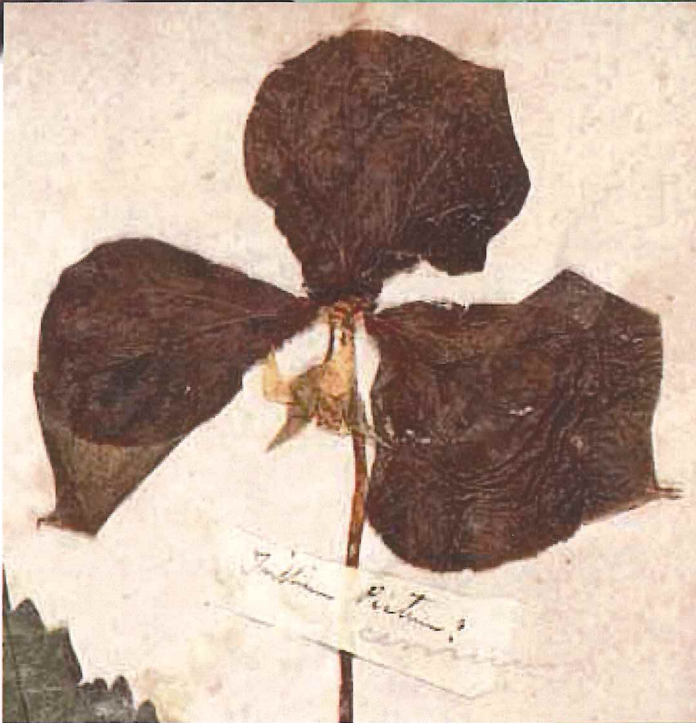


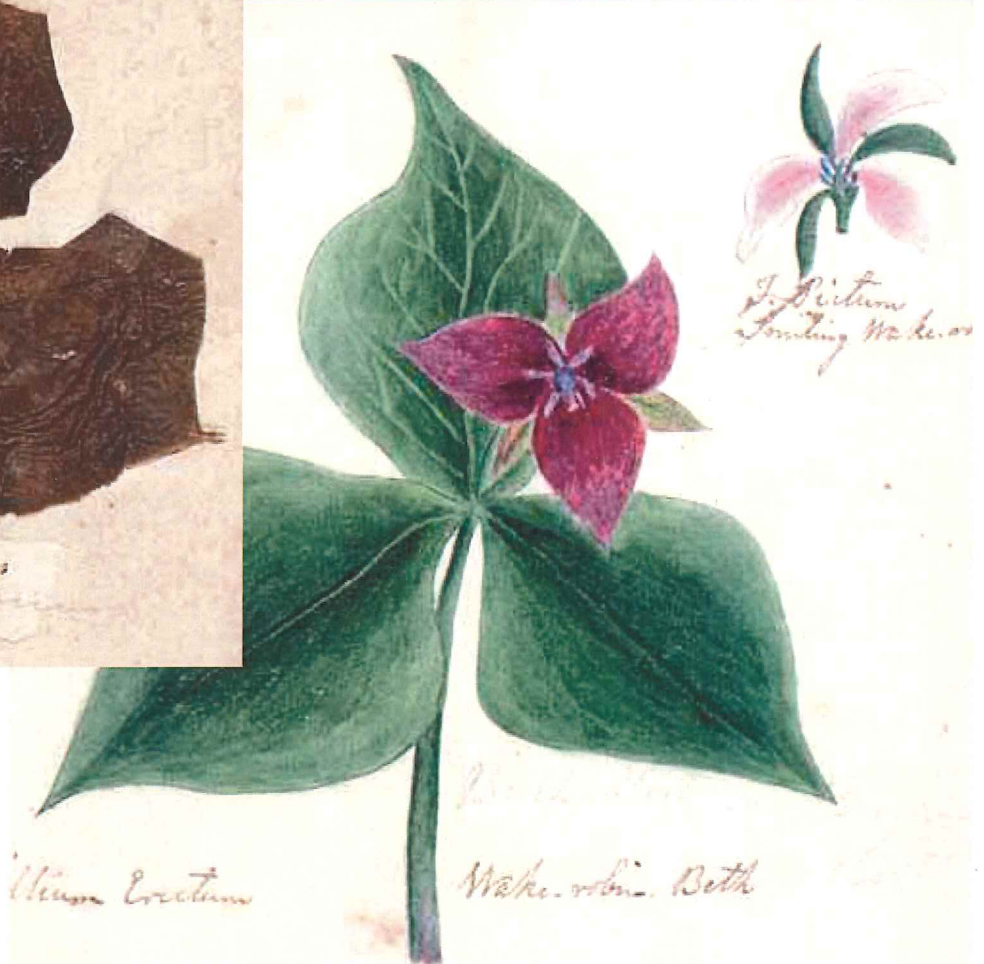
Stephen West Williams and



Top: Red trilliums (*Trillium erectum*) blooming mid-April in Deerfield. Photo: A.W. Bell

Above: Specimen of *Trillium cernuum*, collected by Williams who used it for its antihemorrhagic properties, Historic Deerfield Library.

Right: Drawing of Trillium species in Williams's botanical manuscript. Watercolor. Historic Deerfield Library.



Medical Botany

in the Connecticut River Valley

by Jeanne Solensky,
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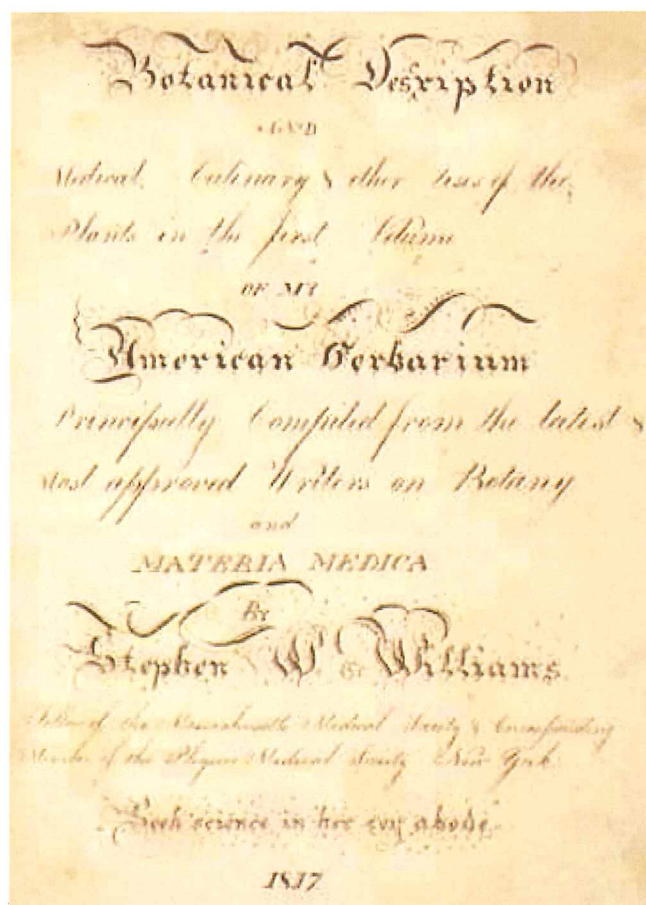
EARLY IN HIS CAREER, Dr. Stephen West Williams (1790-1855) embarked on a mission. Looking to his native town of Deerfield and the surrounding Connecticut River Valley region, he aimed to document local flora by collecting specimens with a focus on those with medicinal properties. Williams's interest in botany was cultivated at a young age, undoubtedly piqued by his grandfather, Dr. Thomas Williams, whose notes from William Salmon's *The English Herbal* were handed down through generations of Williams family doctors. As a student at Deerfield Academy, Williams copied Dr. Benjamin Rush's 1805 commencement speech to University of Pennsylvania medical students into his commonplace book, words that would guide him for decades to come:

*Let me recommend to your particular attention the indigenous medicines of our country. Cultivate or prepare as many of them as possible, and endeavour to enlarge the materia medica, by exploring the untrodden fields and forest of the United States. The ipecacuanha, the Seneca and Virginia snakeroots, the Carolina pink-root, the spice-wood, the sassafra, the butternut, the thoroughwort, the poke, and the straminium are but a small part of the medicinal productions of America. I have no doubt that there are many hundred other plants which now exhale invaluable medicinal virtues in the desert air... Who knows but that it may be reserved for America to furnish the world from her productions, with cures for some of those diseases which now elude the power of medicine?*¹

Williams later connected with botany professionals and enthusiasts at New York City's College of Physicians and Surgeons, now Columbia University, when attending lectures in the fall of 1812. Fortuitously, he became acquainted with Dr. David Hosack, professor of botany and materia medica and founder of the Elgin Botanical Garden in New York. Inspired by the Bartram family's successful commercial botanical garden in Philadelphia, and European public gardens, Hosack established Elgin in 1801 as the first American public botanical garden with the added purpose of training students and others in the search for curatives. Hosack, too, answered Rush's clarion call not only to expand medical education, but also to limit the young country's dependence on costly imported medicines. By the time of Williams's student days, Elgin, then under the direction of the College

and easily accessible to students, was home to nearly 2,000 plants grouped according to Linnaeus' principles of botanic arrangement.

Dr. Valentine Mott, noted surgeon and professor of anatomy at the College, influenced Williams on a more direct level. After returning to Deerfield, Williams maintained a long-lasting correspondence with his former instructor that featured the reciprocal exchange of treatment advice and the latest medical advances. In August 1813, Mott counseled Williams on the treatment of hydrophobia, or bite of a mad dog, with a recommendation of excising the infected area and then applying the herb *Scutellaria lateriflora*, also known



Title page of Williams's botanical manuscript featuring Harriet Goodhue's calligraphy, 1817. Historic Deerfield Library.

Specimen of *Scutellaria latiflora* collected by Williams. Dr. Mott recommended this herb to treat hydrophobia. Historic Deerfield Library.

Opposite page: Drawing of *Scutellaria latiflora* by Orra White in Williams's botanical manuscript. Watercolor. Historic Deerfield Library.





as skull cap and mad dog weed, a perennial in the mint family. Mott even included a dried specimen and a colored plate to assist Williams in his search for the native herb typically found near marshes and meadows. Another letter written three months later contained Mott's postscript illuminating the botany exchange in play: "I received a large bundle of *scutellaria* a short time after thy letter came to hand stating that it was readily procured about Deerfield. It came from an old Physician in New Jersey to whom I wrote."²

Williams's study of botany further continued when Amos Eaton lectured on the subject in nearby Amherst and Northampton in 1816 and 1817. When Williams began his systematic collection of area flora in 1816, two others, also inspired by Eaton, joined him in his wanderings: Edward Hitchcock, then preceptor of Deerfield Academy, and Dennis Cooley, a medical student in the Williams family practice. Together the trio of amateur botanists tramped around the mountains and valleys of Deerfield and surrounding towns, an area that includes many different soil and habitat types, which are home to a rich variety of plant

species. Their discovery and documentation of numerous native plants were shared with Amos Eaton who included their findings in his second edition of *A Manual of Botany* published in 1818.

Once collected, Williams carefully preserved his plant specimens on pages in a bound volume with little more identification than common and scientific names; only three have locality information: Pine Hill in Deerfield, Mt. Sugarloaf in South Deerfield, and nearby Northfield, with one specimen dated 1838 attesting to his continual addition of plants. Some plants, such as boneset, St. John's Wort, comfrey, and feverfew may be familiar to us today as natural remedies; other fancifully named ones, like Solomon's seal, blood root, and life everlasting, may be more surprising. To transform the herbarium into a more comprehensive reference tool, he created an accompanying volume entitled "Botanical Description and Medical, Culinary & other Uses of the Plants in the first Volume of my American Herbarium Principally Compiled from the latest & Most approved Writers on Botany and Materia Medica." Williams compiled two indices of both Latin and English names with cross references to descriptions and medicinal properties in the volume and to the herbarium. Beginning pages summarize the Linnaean organizational system citing Hosack's *Hortus Elginensis* catalog of plants in the Elgin garden published in 1806 and 1811. As noted in the title, he copied passages from leading botanical works from the Bartram family, Benjamin Smith Barton, William Woodville, William Cullen, William Withering, and John Lightfoot alongside his observations from patient treatments. Colored plates and drawings illustrating various plants were glued and tipped in as a visual aid. The most represented artist was his wife-to-be, Harriet Goodhue Williams. Their daughter Caroline, who also drew plants for her father, recalled decades later that "Mother, also, was a great lover of flowers and painted a collection of the flora of Deerfield the year after she was married."³ A drawing of *Scutellaria lateriflora*, the herb Dr. Mott wrote to Williams about, was illustrated by Orra White, then instructor in natural sciences and fine and decorative arts at Deerfield Academy, where she met her husband Edward Hitchcock. A skilled naturalist in her own right, she painted watercolors of specimens he collected at this time, and illustrated many of his later scientific publications.⁴ Their meticulous botanical drawings had longevity as teaching aids in Williams's later lectures to medical students at Dartmouth College in New Hampshire and Willoughby University in Ohio.

While Williams depended heavily on academic knowledge of the field, he also claimed to have "endeavored to procure information from every source which presented itself, either from the learned or unlearned, from the aboriginal Indian, and from the illiterate old woman. Some useful

information may be obtained even from such sources.” However, he quickly discounted Native American experience with plants that informed many textbooks he relied on as “cabalistical, superstitious and apocryphal” despite having a close connection with a noted healer.⁵ Williams was related to Native American chief and physician, Louis Watso, through ancestor Eunice Williams, a captive in the 1704 raid who remained with the Kahnawake Mohawk tribe.⁶ Watso and other members of his Abenaki tribe in Canada visited the Deerfield area numerous times, with the 1837 visit documented in the local Greenfield newspaper and the only known time the two met. Williams valued Watso’s knowledge enough to include in his 1849 “Report on the Indigenous Medical Botany of Massachusetts,” yet refused to follow Watso’s recommendation of a snakeroot preparation to treat his own heart palpitations.⁷ His bias toward formally educated physicians blinded him to fully accepting the contributions of Native Americans believing their simple remedies inadequate for civilized men.

Williams’s skepticism also targeted other untrained healers and herbalists like the Thomsonians, a popular group who advocated natural alternatives, and an herb closely aligned with them and Native Americans. *Lobelia inflata*, also known as Indian tobacco and puke weed, was chewed by Native Americans to cleanse stomachs and smoked as a

ceremonial medicine. Thomsonians referred to it as a “divine remedy” for numerous complaints like cough, asthma, and tetanus. Although Williams found a tincture useful for asthma, he stated that the powerful emetic was indiscriminately and too often prescribed leading to violent vomiting, profuse sweating, convulsions, and even death.⁸

Despite misgivings about some plants, Williams advocated for them in reports published in medical journals wherein he described his use of concoctions, powders, and poultices in patient treatments. Another toxic plant that Williams used in successful treatments was *Conium maculatum*, or common hemlock, once employed by ancient physicians only to later fall out of favor rather unfairly. Hemlock was acknowledged for its efficacy in externally treating rheumatism, tumors, ulcers, gangrenes, and glandular swellings. Williams himself prescribed hemlock in multiple cases of abscessed or tumored breasts through a combination of plasters, powdered leaves, and pills, sometimes in conjunction with white pond lily poultices to encourage suppuration. The cure took a few weeks to relieve complaints, but proved successful in several cases, even once negating the need for an operation recommended by both another doctor and Williams himself.⁹

As unexpected as a modern audience may find the use of hemlock, perhaps the ubiquitous common violet is as



Indian tobacco (*Lobelia inflata*) blooming in Deerfield.
Photo: A.W. Bell



Specimen of rattlesnake violet, (*Viola pubescens*), also called downy yellow violet, collected by Williams to treat snake bites. Historic Deerfield Library.



Downy yellow violet
(*Viola pubescens*)
Photo: A.W. Bell

well. The natural mucilage in several violets (*Viola tricolor*, *cucullata*, *pedata*, and *ovata*) contains polysaccharides that swell in water to produce a soothing gel-like substance Williams used in ointments for dry skin and chronic eye inflammations and syrups to alleviate sore mucous membranes and coughs. The violet's mild properties were well suited in preparations for children's laxatives, urinary troubles, and skin eruptions. *Viola ovata* (*pubescens*) or rattlesnake violet, the most gelatinous one highlighted by Williams, was best for dealing with snake bites by drawing toxins out through a regimen of drinking teas and bathing infected areas with infusions.¹⁰

Another plant Williams promoted was trillium, one he considered unfortunately overlooked by physicians, for its properties. He utilized the powdered root of the three species found in the woods of Deerfield—*T. erectum*, *erythrocarpum*, and *cernuum*—to stop hemorrhages, and documented its use by local doctors as an antidote for severe menstrual bleeding, hemoptysis, skin eruptions, and scrofula.¹¹

Through collecting specimens, treating patients, and disseminating information in publications and lectures, Williams's contributions to the field of botanical materia medica were profound. He collected more than 550 specimens of 453 species in his "American Herbarium" now disbound and carefully mounted on nearly 400 pages in the Historic Deerfield Library. Almost half of the specimens had medicinal properties. As integral as the herbarium was to Williams in his practice, its value resonates today for capturing a moment in time of a world that has shifted: local native species have been diminished and introduced European species have become naturalized and widespread.¹² Thanks to Williams's curiosity of 200 years ago, this window to the past provides extensive knowledge of the flora of Deerfield.

END NOTES

1. Stephen West Williams, "A Commonplace Book Containing Extracts and Compositions Collected and Written by S. W. Williams in Early Childhood, 1808-1809", 32-34. Williams Family Papers, Box 14, Pocumtuck Valley Memorial Association Library.
2. Valentine Mott to Stephen West Williams, New York, NY, August 12, 1813; Valentine Mott to Stephen West Williams, New York, NY, November 28, 1813. Williams Family Papers, Box 11, Folder 1, Pocumtuck Valley Memorial Association Library.
3. Caroline Williams Putnam, *A Few Reminiscences of My Girlhood*, (Grand Rapids, MI: Mattason & Cook, 1913), unpaginated.
4. Orra White Hitchcock's bound volume "Herbarium Parvum Pictum" with 176 watercolors of Hitchcock's specimens is in the Deerfield Academy Archives.
5. Stephen West Williams, "Indigenous Medical Botany," *The New York Journal of Medicine and the Collateral Sciences* 7 (May 1846): 368-69.
6. For a discussion of how the two men were related, see Margaret M. Bruchac, "Historical Erasure and Cultural Recovery: Indigenous People in the Connecticut River Valley," (PhD diss., University of Massachusetts Amherst, 2007), 227-30.
7. Stephen West Williams, "Report on the Indigenous Medical Botany of Massachusetts," *Transactions of the American Medical Association*, 2 (1849): 883.
8. Stephen West Williams, "Indigenous Medical Botany, No. 3," *The New York Journal of Medicine and the Collateral Sciences* 7 (September 1846): 175-82.
9. Stephen West Williams, "On the use of Conium Maculatum in Affections of the Female Breast, and in Cancerous Ulcerations," *The American Journal of the Medical Sciences* 9 (1831): 77-81.
10. Stephen West Williams, "Indigenous Medical Botany, No. 4," *The New York Journal of Medicine and the Collateral Sciences* 7 (November 1846): 321-26 and Stephen West Williams, "On the Medical Uses of the Viola Ovata," *The American Journal of the Medical Sciences* 13 (1833): 310-12.
11. Stephen West Williams, "Indigenous Medical Botany, No. 5," *The New York Journal of Medicine and the Collateral Sciences* 8 (January 1847): 94-98.
12. Karen B. Searcy, "The Stephen West Williams Herbarium: An Early 19th Century Plant Collection from Deerfield, Massachusetts," *Rhodora* 119, no. 978 (April 2017): 132-36.