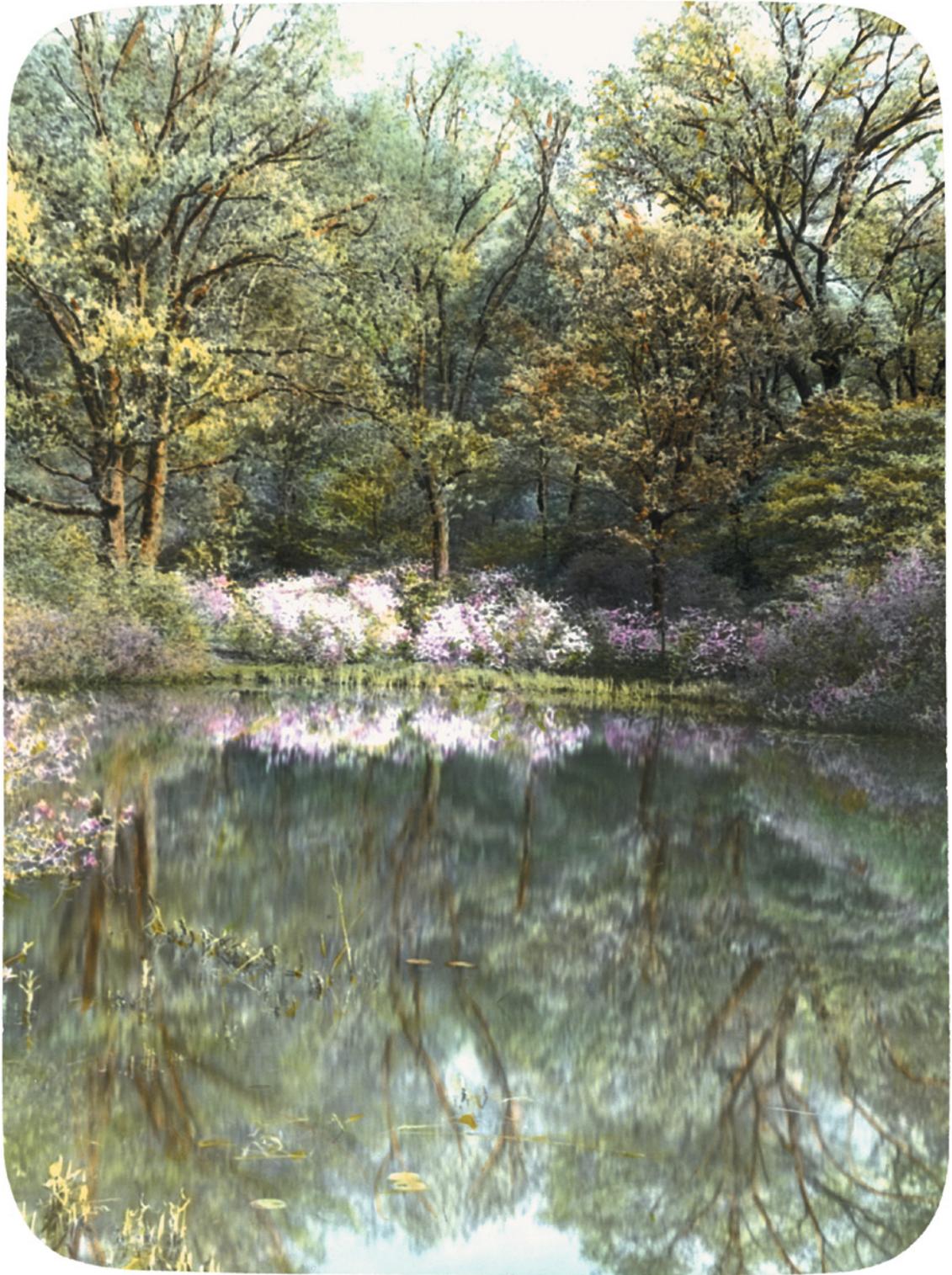




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The Magazine of the Arnold Arboretum

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The ARNOLD
ARBORETUM
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Front cover: Cinco de Mayo rose (*Rosa* 'Wekcobeju').
Photo by Nancy Rose.

Inside front cover: A hand-colored lantern slide from around 1920 showing the Arboretum pond later named for Charles Faxon. The pink-flowered shrubs in the woods are pinkshell azalea (*Rhododendron vaseyi*). Archives of the Arnold Arboretum.

Inside back cover: 'Snow Queen' oakleaf hydrangeas (*Hydrangea quercifolia* 'Snow Queen', accession 318-94) in bloom in front of the Arboretum's Hunnewell Visitor Center. Photo by Nancy Rose.

Back cover: This rose was labeled *Rosa spinosissima* but its yellow flowers indicate it may be *R. × harisonii*, a hybrid of the white-flowered *R. spinosissima* and yellow-flowered *R. foetida*. Photo by Nancy Rose.

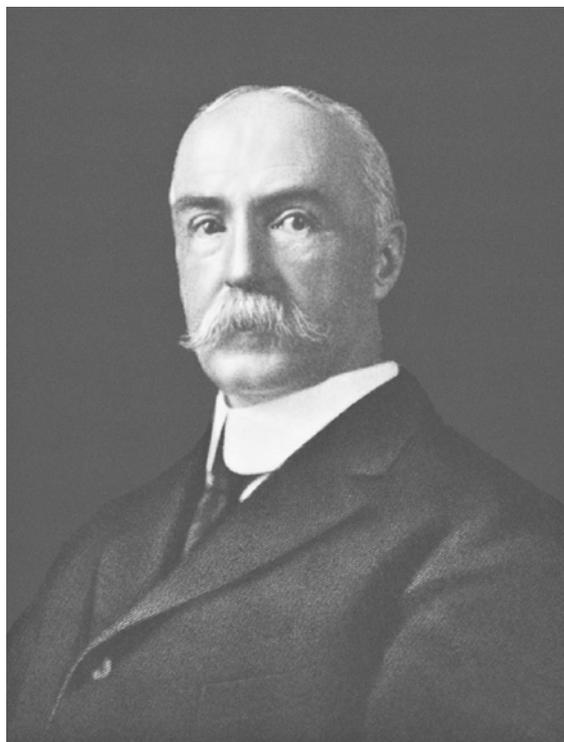
Charles Edward Faxon: Botanical Draftsman

Michael S. Dosmann and Lisa E. Pearson

Near the Arnold Arboretum's Bradley Rosaceous Collection, at the south end of Meadow Road, lie three ponds whose names commemorate three staff members from the early years of the Arboretum: Jackson Dawson (propagator and superintendent), Alfred Rehder (taxonomist), and Charles Faxon (assistant director and botanical illustrator). These men, along with founding director Charles Sprague Sargent and explorer-botanist Ernest Henry Wilson, played central roles in shaping the Arboretum into the renowned institution that it remains today. Faxon's mark—in indelible ink no less—is the one we celebrate here.

Charles Edward Faxon was born in the Jamaica Plain section of Boston, Massachusetts, in 1846, not far from the land that was to become the Arnold Arboretum in 1872. As a child, he developed dual interests in natural history and art. Much of his schooling in natural history was provided by his older brother Edwin Faxon (1823–1898), who was an accomplished naturalist and had a particular interest in the cryptogams of New England. After their father's death in 1855, Edwin took Charles and younger brother Walter under his wing, teaching them the flora and fauna of the countryside surrounding Boston. Edwin had collected an extensive herbarium, which his younger brothers no doubt also used for their studies. Around the same time, English artist James D. Harding published *Lessons on Trees*, a manual that Charles studied to learn the basics of illustration. As a teenager, he was apparently known to proficiently reproduce Audubon's illustrations of birds and make successful pencil sketches and watercolors of the New England landscape.

A love of nature might lead to a happy avocation, but as a career, even now it doesn't always pay the bills. And so, following his public school education, Charles enrolled in the Lawrence



A portrait of Charles Faxon from around 1916.

Scientific School (now the School of Engineering and Applied Sciences at Harvard University), graduating in 1867 with a degree in civil engineering. He then took up work clerking in the family business of leather procurement and merchandizing. Charles Faxon remained a lifelong learner and studied the classics of English literature as well as teaching himself most of the modern European languages.

In the late 1870s, a pivotal event for the Faxon brothers occurred when Yale Professor Daniel Cady Eaton called upon them to make collections for Eaton's two-volume *Ferns of North America* (published in 1879 and 1880). It was in this work that Charles's illustrations, executed in watercolors, first appeared in print,



A contemporary view of Faxon Pond (see inside front cover for a lantern slide from nearly the same viewpoint, circa 1920).

wonderfully complementing Eaton's erudite text. Charles was responsible for a number of the plates in Volume One and all of the plates in Volume Two.

FAXON AT THE ARBORETUM

In 1879, Faxon became a botany instructor at Harvard's Bussey Institution, a school adjacent to the Arboretum that was dedicated to the agricultural and natural sciences. In 1882, C. S. Sargent hired him on a part-time basis as an

assistant director at the Arboretum. In this position he was to curate the herbarium and organize the library, both of which were growing as quickly as the living collections. However, Faxon's primary charge was to assist Sargent with the *Silva of North America* by producing its illustrations. This seminal treatment, written by Sargent, spanned 14 volumes published between 1891 and 1902, and covered the known woody plants of the United States and Canada. Sargent—the then “dean of American dendrology”—wrote eloquently and assertively about the various ligneous species, while Faxon brought the plants to life with painstaking detail and beauty in pen-and-ink. By the end of the project, some 744 plates for the *Silva* had been produced from Faxon's ink drawings.

One fine example is his illustration of the vine maple (*Acer circinatum*), native to the Pacific Northwest. Faxon captured the full array of diagnostic characteristics necessary for identification, without whimsy, yet with an astonishing delicacy and grace. In the forefront, the eyes are drawn to a rounded

leaf, the margins and primary veins boldly and prominently outlined, as are the striking fruits from the same plane. The remaining leaf of this branch, and those shown on the flowering and sterile branches in the background, are drawn in lighter weights. When coupled to his subtle use of shading, the variable line weights effectively create a depth of field, a sense of realism that does not detract from the scientific purpose. Magnified details of individual flowers, both male and female, as well as fruits, accompany



C.E. Faxon, del.
POLYPODIUM PECTINATUM, L.

Armstrong & Co. Lith. Boston.
POLYPODIUM PHYLLITIDIS, L.

Illustrations of two *Polypodium* species and brittle maidenhair fern (*Adiantum tenerum*) by Charles Faxon, published in Daniel Cady Eaton's *Ferns of North America*, 1879–1880.

Plate LXXVII.



C.E. Faxon, del.

Armstrong & Co Lith. Boston.

ADIANTUM TENERUM, Swartz.

Silva of North America



C. E. Faxon del.

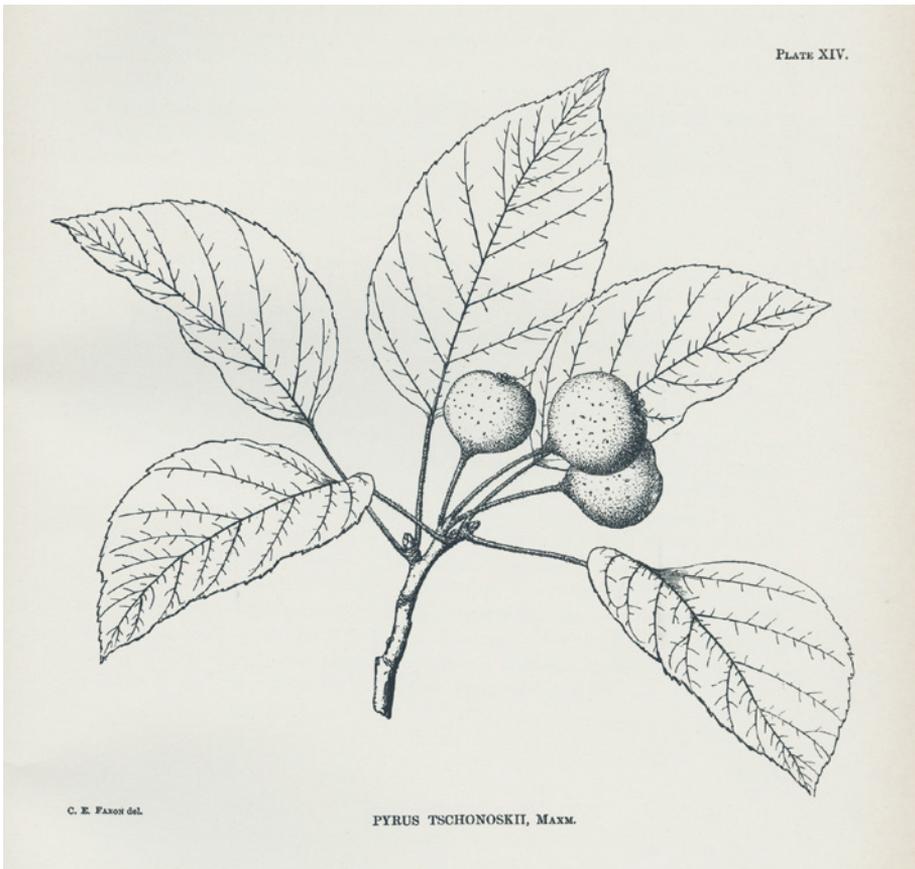
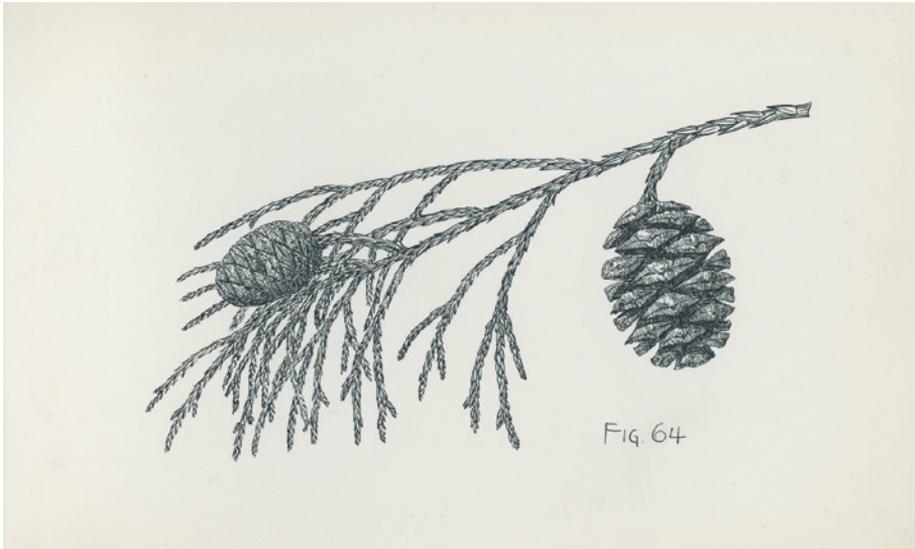
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ACER CIRCINATUM Pursh

A. macrocarpon divers.?

Imp. R. Tancour Paris

Charles Faxon's accurate and elegant illustration of *Acer circinatum* from the *Silva of North America*.



Top: A Charles Faxon drawing of *Sequoiadendron giganteum* (then known as *Sequoia gigante*) foliage and cone from Sargent's *Manual of the Trees of North America*.

Bottom: A Charles Faxon drawing of *Malus tschonoskii* (then known as *Pyrus tschonoskii*) from Sargent's *Forest Flora of Japan*. Two *M. tschonoskii* specimens (accession 3678-A and B) grown from seed that Sargent collected in Japan in 1892 still grow in the Arboretum collections.

the leaves. Faxon's drawings were created first as botanical tools: that they are beautiful works of art is a bonus. His training as an engineer, where the rules of technical drawing and drafting were crucial, certainly was put to great use as a botanical illustrator, but he also possessed an artist's eye for composition, which served to raise his work beyond that of his peers.

Perhaps no finer praise exists than that provided by naturalist John Muir, who reviewed the *Silva* in the July 1903 issue of *The Atlantic Monthly*. He wrote, "At the first glance through the book, everyone must admire the fullness and beauty of the plates. They were made in Paris, from drawings from life, by Faxon, the foremost botanical artist in America ... these are so tellingly drawn and arranged, [that] any one with the slightest smattering of botany is enabled to identify each tree, even without referring to the text." While the text was important, the volumes would have been far less successful without Faxon's illustrations. Professor John George Jack, a friendly colleague of Faxon's at the Arboretum, felt similarly. Writing in an unpublished reflection (Archives of the Arnold Arboretum), Jack notes that without Faxon, the *Silva* "would never have grown to its final importance." And, interestingly, he observed that while Sargent "possessed financial means, a strong will and a liking for gardening and trees ... , he was a poor observer of details in nature, a deficiency which was abundantly supplied by Mr. Faxon." It may well be that it was through Faxon's ability to recreate natural phenomena that Sargent was able to truly grasp the plants he was charged with describing.

In addition to his work on the *Silva*, Faxon also produced illustrations for other Sargent publications including the journal *Garden and Forest* (285 Faxon drawings appeared in the ten volumes published from 1888 to 1897), *Forest Flora of Japan* (1894), and the *Manual of the Trees and Shrubs of North America* (1905), which contained 642 Faxon drawings. He also created illustrations for other authors and, according to Sargent, some of the best examples of his work were the 34 drawings that accompanied John Donnell Smith's descriptions of Guatemalan plants, published in the *Botanical Gazette* from 1888 to 1894. All told, nearly 2,000 of Faxon's illustrations were published over a 34-year period, an impressive record!

Beyond his accomplishments as an illustrator, Faxon served dutifully and steadfastly in the management of the library and herbarium. In a letter written August 15, 1905, by Faxon to his colleague Alfred Rehder (who was attending the 1905 Botanical Congress in Vienna), we get a wonderful glimpse of Faxon's pragmatic nature, as well as a sense of humor. On the subject of taxonomy and the subsequent naming of plants (just as much an issue then as it is now), Faxon laments about the proceedings of the botanical congress: "I fear there is still much to be done before nomenclature rests on a permanent basis. At any rate, for the present there will be as much confusion as ever." He also seems to poke a bit of fun at Sargent's obsession with haw-

From Rough Sketch to Final Press

THE ARCHIVES OF THE ARNOLD ARBORETUM hold all of Faxon's original ink drawings for the *Silva of North America* and the *Manual of the Trees and Shrubs of North America*, as well as many of his initial pencil sketches. The initial sketches are rather coarse, but served as the base upon which the final product would rest. After his rough sketch—often lacking much detail—was complete, Faxon would flip the paper over and rub the reverse side with pencil. He then placed this, image side up, on the final drawing sheet and transferred the image by drawing over the outlines. The refined final drawing would then be produced in ink.

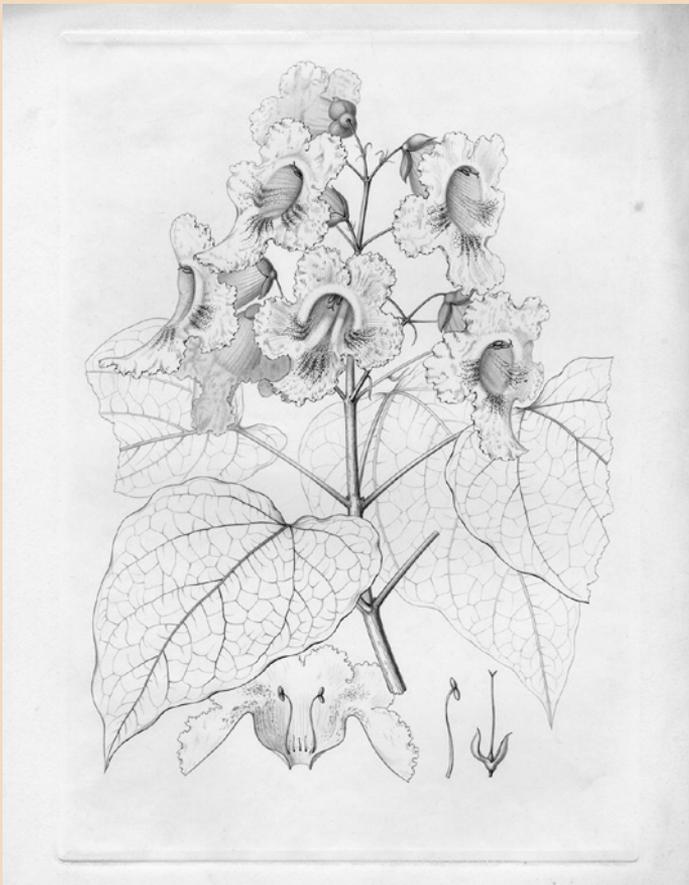
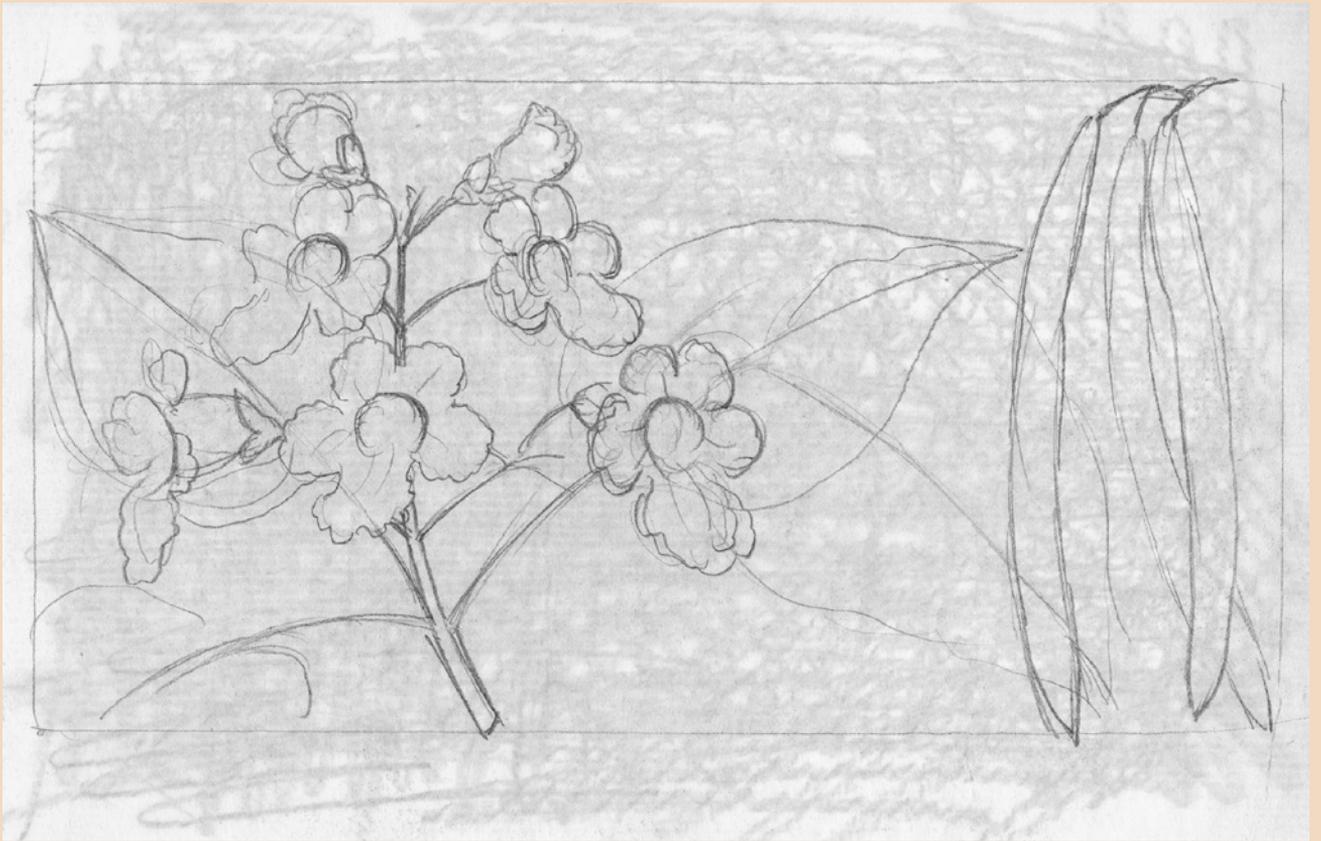
Sargent chose to have Faxon's magnificent ink drawings engraved in Paris, a center of that art, by Eugene and Philibert Picart under the supervision of Alfred Riocreux, whom Sargent described as "the most distinguished European botanical artist." He employed the noted horticulturist and landscape designer Édouard André as his agent in France to oversee the work of the sometimes temperamental engravers.

Facing page, clockwise from top:

Faxon's rough sketch of *Catalpa speciosa*. The pencil rubbings on the back that allowed him to copy the sketch are visible through the thin paper.

Faxon's refined ink drawing of *Catalpa speciosa*, which was then sent to the engravers in Paris.

A proof print from the final engraved plate of *Catalpa speciosa* for the *Silva of North America*.





Faxon at work in the Arnold Arboretum library.



C. S. Sargent named over 700 hawthorn (*Crataegus*) species, many of which have since been reclassified. Fellow hawthorn enthusiast C. D. Beadle named a species that Sargent collected near Rome, Georgia, after him. This is Faxon's drawing of *C. sargentii* from the *Silva of North America*.

thorns (and his penchant for assigning names), noting that he (Sargent) "is describing new species of *Crataegus* as fast as ever, having done some one hundred this summer!"

Interestingly, Faxon chose not to exhibit his botanical expertise by writing papers; his most noteworthy article was not about plants but rather about the birds of the Arnold Arboretum. Sargent and Jack both attested to his exceptional knowledge and suggested that his lack of authorship was due to his great modesty and unselfish nature. In fact, Jack credits Faxon with providing much of his botanical training. Unlike Jack and many other of his Arboretum colleagues, Faxon did not travel the world, instead preferring short trips to the Berkshires in Massachusetts, the Green Mountains of Vermont, or the Mount Washington region of New Hampshire.

Faxon died in 1918, shortly after suffering a fall at home. In a tribute written in *Rhodora* that same year, Sargent (not usually one to lavish much praise) writes that "Faxon united accuracy with graceful composition and softness of outline. He worked with a sure hand and a great rapidity, and few botanical draftsmen have produced more. Certainly none of them have drawn the flowers, fruits and leaves of as many trees. Among the very few who in all time have excelled in the art of botanical draftsmanship Faxon's position is secure, and his name will live with those of the great masters of his art as long as plants are studied."

For further reading:

Sargent, C. S. 1918. Charles Edward Faxon. *Rhodora* 20: 117-122.

Michael S. Dosmann is Curator of Living Collections and Lisa E. Pearson is Head of Library and Archives at the Arnold Arboretum of Harvard University

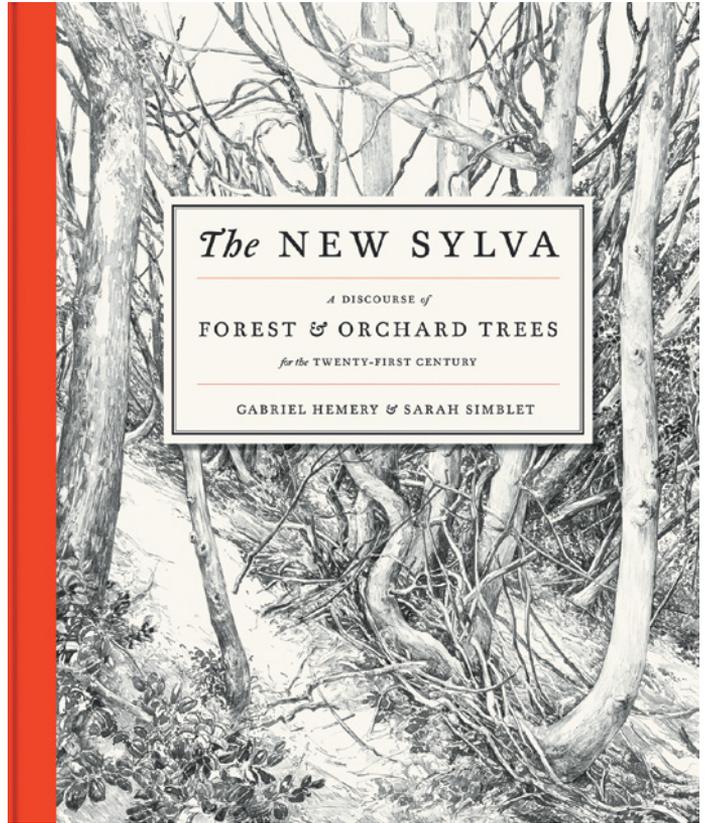
BOOK REVIEW *The New Sylva: A Discourse of Forest and Orchard Trees for the Twenty-First Century*

Phyllis Andersen

The New Sylva: A Discourse of Forest and Orchard Trees for the Twenty-First Century
Gabriel Hemery and Sarah Simblet
Bloomsbury, 2014. 390 pages.
ISBN 978-1-4088-3544-9

In 1664 the Royal Society in London published *Sylva, or A Discourse of Forest Trees, and the Propagation of Timber in His Majestie's Dominions*. The author, John Evelyn (1620–1706), was a founding member of the Society. Landowner, scholar, world traveler, Evelyn was a polymath whose concerns ranged from the causes of London's smog to the proper way to roll a gravel walk (use a marble roller obtained from "old Columns of diminished Antiquities preferably those from the Levant"). He was a colleague of Samuel Pepys, and like Pepys an accomplished diarist. He created a much admired garden at Sayres Court in southeast London where he wrote extensively on the art of garden making. Gabriel Hemery, a forest scientist and self-described silvologist, and Sarah Simblet, an artist and instructor at the Ruskin School of Drawing and Fine Art, have produced *The New Sylva* to honor Evelyn's achievement on the occasion of the 350th anniversary of its publication.

Evelyn's title reveals that his *Sylva* was not written to document native species or to propose forest planting and protection as part of greater environmental awareness, but as a call to replant trees and to protect the royal forests for the production of timber for ship building by the Royal Navy and for the building of defensive fortifications for cities and towns. His motive was economic, a prescription for increasing an inventory and for managing it with the latest forest management techniques. A careful courtier, Evelyn dedicated his *Sylva* to Charles II, stating that it was written not to instruct the King but to advise.

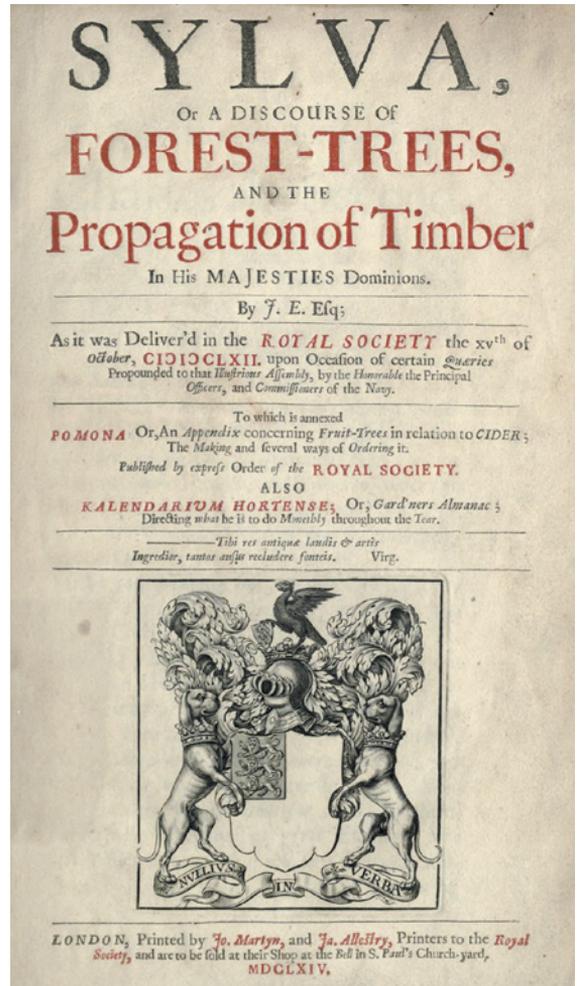


Whether or not Evelyn's *Sylva* actually increased timber production for ship building is in some dispute but he did inspire estate owners to increase and refine their tree planting practices. In fact, they may have been his intended audience. Evelyn unabashedly invoked class privilege by stating that his *Sylva* was "not altogether ... for the sake of ordinary rusticks, meer foresters and woodmen, but for the benefit and diversion of Gentlemen and persons of quality." With full display of his knowledge of classical texts he quoted writers of the ancient world (Cato, Cicero, Pliny) to highlight the depth of the historical value of trees: "Even the Garden of Eden had to be dressed and kept." He integrated myths and ritual and bits of poetry into his tree descriptions following the long tradition of viewing trees as imbued with mystery and power.

Evelyn developed four categories of trees in his *Sylva*: solid and dry timber (oak, beech, ash, chestnut, and walnut), light timber (maple, lime [linden], birch, and hazel), aquatical (poplar, alder, and willow), and fir trees and pines. Reflecting the structure of the British countryside, he added a section on fences, hedges, and coppices. His tree descriptions included details of form, growth characteristics, geographic distribution, cultural requirements, and value as timber. He added a section on “infirmities of trees,” a manual of tree ailments. A last chapter reflects on “Sacredness and the use of standing groves” that describes the significance of trees to societies across the world. But it was the oak that Evelyn deemed most valuable. He devoted over fifty pages of his text to this species so beloved by the British people for its strength, its economic value, and its visual distinction. Most notably, Evelyn’s 1664 *Sylva* did not include illustrations, reflecting its origins as a report to the King. It went through four editions in his lifetime and numerous editions after his death.

Sylva (now more often spelled “silva”) in its Latinate form refers to a place: a wood, a plantation, a grove. The word evolved in later usage to mean a particular form of botanical literature that describes trees of a particular region. Before the electronic age, silvas joined other forms of plant documentation with specific boundaries: floras, which were detailed descriptions of all the plants of a region both woody and herbaceous, and pomonas, which described fruit trees. Floras and pomonas were often sumptuous productions on fine paper with illustrations by well-known artists.

The exploration of the territories of North America provoked a heightened interest in new plant species including timber producing trees. François André Michaux (1770–1855), son of the French botanist André Michaux, produced *Histoire des arbres forestiers de l’Amérique septentrionale*, an account of his explorations of the United States north of Mexico and east of the Rocky Mountains. It was published in three volumes from 1810 to 1813 and later translated by Augustus Lucas Hillhouse into English as *The North American Sylva*. Michaux’s work was enhanced by illustrations by the renowned French flower painter Pierre-Joseph



The title page from John Evelyn’s *Sylva*, published in 1664.

Redouté and the botanical illustrator Pancrace Bessa. Thomas Nuttall (1786–1859), the British-born naturalist who spent much of his life exploring the United States documenting plants both known and unknown, produced a three volume appendix to Michaux’s work published from 1842 to 1849. It was not incidental that Michaux’s *North American Sylva* explored the timber potential of the United States for a French audience.

In 1882, Spencer Baird, secretary of the Smithsonian Institution, approached Charles Sprague Sargent (1841–1927), director of the Arnold Arboretum, and offered him financial support to create the *Silva of North America*. Baird was aware of Sargent’s first major publication, his 1884 *Report on the Forests of North*



Illustration of white oak (*Quercus alba*) by Pierre-Joseph Redouté, from Michaux's *Histoire des arbres forestiers de l'Amérique septentrionale* (later published in English as *The North American Sylva*).



Charles S. Sargent at work on his *Silva of North America* in 1904.

America exclusive of Mexico, prepared for the 1880 Census. Sargent also received a strong recommendation from the eminent botanist, Harvard's Asa Gray. Sargent agreed to the project with the stipulation that accurate illustrations be a critical part of the publication. Sargent immediately engaged Charles Faxon (1846–1918), then in charge of the Arboretum's library and herbarium, to produce the drawings for the *Silva*, working primarily from herbarium specimens. Sargent and the Smithsonian soon parted ways as Sargent calculated that the institution's meager funding would extend the project to 55 years. He sought and received private funding of his own. Like Evelyn, Sargent travelled widely

both to create the Census report, to enlarge his investigations for the *Silva* and, not incidentally, to add herbarium specimens for the Arboretum's growing collection.

Sargent worked on the *Silva* for over twenty years and eventually produced fourteen volumes, published from 1891 to 1902. He covered 585 trees, supplemented by 740 illustrations by Faxon. He discussed individual growing conditions, geographic importance, and details of structure and flower. He often deviated from his usual dry, direct prose to include descriptions of scenery in more literary terms and odd bits of what might be called cultural information. His biographer S. B. Sutton noted that



SARAH SIMBLET, FROM THE NEW SYLVA, WITH PERMISSION OF THE PUBLISHER

Sarah Simblet's detailed illustration of an English (or pedunculata) oak (*Quercus robur*) seedling from *The New Sylva*.

in his *Silva* he “delighted in offering morsels of curious information as though they were pieces of candy.”

The thread that connects these silvas is the need to integrate scientific and horticultural information with political, economic, and social history—a record of national pride and economic resources. All include a seasoning of tree myth and legend, from druids to the healing properties of individual plants. All have an underlying message of tree planting advocacy and responsible management practices for optimum yield.

Gabriel Hemery's *New Sylva* is both homage to Evelyn, who is liberally quoted throughout the text, and a summary of the current state of the forests of Britain—their composition, growing conditions, and national value. He includes a useful overview of 44 species, including the mechanics of their growth and structure. He offers introductory chapters on the influence of Evelyn's original publication as well as an overview of tree biology. Like all silvas, Evelyn's publication is a picture of British tree population at a point in time, subject to constant revision. Hemery's goal is to respect Evelyn's findings but to update his publication with a revised list that features new species unknown to Evelyn and revised findings on issues of nativity. For example, Evelyn was convinced that the sweet chestnut (*Castanea sativa*) was native to Great Britain. Subsequent research, including pollen analysis, concludes that it is native to the Mediterranean region, migrating very early to the British Isles. Hemery offers a sensible and refreshing view of the idea of nativity. He is not a hardliner on the introduction of “exotics,” noting that conservative thinkers today call them “aliens.” Evelyn called them “outlandish, rare and choice.”

Hemery tackles the description of oak culture as a scientist rather than the poetic and personalized rendering by Evelyn. He describes the biology, distribution, and habitat of the two species of oak native to Great Britain: the sessile oak (*Quercus petraea*) and the English (or pedunculate) oak (*Quercus robur*). He addresses their continued economic importance as a building material based on strength and durability.

Hemery's perspective is profoundly different than Evelyn's, viewing forest trees as part of biological communities including human intervention. He sees forest management as increasing the diversity of wildlife, protecting unstable soil conditions on hillsides, mitigating flood conditions and the heat island effect in cities, and offering recreation and aesthetic experience. He documents the link between diminishing forest land and global warming and the effect a warming atmosphere could have on timber strength. He describes forest management beyond Great Britain, such as shelterwood systems in Denmark, France, and Germany. Shelterwood plantings allows targeted extractions of mature trees while maintaining the best conditions for continued growth of younger trees.

Sarah Simblet's drawings, originally done in pen and ink, have great vitality. She captures individual species on both a micro and macro scale, moving from details of leaf and fruit to full winter form displaying branching patterns. In many cases she captures forest views with species shown in association with one another, often in historic British estate settings. *The New Sylva* combines an intelligent and graceful text with drawings on a varied scale: detail, tree form, and landscape setting. The design of the book enhances both the text and the drawings—a rare feat in an age of overproduced volumes where clever design diminishes both text and illustration. In a world of electronic databases, satellite images, GIS, unlimited apps, is there a role for a printed description of trees of a nation, with images drawn from life models to document the components of a national tree population? While the book has a reflective tone, like all silvas it has an underlying intent: “to rekindle a wood culture” with the exhortation “Let's celebrate the sound of a chainsaw in a forest, rather than hearing it as death or destruction.” With this challenge, even in this electronic age, the traditional form of a silva may be more effective than an app.

Phyllis Andersen is a landscape historian and former director of the Institute for Cultural Landscape Studies of the Arnold Arboretum.

Filing A Missing Rose Claim: Jackson Dawson and the Arnold Rose

Benjamin Whitacre

**I cannot suggest to the earnest rose lover any finer
summer pilgrimage than one to the Arnold Arboretum.**

**—J. Horace McFarland, editor and publisher
of the *American Rose Annual* (1917a)**

Hundreds of new plant cultivars, complete with gorgeous catalogue pictures and euphoric blurbs, are introduced each year. Few will still be around in a hundred years, and unfortunately sometimes the most innovative and influential are the first to fade away. Jackson Thornton Dawson, whose hybrids revolutionized rose culture more than any since the first repeat-blooming China roses, remembered the quick rise and precipitous fall of his roses. Writing in *Country Life in America* in 1911, the Arnold Arboretum's first superintendent detailed his once successful climbing roses before closing with a comment on 'Arnold', his breakthrough hybrid whose subsequent decline and near extinction remains one of the unresolved puzzles of modern roses. "A rich crimson, darker even than 'Général Jacqueminot', very fragrant ... I hoped it would lay the foundation for a race of garden roses which would be perfectly hardy," Dawson wrote of his cross between the velvety red Hybrid Perpetual 'Général Jacqueminot' and the rugged *Rosa rugosa*. "But these hopes were dashed."

For decades, Dawson dreamed that his cold-hardy shrub rose and its offspring would end the plagues that still tarnish rose gardens 130 years later: black spot, powdery mildew, and insect infestation. He imagined his new hybrid line would also make rose gardening more democratic by eliminating the production cost—and cost to the consumer—of budding to rootstock (Dawson 1902; Dawson 1911). In Dawson's only other account, written for Liberty Hyde Bailey's

Cyclopedia of American Horticulture in 1902, he adds that someone stole his other valuable *Rosa rugosa* seedling. But his two brief essays still give little hint of the romance of mistaken names, cut-throat competition, and record keeping failures that took Dawson's hybrid out of consideration for an honor that might have made it a staple of botanical gardens: recognition as the rose that ushered in what British horticulturist Graham Stuart Thomas called "the day of the flowering shrub" (Thomas 1994).

Origin of a Hybrid Species

"It would be very difficult to give a longer recital of merits," wrote Thomas of *Rosa rugosa*, the parent species Dawson selected for his new class, "It flowers from the end of May onwards into autumn, bears hips [hips], and gives autumn color. It has a variety of colors, and an excellent fragrance ... I have seen no disease on it or on its varieties, and pests do not make any impression on it."

In addition to the traits Thomas listed, Dawson selected *Rosa rugosa*, native to eastern Asia, because it withstood New England winters better than any other rose species. But its brutal gauntlet of prickles, stout upright stems, and shapeless flowers made it unpopular when first released into Europe in 1796. *Rosa rugosa* found even fewer admirers in America. It appeared in commerce in 1870 but didn't catch on for 40 years. It did find one influential friend on arrival, though—Dawson's mentor, the historian and horticulturist Francis Parkman, Jr.,

COURTESY OF STEVE NYMAN



ARNOLD ROSE

Botanical illustrator Esther Heins captured the beauty of the Arnold Rose in this portrait from the book *Flowering Trees and Shrubs: The Botanical Paintings of Esther Heins*, written by her daughter Judith Leet, with a foreword by then Arboretum director Peter Ashton. Many of the illustrations in the book were painted from specimens collected at the Arboretum.

who probably obtained it in 1861 in the first cargo of Asian flora sent directly to New England (Parkman 1866; Spongberg 1993).

When Parkman became the first horticulture professor in America in 1871 at Harvard's Bussey Institution, he hired Dawson as propagator. "It was thus that I became interested in

the wild roses of Japan and started to hybridize them," Dawson later wrote of his two years at the Bussey (Archives of the Arnold Arboretum). He left to become the first superintendent and propagator at the fledgling Arnold Arboretum in 1873. The director, Charles Sprague Sargent, paired Dawson's "natural genius" for spotting

the “affinities” between species with an ambitious program of *Rosa* accessions.

The mix of innovation and raw material paid off. By the mid 1880s, Dawson had done the impossible, twice. He wed the diploid *Rosa multiflora* to the tetraploid ‘Général Jacqueminot’ and raised the first American rambler, ‘Dawson’. Another early pairing, between the diploid *Rosa rugosa* and ‘Général Jacqueminot’, would be the first Hybrid Rugosa in America and arguably the type for the class. The achievement is even more noteworthy since both hybrids set seeds—fertile offspring from crosses between diploid and tetraploid plants are a rare exception to the rules of genetics (Rowley 1960).

The Invisible Hand

“He was so modest,” recalled Dawson’s granddaughter Betty Blossom Johnston in a *Horticulture* magazine profile in 1957. “It wasn’t until decades later I was to learn what an important part he himself had played in raising these plants.” Dawson’s rose breeding competitors were not so demure. When *The American Garden* announced the introduction of the purported first Hybrid Rugosa, raised in France, into commerce in February 1888, ambitious plantmen saturated the media. Elbert Carman, a plant breeder whose hybrids of *Rosa rugosa* and *R. × harisonii* had yet to flower, launched the loudest self-promotion campaign (Carman 1889). Others also began announcing their rugosa hybrids, whether these had germinated or not.

While no one in America seems to have seen the French hybrid that started the furor, Scottish-American plantsman William Falconer



NANCY ROSE



Rugosa rose (*Rosa rugosa*) has fragrant, colorful flowers, attractive foliage, and extremely well-armed stems.

had seen a Hybrid Rugosa in bloom. In the same issue of *The American Garden* that established ‘Mme. Georges Bruant’ as the type specimen of *Rosa rugosa* hybrids, Falconer praised the flowers of Dawson’s cross of *Rosa rugosa* and ‘Général Jacqueminot’ as “the deepest and brightest red” (Falconer 1888). Though Dawson himself said nothing in print until 1902, his crimson-flowered shrub rose appeared again in 1892, when it won a first class certificate of merit from the Massachusetts Horticultural Society. The next year Sargent christened the hybrid *Rosa × arnoldiana* ‘Arnold’ before it won a second award from the society, a silver medal—the highest honor bestowed. (The hybrid epithet *× arnoldiana* is no longer accepted so the cultivar is now listed as *Rosa* ‘Arnold’.)

“When the sun shines on the Arnold rose the eyes are quite dazzled,” Dawson wrote in 1911. The nearly perpetual bloomer formed a bush about four feet high with dark green,



Jackson Dawson won a number of awards, including this 1896 Massachusetts Horticultural Society silver medal, recently donated to the Arboretum’s archives by Dawson’s great grandson, Channing Dawson.



Jackson Dawson in a vehicle loaded with branches, perhaps material for propagation. Photographed September 13, 1904, by Oscar Beckly, a photographer for the J. Horace McFarland Company.

crinkled foliage similar to that of its wild parent and large single to semi-double flowers that faded from dark crimson to scarlet (Dawson 1902; Dawson 1911). Some admirers likened its festive green and red tones to yuletide holidays. But when Dawson released 'Arnold' commercially in 1893—a year, he later wrote, that revolutionized American roses—the American market rejected it, as it continued to reject the species parent for its rugged appearance. Even worse, 'Arnold', often referred to in print as "Dawson's Hybrid Rugosa," 'Arnoldiana', or "the Arnold Rose," turned out to be harder to hybridize than Dawson thought. It refused to set mature hips when hand fertilized with pollen from other roses. Dawson moved on after five years of failure.

'Arnold' entered the Arnold Arboretum's accession files in 1898. For almost 20 years afterward, virtually no one mentioned it. When Walter Van Fleet, America's most acclaimed rose breeder, wrote the early history of *Rosa*

rugosa hybridization in 1916, he listed his mentor, Elbert Carman, as the pioneer. Dawson came in as an also-ran who had made crosses "as early as 1892." No rebuttal to Carman or Van Fleet survives. But Dawson saved what may be his most disparaging comments for Carman's *R. rugosa* × *R. harisonii* hybrids, calling them "the biggest lot of mongrels one ever saw, in both foliage and flower" (Dawson 1902).

A Rose by Another Name

Sargent shipped a number of Dawson's rose hybrids to correspondents around the world up to a decade before Dawson released them commercially. Thanks, perhaps, to Sargent's open sharing policy, Falconer's notes on 'Arnold' exist while any Arboretum records from the same time have disappeared.

But not every recipient credited Dawson for his work. "Few people realize just what a pioneer he was," wrote Charles Quest-Ritson in *Climbing Roses of the World* in 2004. "Many of his hybrids were introduced by nurseries without any acknowledgement of his part in their raising."

Unlike other nurserymen who borrowed from Dawson, the English hybridizer George Paul came clean after 22 years. Hayward Darlington, secretary of the Royal National Rose Society, put the confession into print in a cultivar description published in the *Royal National Rose Annual* of 1915:

'America' (Paul & Son, 1895 [introducer and introduction date]). The flowers are large and of a crimson lake color. The shape is that sometimes called the American shape, which differs slightly from the true Japanese. It has large ovate fruit covered with long spines. Mr. G. L. Paul tells me that this rose was sent to his firm in the year 1892 by Prof. Sargent of the Hartford Botanic Gardens, U.S.A.

Darlington corrected “Hartford Botanic Gardens” to “The Arnold Arboretum” in 1917 and Jules Gravereaux, the director of the Roseraie de L’Haÿ, an extensive rose garden south of Paris, recorded the actual introduction date as 1893. While ‘America’ and ‘Arnold’ have never been formally listed as the same rose, available evidence suggests synonymy. That both Paul and Gravereaux—two of the most diligent collectors of Hybrid Rugosas, close correspondents of Sargent, and collectors of Dawson roses—never listed the name ‘Arnold’ in their collections is itself a strong hint that they had it under the name ‘America’.

Other arguments for synonymy provide a window into Dawson and Sargent’s standard practices: Sargent usually sent Old World colleagues

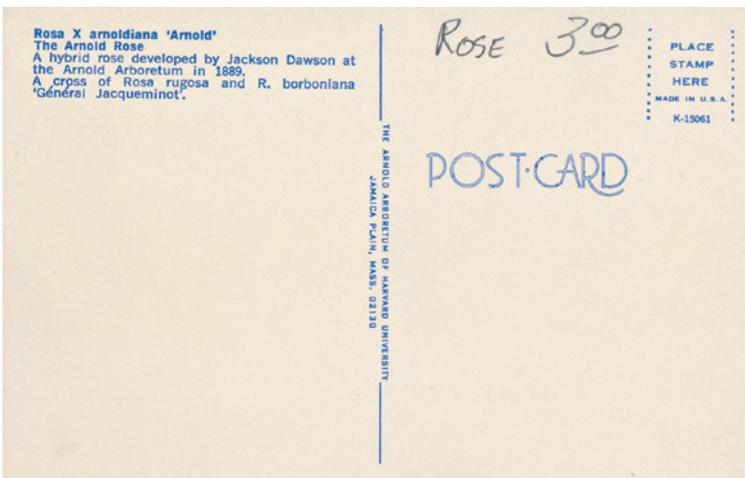
the unnamed hybrids that Dawson would go on to name and release; Dawson only mentioned producing two Hybrid Rugosas of merit and the other, which was stolen, bore mauve, fully double flowers; Dawson only saved his best hybrids, about 1 out of every 10,000 seedlings (Blossom 1957)—the likelihood he saved two nearly identical roses, which would both go on to be ranked in separate countries as the best of their color and habit, is low.

‘America’ left such a mark on the rose culture of Europe that the *Société Nationale d’Horticulture de France* included it among the most beautiful roses of the era in *Plus belles roses au début du XXe siècle* in 1912. Darlington likewise listed it among the best Hybrid Rugosas in England. Unless new documents or verified specimens of ‘Arnold’ and ‘America’ emerge to unlink them, rosarians should cautiously consider them to be the same.

A Last Huzzah

By 1914, Americans had caught up with Europe’s love of *Rosa rugosa*. Three years after writing that ‘Arnold’ had dashed his hopes, Dawson re-released it. Before he died in 1916, Dawson saw ‘Arnold’ win more praise than it had in the previous 30 years. J. Horace McFarland, America’s most influential rosarian, wrote that ‘Arnold’ deserved a place in every landscape (McFarland 1916).

But an artifact of failure remained. ‘Arnold’ had so thoroughly disappeared after 1893 that fans mistook it for a new hybrid, considering it to be Dawson’s last, crowning achievement (McFarland 1917b). Alfred Rehder, the Arnold Arboretum taxonomist whose revision of the genus *Rosa* laid the groundwork for later rosarians, gave authority to the error when he published a detailed Latin description of ‘Arnold’ in the Arboretum’s *Bulletin of Popular Information* (Rehder 1922). Sargent never corrected the false introduction date, just as he never put a word into print about ‘Arnold’ and ‘America’. Richard A. Howard, direc-

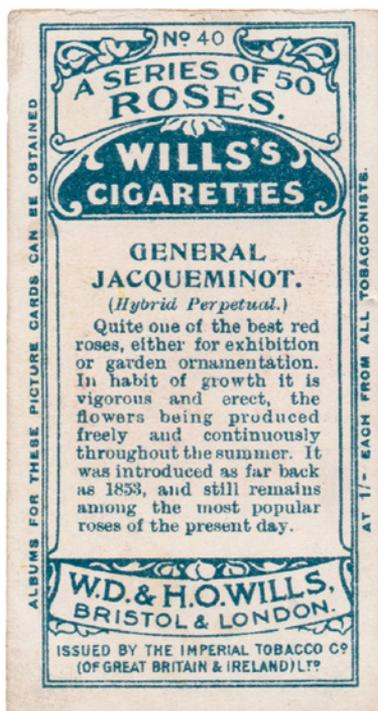


This undated Arboretum postcard shows what must have been an impressive specimen of ‘Arnold’ in flower.

A Red, Red Rose

'Général Jacqueminot', a Hybrid Perpetual rose introduced from France in 1853, has been widely used in hybridizing. Many modern red roses can trace their color to the rich crimson imparted by "General Jack," as Americans called it. In addition to its stunning color, 'Général Jacqueminot' was known for its rich, sensuous scent. Around 1903, aspiring perfumer François Coty used its fragrance as a basis for his new perfume, La Rose Jacqueminot, whose wild popularity launched the Coty company. Seen here, a cigarette card (front and back) from 1912, part of a set of 50 rose cards, and an advertising poster for the perfume by illustrator Leonetto Capiello.

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tor of the Arboretum from 1954 to 1977, later popularized the groundless theory that Dawson had not bred 'Arnold' at all but selected it from chance seedlings.

Rebooting the 'Arnold' Legacy

In 1919, when the Arboretum had earned recognition as one of the world's finest rose gardens, Sargent would still describe 'Arnold' as perhaps the most eye-catching plant in the Arboretum's collection. But Dawson's *Rosa rugosa* × 'Général Jacqueminot' hybrid eventually went out of favor under every name. Without a proper assessment of its historic value or ongoing promotion of its merits, botanic gardens and rose enthusiasts denied 'Arnold' garden space.

In 2012, the Arboretum renovated its rose collection in conjunction with the bed rede-

sign in the Bradley Rosaceous Collection. In the spirit of Dawson, who blended wild species with the most acclaimed contemporary hybrids of his era, specimens of rose species collected around the world such as *Rosa nitidula*, *R. gymnocarpa*, and *R. rugosa* are bedded with award-winning modern cultivars. For over 100 years, 'Arnold' specimens at the Arboretum outlived other cultivars and species, surviving for as long as 60 years in shade and cold through the Arboretum's most trying times. But, in a final twist to the 'Arnold' legacy, the last of its original lineage died before the collection could be reinvigorated. Today, the Arboretum is seeking sources of healthy, correctly identified specimens of 'Arnold', whether under that name or its other epithets, as well as other Dawson roses.



This herbarium specimen of 'Arnold' (accession 857-79) was collected in 1994 when the cultivar still resided in the Arboretum's Bradley Rosaceous Collection.

Comprehensive List of Named Roses Hybridized by Jackson Thornton Dawson

Dawson produced approximately 10,000 roses for each he saved. He named and released even fewer (Blossom 1957). Many of the following cultivars are lost, though they may still exist under alternate identities. The Arboretum is sourcing many of these, and growers or those with knowledge of true pedigreed lineages of the following are encouraged to contact the Curation Department.

‘Apple Blossom’, 1890. A *Rosa multiflora* hybrid with distinctive pink, ruffled petals that fade to white. It may be the rose that Luther Burbank’s wife patented in 1933 under the same name.

***Rosa* × *arnoldiana* Sargent ex Rehder ‘Arnold’, 1893.** Bred sometime between 1871 and the mid 1880s. By 1888 it was known as the best red form of *Rosa rugosa* (Falconer 1888). George Paul apparently gave it the synonym ‘America’ to refer both to the 400th anniversary of Christopher Columbus’s arrival in the new world and the Arnold Arboretum’s mission to create distinctly American roses.

‘Betty Blossom’, 1900. Named for Dawson’s granddaughter. British taxonomist Gordon Rowley recognized ‘Betty Blossom’ as the first cross of *Rosa wichurana* and a Hybrid Tea (Rowley 1957).

‘Cynthia E. Hollis’. A *Rosa multiflora* hybrid with light pink, loosely double flowers.

***Rosa* × *dawsoniana* Gravereaux ex Rehder ‘Dawson’, 1888.** The first American *Rosa multiflora* hybrid and one of the first *R. multiflora* hybrids in the world. *R. × dawsoniana* is sometimes considered the rose that brought ramblers into fashion (Archives 1911). J. Horace McFarland praised “its rose-pink delicacy, [which] has not been excelled” (McFarland 1923), and taxonomist Gordon Rowley recognized it as the first cross between a Hybrid Perpetual and any form of *R. multiflora* (Rowley 1957).

‘Daybreak’, 1909. A single petaled, orange-pink *Rosa multiflora* hybrid named for its resemblance to the ‘Daybreak’ carnation. Used as a groundcover.

‘Farquhar’, 1903. *Rosa wichurana* × ‘Crimson Rambler’. Double pink flowers resemble ‘Melba’ and ‘Marquis’ carnations. In 1901, the R. & J. Farquhar Co. nursery built up an inventory of the esteemed, but not yet commercially released, ‘Farquhar’ to flood the market, but they got scooped by another company. According to a Dawson obituary, ‘Farquhar’ is the uncredited parent of Jackson and Perkins’s very similar ‘Dorothy Perkins’, the most popular rose of the early twentieth century, released in 1901.

‘Ida’, early 1890s. A *Rosa multiflora* hybrid. Probably a ‘Dawson’ seedling.

***‘Jennie Dawson’, before 1916.** Once considered the best white cultivar of *Rosa wichurana* (Lay 1916).



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A blooming specimen of ‘Dawson’ growing at the Europa-Rosarium in Sangerhausen, Germany.

Rosa × jacksonii Willmott 'Lady Duncan', 1897/1900. A *Rosa rugosa* × *R. wichurana* cross that J. Horace McFarland considered the first Hybrid Wichurana. Dawson named 'Lady Duncan' for the daughter of one of his early patrons. Dawson kept other *R. rugosa* × *R. wichurana* seedlings (Horticultural Club 1914), possibly including the rose that became 'Max Graf'.

'Little Tot', before 1900. A *Rosa multiflora* hybrid also listed as 'Little Dot.' Dawson explained that 'Little Tot' bloomed so much he could never get enough wood to propagate.

'Minnie Dawson', 1896. An attempt to create a more fully double *Rosa multiflora* flower by backcrossing 'Dawson' with the species. Named for Dawson's wife.

'Pauline Dawson', 1916. Named for Dawson's daughter-in-law, who helped manage the family's Eastern Nurseries.

***'Royal Cluster', 1899.** 'Dawson' × 'Hermosa'. A rambler with strongly scented double white flowers. Conard and Jones advertised it as the best white climber available in 1901.

'Sargent', 1909/1912. Bred before 1903. Dawson considered 'Sargent' his best rose (Dawson 1911). Often listed as a *Rosa wichurana* × 'Crimson Rambler' seedling crossed with the Hybrid Perpetual 'Baroness Rothschild', 'Sargent' may be more sophisticated, perhaps including *R. setigera* and 'Général Jacqueminot' in its makeup (Horticultural Club 1914).

'Seashell', 1916. Said to have had large, pink, semi-double flowers.

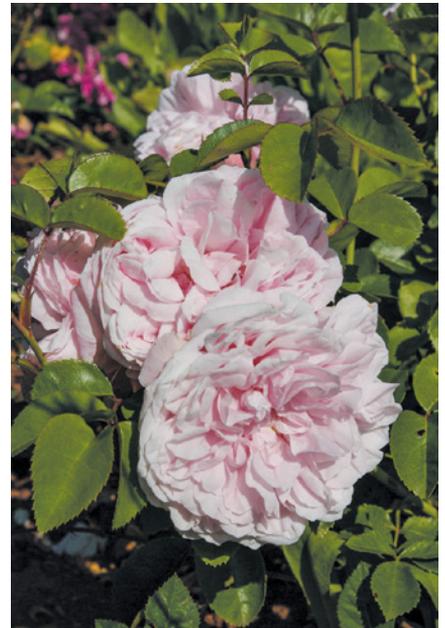
***'White Dawson', 1899.** A sport of 'Dawson' discovered in an Ellwanger and Barry nursery.

'William C. Egan', 1896/1900. A bone-hardy hybrid of *Rosa wichurana* and 'Général Jacqueminot' that resembles the well-known 'Souvenir de la Malmaison'. 'William C. Egan' was probably the first *R. wichurana* hybrid, kicking off the line of climbing roses that defined 20th century rose culture. The rose's namesake was an Illinois plantsman to whom Dawson sent unnamed hybrids to test in the Lake Michigan region.

* 'White Dawson', 'Royal Cluster', and 'Jennie Dawson' are not recorded in Arnold Arboretum records or the comprehensive helpmefind.com rose database. Stephen Hamblin, the last director of the Harvard Botanic Garden, is the most authoritative source for their provenance. Dawson's granddaughter Betty Blossom considered Hamblin's collection of her grandfather's roses the most complete. She narrates Hamblin's intimate association with Dawson and his roses as a youth (Blossom 1957). However, Hamblin made errors concerning the Dawson hybrids—like most others, he thought 'Arnold' was a 1914 rather than an 1893 introduction. The near absence of records for 'White Dawson', 'Royal Cluster', and 'Jennie Dawson' suggests that other commercially released Dawson roses await rediscovery.



A photograph of 'Sargent' from J. Horace McFarland's book *The Rose in America*, 1923, in which he described it as similar to a pink and white apple blossom, but "doubled in size and its pinkness intensified."



Rosa 'William C. Egan'

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A Love Story Coded in *Rosa* Species

Jackson Dawson was the key player in the Arnold Arboretum's rose breeding program, but Ernest Henry Wilson, the Arboretum's renowned plant explorer, also has a fascinating connection to roses. Wilson has not always been portrayed as a passionate husband; rosarians Douglas Brenner and Stephen Scanniello sketched him as a Ulyssean adventurer under the spell of his English patron, the heiress Ellen Willmott, willing to leave his wife Helen and newborn daughter Muriel Primrose to travel to the other end of the world for years at a time (Brenner and Scanniello 2009). Letters from Arboretum director Charles Sprague Sargent to Willmott show that she had a unique influence over Wilson. When Sargent failed to persuade Wilson to explore China for the Arboretum, he wrote an uncharacteristically seductive letter to Willmott, hoping she would intervene. She did (Sargent 1906). Her power over Wilson consolidated the Arboretum's legacy. The three later collaborated on Willmott's monumental tome, *The Genus Rosa*.

During his time in Asia, Wilson collected as many as 2,000 species of plants previously unknown to the west, including *Rosa helenae*, or "Helen's Rose," and *R. murielae*, named for his wife and daughter respectively. He named three finds for Willmott, among them a rose, *R. willmottiae*. Of the three roses, *Rosa helenae* caught on with gardeners. Where other musk roses fainted, Helen's Rose endured; Wilson suggested that a new breed of cold hardy Noisette-style roses be bred from it (Wilson 1916b). Canadian hybridizers took him up successfully (Thomas 1994).

In 1914, shortly after helping Willmott finish *The Genus Rosa*, Wilson returned to Asia, this time to Japan. Helen and Muriel Primrose accompanied him on this and future expeditions. In 1927, after the death of Sargent, Wilson became keeper of the Arnold Arboretum, remaining one of the rose's most vocal proponents. He and his wife died together in an automobile accident on October 15, 1930.

Over the following 30 years, botanists noted a close alliance between *Rosa helenae* and *R. rubus*, another species Wilson collected (Thomas 1994). At Kew, which had received both *R. helenae* and *R. rubus* seeds from the Arboretum in a lot labeled "seed No. 431" (Sargent and Wilson 1913–1917), the two species were often confused (Bean 1981). But the accidental pairing of species in "seed No. 431" inspired Wilson's former Kew colleague Otto Stapf to give *R. rubus* the synonym *R. ernestii*, or "Ernest's Rose," making *R. ernestii* and *R. helenae* a symbol of the marital bliss that their discovery delayed.

ARCHIVES OF THE ARNOLD ARBORETUM



Rosa helenae blooming at the Arnold Arboretum.



Muriel and Helen Wilson, photographed in Tokyo, Japan, in 1914.

ARCHIVES OF THE ARNOLD ARBORETUM

Midsummer Flurries

Nancy Rose

In the steamy greenness of the midsummer landscape, white flowers can add a cooling touch, sort of a visual equivalent to a scoop of vanilla ice cream. Several hydrangeas have just such a refreshing floral display, including oakleaf hydrangea (*Hydrangea quercifolia*) and its cultivars. This species is native to the southeastern United States, growing from North Carolina to northern Florida and west to Tennessee and Louisiana, but it also grows well in other regions. It is recommended for USDA Hardiness Zones 6 to 9 (average annual minimum temperature -10 to 0°F [23.3 to 17.8°C]) and may also survive in Zone 5 (average annual minimum temperature -20 to -10°F [28.9 to 23.3°C]).

Oakleaf hydrangea is a multi-stemmed shrub with a spreading, loosely mounding growth habit. It typically reaches 6 to 10 feet (1.8 to 3 meters) tall and spreads (by root suckers) to an equal or greater width. The stems have a rusty pubescence when young and later produce grayish tan outer bark that exfoliates to reveal rich reddish brown inner bark. The “oakleaf” in the plant’s common name is aptly descriptive, since the large (up to 10 inches [25.4 centimeters] long) leaves with 3 to 7 point-tipped lobes resemble those of red oak (*Quercus rubra*). The leaves are dark green with whitish undersides in summer and develop noteworthy fall color ranging from bronze to burgundy and scarlet.

The inflorescence of oakleaf hydrangea is a cone-shaped panicle, 6 to 12 inches (15.2 to 30.5 centimeters) long and borne at the stem tips. Like other hydrangea species, *Hydrangea quercifolia* has inflorescences that bear a combination of sterile and fertile florets. The small fertile florets are cream colored and fragrant while the much larger 4-sepaled sterile florets are pure white and held above the fertile florets. Oakleaf hydrangeas at the Arboretum typically start blooming in late June or early July. After weeks in the white phase, the sterile florets start to turn pink, darkening to purplish rose before eventually turning tan in the fall.

In the wild, oakleaf hydrangea often grows in the shade of overstory trees. While it is quite shade tolerant, it will also grow well in

full or part-day sun. Moist, well drained soil with ample organic matter is ideal, but oakleaf hydrangea is fairly adaptable to soil type and will tolerate some drought once established. A generous layer of organic mulch around the plant helps hold soil moisture.

The Arboretum collection holds four accessions of the species plus several cultivar accessions. Of the species accessions, three were wild collected from sites in North Carolina (accession 104-2007), Florida (1206-89), and Georgia (1396-85), the latter two by Arboretum staff during plant collecting expeditions to the Southeast.

In recent years panicle hydrangea (*H. paniculata*) has been the darling of the nursery industry, with a steady stream of new introductions hitting the market. Though oakleaf hydrangea lags behind in sheer numbers of cultivars, it can claim several well established cultivars as well as a number of newer introductions. ‘Snow Queen’ is perhaps the most widely grown, noted for a somewhat more compact form (though still at least 6 feet tall), abundant production of large, upright flower panicles, and better cold hardiness than the species. The Arboretum has three accessions (totaling nine individual plants) of ‘Snow Queen’, including five specimens (318-94-A through E) prominently displayed near the northeast corner of the Hunnewell Visitor Center (see photo on facing page). Another winter-themed cultivar is ‘Snowflake’, which bears long inflorescences with unique double florets. For sites with limited space, fortunately there are several smaller cultivars including ‘Pee Wee’ (3 to 4 feet [0.9 to 1.2 meters] tall), two specimens of which (accession 193-2005-A and C) grow in the Leventritt Shrub and Vine Garden. Two recent introductions from the United States National Arboretum, ‘Ruby Slippers’ and ‘Munchkin’, are in the same size range and look very promising. A single plant of ‘Ruby Slippers’ accessioned and planted last year didn’t make it through the brutal winter but we hope to try it again.

Nancy Rose is the editor of *Arnoldia*.



