in Schenectady County, N.Y. It was intended as a working list to be added to as necessary.
- Wood, Alphonso (1810–1881). *Class-book of Botany: Being Outlines of the Structure, Physiology, and Classification of Plants*. Boston: A. S. Barnes, 1864. [NSyU; NSyU-F]
 A general text for secondary schools, this book was published in numerous editions over several decades. Its popularity arose, in part, from a rather extensive flora included within the text, making the book a useful guide to plants.
- Curtis, Moses Ashley (1808–1872). *Geological and Natural History Survey of North Carolina. Part 3, Botany*. Raleigh, North Carolina: Institution for the Deaf and Dumb and the Blind, 1867. [NSyU-F]
 The publication of this catalogue of the indigenous and naturalized plants of North Carolina had been delayed by the Civil War. It was originally intended as a companion to the author's treatise on the woody plants of the state, published in 1860. Curtis was a skilled mycologist and correspondent of Asa Gray and other botanists.
- Meehan, Thomas (1826–1878). *The Native Flowers and Ferns of the United States*. 2 vols. Boston: L. Prang, 1878. [NSyU-F]

- The lack of an illustrated flora of the United States prompted the author, a professor at Pennsylvania State University, to produce this work, which amounts to an anthology of “the most beautiful, interesting, and important from among the vast number of plants which grow in different parts of our country”. The intent was to produce an attractively illustrated set for popular use rather than of technical value. The arrangement of species is asystematic.
- Eaton, Daniel Cady (1834–1895). *The Ferns of North America*. 2 vols. Salem, Mass.: S. E. Cassino, 1879. [NSyU]
 These volumes present descriptions and distribution of ferns, beautifully illustrated with color plates (figs. 4 and 5). The author, who studied at Harvard, was the grandson of Amos Eaton; he dedicated the work to his professor, Asa Gray.
- Hollick, Charles Arthur (1857–1933), and Nathaniel Lord Britton (1859–1934). *The Flora of Richmond County, New York*. Staten Island, N.Y.: Published by the Authors, 1879. [NSyU-F]
 A compilation that amounts to a checklist of the vascular plants of Richmond County. Britton became professor of botany at Columbia University and the first director of the New York Botanical Garden.
- Goodale, George L. (1839–1923). *Wild Flowers of America*. Boston: S. E. Cassino, 1882. [NSy]
 Despite a title that sounds comprehensive, this single volume describes and illustrates with color plates only fifty American wildflowers. The choice and presentation of plants follow no obvious order or arrangement.
- Dudley, William Russel (1849–1911). *The Cayuga Flora*. Ithaca, N.Y.: Andrus and Church, 1886. [NSyU-F]
 A catalogue of the flowering plants growing outside of cultivation in the Cayuga Lake basin, written by the renowned Cornell, and later Stanford, botanist.
- Sargent, Charles Sprague (1841–1927). *The Sylva of North America*. 14 vols. Boston: Houghton and Mifflin, 1892–1902. [NSyU-F; NSy]
 The magnum opus of the Director of the Arnold Arboretum of Harvard University, these magnificent scholarly folios, superbly illustrated with French engravings, became the authoritative American dendrological reference. This work covers all of North America excluding Mexico. Individual volumes were dedicated to scientists or patrons of science including André and François Mi-

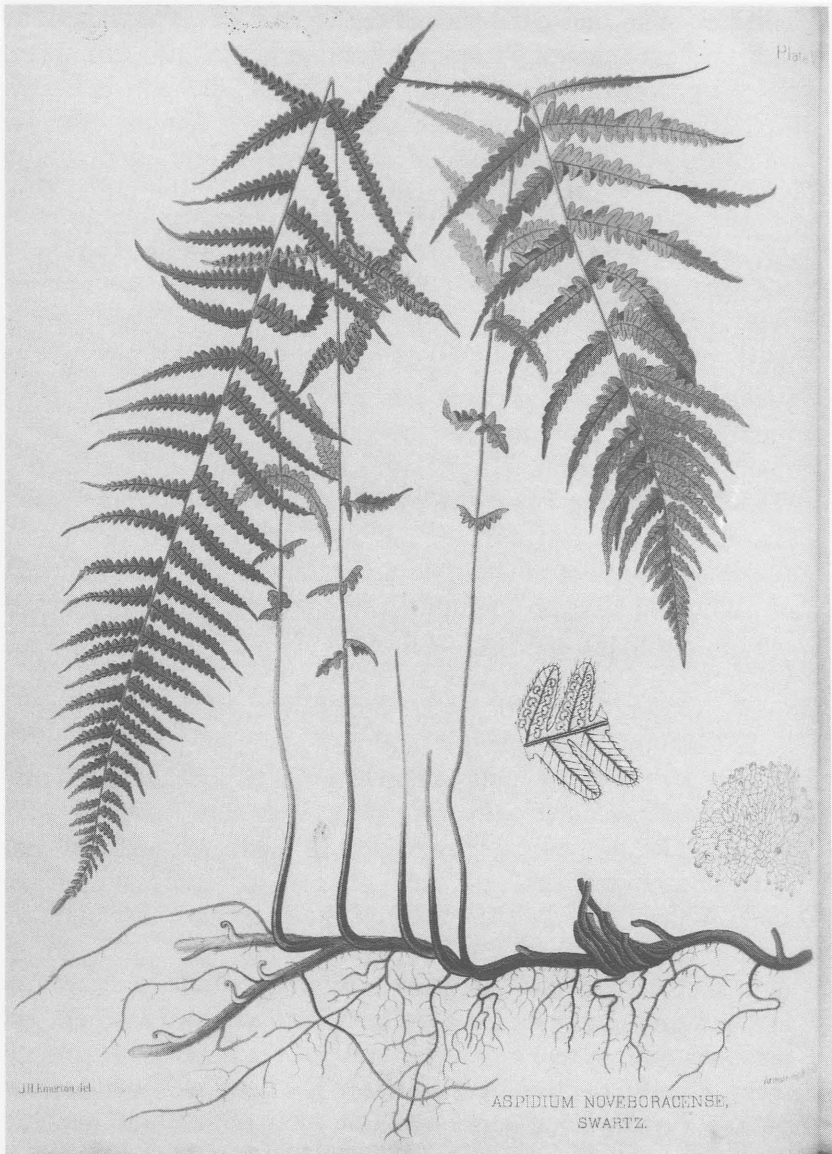


Fig. 5. New York shield fern, *Thelypteris noveboracensis* (L.) Nieuwl., a plant of moist woods and thickets from Canada to Virginia (D. C. Eaton, *The Ferns of North America*, 1879, Plate 7).

caux, Asa Gray, George Engelmann, Sir Joseph Dalton Hooker, and John Muir.

Britton, Nathaniel Lord, and Addison Brown (1830–1913). *An Illustrated Flora of the United States, Canada, and the British Possessions from Newfoundland to the Parallel of the Southern Boundary of Virginia and from the Atlantic Ocean Westward to the 102nd Meridian*. 3 vols. New York: Scribner's, 1896–98. [NSyU-F]

Britton wrote the text of this impressive work, which was the first complete illustrated flora describing all known vascular plant species from the ferns through the flowering plants for an area much larger than that treated in Gray's *Manual*. This reference and its several revisions have long served as handbooks and supplements to manuals more limited in descriptive information and coverage. The volumes, issued consecutively in 1896, 1897, and 1898, present the native and naturalized flora arranged in the natural phylogentic system of the German botanists Adolph Engler and his associate Karl Prantl, whose comprehensive treatment gained worldwide popularity.

Chapman, Alvan Wentworth (1809–1899). *Flora of the Southern United States*. 3d ed. New York: American Book Co., 1897. [NSyU-F]

A regional flora covering the states south of Virginia and Kentucky and east of the Mississippi River, modeled after Gray's *Manual*. Dedicated to the Rev. Moses Ashley Curtis, noted North Carolina botanist, the book was the forerunner of John K. Small's *Flora of the Southeastern United States* (1903).

I am grateful for the courteous assistance provided by the staffs at the Arents, Moon, Health Science, and Onondaga County Libraries. My colleague, Robert L. Burgess, read drafts of this manuscript, called my attention to several important references, and made a number of useful suggestions that have improved the text.

For a more comprehensive perspective of the literature of this field, the following book is recommended: Joseph Ewan, *A Short History of Botany in the United States* (New York: Hafner, 1969).