



arnoldia

The Magazine of the Arnold Arboretum

VOLUME 69 • NUMBER 4



1

About
 $\frac{1}{2}$ natural size.

- 1. *Prunus pendula*.
- 2. *Prunus pascu-cerasus*
"Sekisan" or "Seki-no-Yama."
- 3. *Prunus Mume*.

About $\frac{1}{2}$ natural size.

3

2

Natural size.

arnoldia

The Magazine of the Arnold Arboretum

VOLUME 69 • NUMBER 4 • 2012

Arnoldia (ISSN 0004-2633; USPS 866-100) is published quarterly by the Arnold Arboretum of Harvard University. Periodicals postage paid at Boston, Massachusetts.

Subscriptions are \$20.00 per calendar year domestic, \$25.00 foreign, payable in advance. Remittances may be made in U.S. dollars, by check drawn on a U.S. bank; by international money order; or by Visa, Mastercard, or American Express. Send orders, remittances, requests to purchase back issues, change-of-address notices, and all other subscription-related communications to Circulation Manager, *Arnoldia*, Arnold Arboretum, 125 Arborway, Boston, MA 02130-3500. Telephone 617.524.1718; fax 617.524.1418; e-mail arnoldia@arnarb.harvard.edu

Arnold Arboretum members receive a subscription to *Arnoldia* as a membership benefit. To become a member or receive more information, please call Wendy Krauss at 617.384.5766 or email wendy_krauss@harvard.edu

Postmaster: Send address changes to

Arnoldia Circulation Manager
The Arnold Arboretum
125 Arborway
Boston, MA 02130-3500

Nancy Rose, *Editor*
Andy Winther, *Designer*

Editorial Committee

Phyllis Andersen
Peter Del Tredici
Michael S. Dosmann
William (Ned) Friedman
Kanchi N. Gandhi

Copyright © 2012. The President and
Fellows of Harvard College



The ARNOLD
ARBORETUM
of HARVARD UNIVERSITY

CONTENTS

- 2 **Japanese Flowering Cherries
—A 100-Year-Long Love Affair**
Anthony S. Aiello
- 15 **Charlie Deam and the Deam Oak
(*Quercus x deamii*)**
George Hibben
- 22 **Book Excerpt: *Writing the Garden:
A Literary Conversation Across Two
Centuries***
Elizabeth Barlow Rogers
- 30 **2011 Weather Summary**
Bob Famiglietti
- 36 **Wilson's Pearlbush (*Exochorda giraldii*
var. *wilsonii*): A Gem to the Core**
Stephen Schneider

Front cover: Japanese flowering cherries have been popular with American gardeners for a century. Photo of *Prunus sargentii* 'Dr. S. Edwin Muller' by Anthony S. Aiello.

Inside front cover: A page from the Yokohama Nursery Company's 1901 catalog shows some of the flowering cherries that were offered for sale. Archives of the Arnold Arboretum.

Inside back cover: Arboretum Manager of Horticulture Stephen Schneider extols the inner and outer beauty of Wilson's pearlbush (*Exochorda giraldii* var. *wilsonii*) in this issue's plant profile. Photos by (clockwise from upper left) Nancy Rose, Robert Mayer, and Michael Dosmann.

Back cover: Starting on page 30, read all about the weather events recorded at the Arboretum in 2011. Photo of damage sustained in Tropical Storm Irene by the centenarian silver maple (*Acer saccharinum*, accession 12560-C) along Meadow Road by Nancy Rose.

Japanese Flowering Cherries —A 100-Year-Long Love Affair

Anthony S. Aiello

This year marks the 100th anniversary of the 1912 planting of the famous flowering cherries surrounding the Tidal Basin in Washington, D.C. The story of how they came to be planted is worth exploring, given the centennial anniversary, the lasting impact of the planting efforts, and the continued public fascination with flowering cherries. Although the Tidal Basin plantings seem like a singular event, the interest in flowering cherries was widespread in the early 1900s, and these plants came into the United States through a number of different sources. Around this time both the USDA's Office of Foreign Seed and Plant Intro-

duction (under David Fairchild) and the Arnold Arboretum were instrumental in bringing many cultivated varieties into the United States as part of a broad interest in flowering cherries. Based largely on the efforts of Fairchild, Charles S. Sargent, and E. H. Wilson, there was a surge in the number of varieties available in the first quarter of the twentieth century.

The flowering cherries, or *sakura*, have been an integral part of Japanese culture for centuries. "Japanese flowering cherries" is a general term for a taxonomically complex group of plants that includes several well-known taxa such as *Prunus subhirtella* (Higan cherry),

PETER DEL TREDICI



The famous flowering cherry trees around the Tidal Basin in Washington, D.C.

Prunus × yedoensis (Yoshino cherry), *Prunus serrulata* (also known as the Sato-zakura group) with its numerous cultivars, plus a number of other species. Despite their historic popularity in Japan, only a few types of flowering cherries had entered the United States during the latter part of the nineteenth century. The most commonly available flowering cherry at this time was probably the weeping Higan cherry (*Prunus subhirtella* 'Pendula'), listed in nursery catalogues starting in the mid-1800s (Russell 1934). The earliest record of the weeping Higan cherry at the Arnold Arboretum dates from January 16, 1880, when a plant was received from Mr. A. M. McLaren of Forest Hills, Massachusetts. In 1916, Wilson wrote that weeping Higan cherry "is now a fairly familiar tree in the parks and gardens of Europe and North America" (Wilson 1916).

JAPANESE CHERRIES COME TO AMERICA

In the late 1800s, the Arnold Arboretum was responsible for some of the first introductions of flowering cherries into North America. *Prunus sargentii* (previously described as *Prunus serrulata* var. *sachalinensis*) was first introduced to the Arboretum in 1890 by Dr. William S. Bigelow, who sent seeds from Japan, and again in 1892 by Charles S. Sargent on his Japanese expedition (Wilson 1916). In 1894, seeds of Higan cherry (*Prunus subhirtella*) were received from the Imperial Botanic Garden in Tokyo (Wilson 1916). In 1934, describing trees grown from this collection, Paul Russell of the USDA's Division of Plant Exploration and Introduction wrote that



Prunus × yedoensis 'Shidare Yoshino' in full bloom at the Morris Arboretum.



Prunus serrulata 'Kwanzan' bears an abundance of double pink flowers.

"two excellent specimens which stand near the Forest Hills gate of the Arnold Arboretum are nearly 40 years old; the tips of their wide-spreading branches nearly touch the ground. These apparently are the oldest trees in cultivation outside of Japan and it was from the Arnold Arboretum that this variety found its way into England" (Russell 1934).



This mid-1800s woodcut print, *Koganeibashi no sekishō* (translation: Evening glow at Koganei Bridge), is by Hiroshige Andō and shows flowering cherry trees along a canal bank with a view of Mount Fuji in the background.

Despite these first introductions, the diversity of flowering cherries available in the early 1900s was limited. Fairchild described the situation at this time, writing, "I do not mean to give the impression that there were no flowering cherry trees in this country before the Office of Plant Introduction began to bring them in. There were individual trees brought in by naval officers and others who had learned to love them in the East, and several nursery firms handled them, but there were no mass plantings and only a few varieties were known" (Fairchild, undated manuscript).

Leading up to the 1912 planting in Washington, David Fairchild and Eliza Scidmore were perhaps the greatest proponents of planting flowering cherries. Scidmore was a remarkable woman who spent a significant amount of time in Japan, China, Java, and the Philippines as a journalist at the turn of the nineteenth century (Jefferson and Fusonie 1977). She became enamored with Japanese culture, flowering cherries in particular, and had long promoted

the idea of planting these throughout Washington. Likewise, Fairchild became enthralled with flowering cherries on his 1902 visit to Japan. As a result of this trip, Fairchild, with help from philanthropist Barbour Lathrop, first imported 30 varieties of flowering cherries into the USDA system in 1903. The following year a collection of 50 varieties was imported into the Plant Introduction Station in Chico, California, although Fairchild wrote that the shipment into Chico did not grow particularly well and many of them had died (Fairchild, undated manuscript).

In 1906, Fairchild and his wife, Marian Bell Fairchild, imported 25 varieties directly from the Yokohama Nursery Company of Japan for their property, "In the Woods," located in Chevy Chase, Maryland. One of his goals was to test these varieties for cold hardiness, which to this point was virtually unknown. This experiment was so successful that in 1908 Fairchild helped to organize an Arbor Day planting with schoolboys from every school in Washington,

MATTHEW JONES



Yoshino cherry blossoms frame the Jefferson Memorial in Washington, D.C.

ARCHIVES OF THE ARNOLD ARBORETUM



This striking image of a man seated beneath a large *Prunus subhirtella* 'Pendula' in a village near Tokyo was made on April 1, 1914, by E. H. Wilson during his plant collecting trip to Japan.

with each of them receiving a flowering cherry to plant in schoolyards across the city (Jefferson and Fusonie 1977).

In the often told story (Jefferson and Fusonie 1977; McClellan 2005), the first donation of flowering cherries sent to Washington from the City of Tokyo was found to be heavily infested

with insects and diseases. All 2,000 trees were burned and, as can be imagined, this created a great deal of diplomatic consternation. Fortunately this was all overcome and a second shipment of 6,000 insect- and disease-free trees reached the United States in 1912. One half of these were sent to New York City, where some of the original Yoshino cherries grow near the reservoir in Central Park. The better known half of this shipment were the 3,020 trees that were sent to Washington and were planted around the Tidal Basin, on the White House grounds, and in other areas in the city, where they quickly made the capital famous for its cherry blossom displays. These original trees were made up of 11 varieties of *Prunus serrulata* (1,220 plants) and 1,800 plants of Yoshino cherry (*Prunus × yedoensis*) (Jefferson 1995). Today, of the 3,750 total trees counted by the National Park Service, Yoshino and Kwanzan (*Prunus serrulata* 'Kwanzan') cherries predominate (<http://www.nps.gov/cherry/index.htm>).

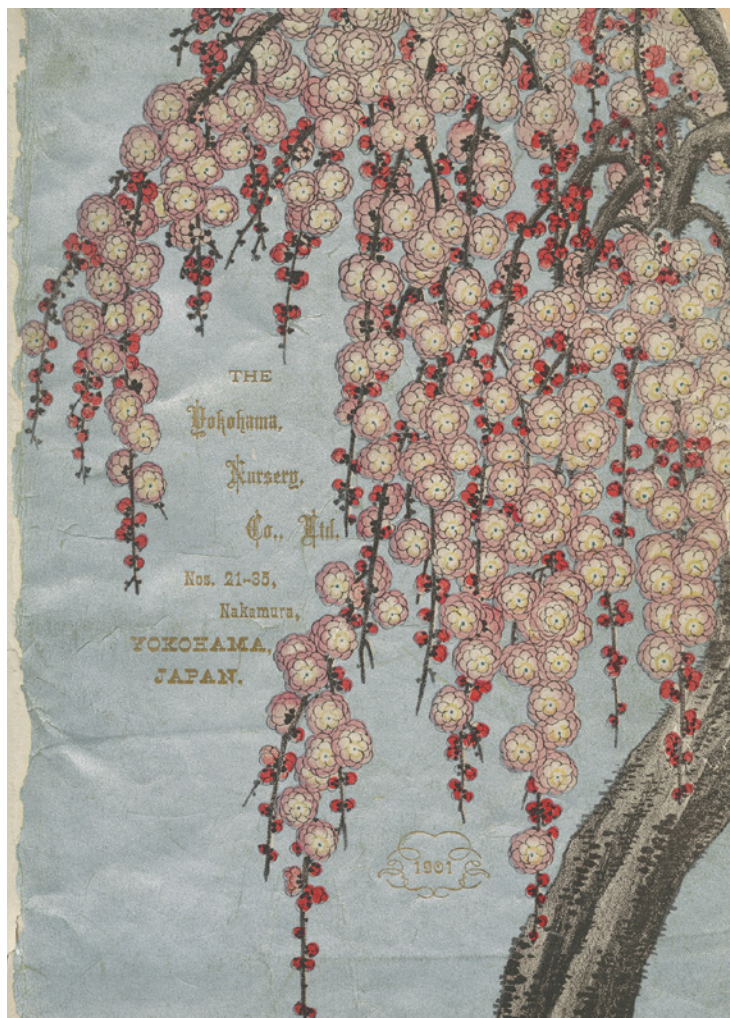
Soon after these plantings, E. H. Wilson conducted his 1914 plant collecting expedition to Japan. This expedition focused on cultivated plants and, because it was to be a less rigorous trip, Wilson was accompanied by his wife and daughter (Howard 1980). This

trip is often overshadowed by Wilson's more famous expeditions but it is remarkable for his investigation and importation of Japanese flowering cherries. One of the main purposes of this expedition was to assemble a collection of authentic, named Japanese flowering cherries, backed up by herbarium specimens

and published taxonomic descriptions. One of the lasting results of the expedition was the publication of Wilson's seminal work on the subject, *Cherries of Japan*. Wilson's nomenclature can be confounding at times, but the book marked the first publication in English of a thorough review of these plants.

A FLOOD OF FLOWERS

In early 1915, a large shipment of over 60 varieties arrived at the Arnold Arboretum directly from the Yokohama Nursery Company. Additionally, scion wood of 63 varieties was sent for propagation directly to the USDA in January 1915, under a cooperative agreement between the USDA and the Arnold Arboretum. Unfortunately many of these were not successfully propagated, so in February 1916 a duplicate set of 54 varieties was "presented by the municipality of Tokyo to the American Government. These scions were cut from authentic trees growing in the famous Arakawa flowering-cherry collection maintained by the Tokyo municipality, which collection ... contains some of the loveliest forms of these remarkable flowering trees" (Fairchild 1916). Another famous plant explorer, Frank N. Meyer, along with Mr. H. Suzuki of the Yokohama Nursery Company, was instrumental in arranging this second shipment. Fairchild wrote that "so much and such genuine interest has been aroused in the Japanese flowering cherry trees, through the gift to the City of Washington by the Mayor of Tokyo of a collection of them, and through the satisfactory growth which specimen trees have made in Maryland, Massachusetts, and California, that a demand for them has grown up which nurserymen find it difficult to meet. It is of interest, therefore, to point out that 54 varieties from the municipal collection of Tokyo near Arakawa, which represent the loveliest of the hundreds of varieties known to the Japanese, have been secured through the Mayor's courtesy, and these will be propagated and distributed



This 1901 Yokohama Nursery Company catalogue features an elegant image of a weeping flowering cherry on a silver background.

under the same varietal names as they bear in the Arakawan collection" (Fairchild 1917).

It may seem heretical to us today, given current concerns over invasive plants and pests, but at the time it was possible to purchase a wide range of plants directly from overseas. Yokohama Nursery Company catalogues from this era list a large assortment of single, double, and semi-double flowering cherry varieties. It is possible to gain insight into this trade from institutional and private records. For example, our records at the Morris Arboretum indicate that co-founder John Morris purchased weeping Higan cherries from the Yokohama Nursery Company in 1910 and Yoshino and Mt. Fuji (*Prunus*

serrulata 'Shirotae') cherries from the same source in 1912.

Flowering cherries continued to be very popular between the World Wars. One of the leading proponents and sources of flowering cherries was Anton Emile Wohlert, the proprietor of the Garden Nurseries in suburban Philadelphia (Wister 1955–56). Information about Wohlert is scarce and comes indirectly through his nursery catalogues and the plant records of Philadelphia arboreta. Wohlert promoted all forms of *Prunus*, including his own introductions named after family members. As far as I can tell, all of these cultivars are extinct from cultivation so we will never know if they were as exemplary as Wohlert claimed.

During the pre-World War II period the USDA continued their great interest in flowering cherries, with the mantle passed on to Paul Russell, whose 1934 publication *The Oriental Flowering Cherries* remains one of the most useful works on this group of plants. In the late 1920s and 1930s Russell continued the tradition of importing cherries into the germplasm system, most significantly plants he propagated from the Fairchild estate in Chevy Chase. Russell had the advantage of examining thirty years of growth and establishment of *Prunus*, and his work provides an invaluable insight into the state of development in the early 1930s. In this booklet Russell mentions the most important cherry collections, including those at the Plant Introduction Gardens in Glenn Dale, Maryland, and Chico, California, along with those at the Arnold Arboretum and the city parks of Rochester, New York.

No article on flowering cherries is complete without mention of Captain Collingwood "Cherry" Ingram, a British horticulturist who was one of the most well-known plantsmen of his time. Among many diverse interests, Ingram dedicated himself

to importing, growing, and hybridizing flowering cherries (Buchan 2011). His 1948 book, *Ornamental Cherries*, was responsible for spreading the gospel of growing cherries both in the United Kingdom as well as on the Continent (Ingram 1948). If you happen to visit the Philadelphia Flower Show or tour the city in mid-March, you will unwittingly owe a great debt to Captain Ingram because one of the most dominant trees at the show and on the streets at that time of year is *Prunus* 'Okame', an Ingram



IVO M. VERMEULEN, NEW YORK BOTANICAL GARDEN

A specimen of *Prunus* 'Okame' in bloom at the New York Botanical Garden.

Cherries in Print

AN INDICATION of the popularity of flowering cherries can be gained by reviewing the Arnold Arboretum's *Bulletin of Popular Information* and its successor, *Arnoldia* (Del Tredici 2011). Flowering cherries were mentioned as early as 1911, and their virtues were extolled regularly from the 19-teens through the 1930s (for examples, see *Bulletin of Popular Information: New Series*, Vol. III (3) May 14, 1917: pp. 9–12; Series Three, Vol. II (4) May 3, 1928: pp. 13–16; and Series Four, Vol. VI (6) May 20, 1938: 27–30). Interest in Japanese flowering cherries continued after World War II but slowly waned as the century progressed. Donald Wyman's article, *The Better Flowering Cherries*, is the last holistic view of the group (Wyman 1950), after which most of what is written is restricted to only a few species and their varieties (Arnold Arboretum 1970; Arnold Arboretum 2000).



E. H. Wilson (left) and C. S. Sargent (right) pose in front of a flowering *Prunus subhirtella* at the Arboretum in this 1915 lantern slide image.

E. H. Wilson in the *Bulletin of Popular Information*, May 3, 1928:

The Rosebud Cherry (*Prunus subhirtella pendula* [*P. s.* 'Pendula']) is another sport and this, on account of its pleasing habit of growth, was one of the first trees brought to this country from Japan. Another Cherry belonging to this group is *Prunus subhirtella autumnalis* [*P. s.* 'Autumnalis'], a small tree with many twiggy branches and more or less vase-shaped when young. It is a precocious plant with semi-double pink blossoms, which sometimes appear in the autumn but in other years sparsely in autumn and abundantly the next spring as is the case this year. Owing to this peculiarity, it is known when it flowers in the autumn as the Jugatsu-zakura or October-flowering Cherry and in the spring as the Yaye-higan or Double-flowered Spring Cherry.

hybrid cherry with early-blooming light pink flowers. It was imported into the United States through the Morris Arboretum by Henry F. Skinner. This plant grew in relative obscurity here until the early 1980s, when propagation and distribution made it a popular nursery choice (Meyer and Lewandowski 1985).

REJUVENATING FLOWERING CHERRIES AT THE MORRIS ARBORETUM

Like many arboretum collections, the *Prunus* collection at the Morris Arboretum reflects changes in horticultural trends. Our cherry collection is comprised of venerable old specimens, young trees growing vigorously, and

newly added plants. In addition to trees dating to the Morris Estate era, there were continual waves of cherry varieties accessioned from the 1940s through the 1980s. In the 1940s we received a large consignment of trees from the Scott Arboretum, including a few that remain today. These were followed by a group of plants from Kingsville Nursery in the late 1950s, from Princeton Nurseries in the mid-1960s, and more cultivars from the U.S. National Arboretum in 1983.

One often reads that cherries are short-lived, surviving for not more than 50 or 60 years, so it may be surprising to learn that we have cherry trees that were planted by John and Lydia Morris prior to the establishment of the Morris Arboretum in 1932. Our collection has individuals up to 100 years old because we use specific management practices for veteran trees. We work with the natural life cycles of these trees, managing them for longevity and safety and rethinking our approach to arboricultural practices.

By implementing the practices of veteran tree care, we have been able to prolong the lives of our old flowering cherries almost indefinitely (Fay 2002). I could say that we began this process through careful literature research and a prescient understanding of veteran tree biology, but the reality is more serendipitous than that. In the early 1980s, then Morris Arboretum curator Paul Meyer (now our director) began to rejuvenate our *Prunus* collection by removing older trees and replanting with newly propagated plants that we had received from the National Arboretum. A 1940s accession of *Prunus* × *yedoensis* 'Daybreak', thought to be nearing the end of its life, was pruned hard to make way for some of these youngsters. This Yoshino cherry cultivar responded remarkably well, with vigorous new growth where it had been pruned. This practice of hard pruning was then

tried on more of our mature cherry trees, with very similar results.

What began as trial-and-error attempts has evolved into a regular retrenchment or restoration pruning program, based on the ideas established in Europe for veteran tree management (Fay 2002). We begin the process of targeted pruning by reducing the end-weight of declining and decaying older branches. Major portions of these branches are removed, lessening the end-load on these branches and reducing the risk of failure along with hazards to the public and



ANTHONY S. AIELLO

New shoots grow from the trunk of this venerable Yoshino cherry at the Morris Arboretum, where a veteran tree management program keeps old cherries alive and blooming.



This 1912 Yoshino cherry accession at the Morris Arboretum has been pruned to reduce the old crown and encourage interior growth.

staff. Simultaneously, we selectively encourage young shoots from along the interior portions of the trunk, working with the natural growth patterns of these veteran trees. Through this process of phased reduction, we continue to reduce the major structural branches, leaving the young interior branches to develop and mature into the new architecture of the tree (Fay 2002). This is an ongoing process, and we rotate through the cherry collection on a five to seven year cycle. In essence we are coppicing the trees, maintaining them in a state of juvenility and not allowing them to reach the ultimate stage of maturity and decline (Del Tredici 1999). It is illustrative to look at Japanese books on flowering cherries to learn that propping and pruning of ancient trees is a long-established cultural practice resulting in the long-lived cultural icons so revered in that country (Sano 1990).

A remarkable example of this process is one of the Yoshino cherries purchased by John Morris from the Yokohama Nursery Company in 1912. This tree grows in relative obscurity in the English Park section of the Arboretum, and it was not until recently that we pieced together historical documents and realized its origin as one of the 1912 plants. This tree has also been sustained through our veteran tree management techniques, with crown reduction and encouraging of interior growth. In addition to its massive old trunk, there are numerous basal and trunk sprouts—rather than thinking of these as detriments, we work with the tree biology, thinning and selecting this new growth with the intention of making those shoots the future crown of the tree.

On some specimens we will encourage these basal sprouts into new trees, but only if we know that the plant is on its own roots. A prime

example of this is an old specimen of *Prunus subhirtella* 'Pendula' that was planted prior to 1932. This tree has a highly decayed trunk with a band of healthy bark and one large remaining branch. For the past few years we have removed all but about five of these sprouts and are encouraging the basal rejuvenation of these to form a new tree (Fay 2002). Eventually we will remove all but one or two of these and then allow the original trunk to decay completely.

Cherries have an especially interesting biology because of their tendency for endocaulous rooting, a process of forming roots from portions of stem tissue; these roots result in a successional trunk as they grow down through the decaying parent trunk (Fay 2002; Liu and Wang 1992). As the inner trunks of older plants decay, often there is a shell of living tissue surrounding a core of rich decomposed organic matter from the old wood. The tree often initiates roots into this rich medium, and as root tissue grows down through the core of the tree, it provides added structural support to the tree's upper portions (Jenik 1994). This process is especially apparent in old flowering cherries, and an extreme example occurred with another of our old *Prunus subhirtella* 'Pendula' plants, in this case a plant that is shown on our 1909 Atlas of Compton (the Morris Estate). In the mid 1990s this tree was in significant decline, with a severely decayed old trunk supporting a few feeble branches. For a number of years we observed a major root growing within a cavity in the trunk and leafy shoots arising from the top of this root with increasing vigor. With each passing year the root became more trunklike as the old trunk further deteriorated until it was a standing hollow shell. In the fall of 1997, the old rotting trunk simply fell to the ground under its own weight. We were delighted to see that the "new tree" that had formed inside of this shell was strong enough



ANTHONY S. AIELLO

Management of the vigorous new sprouts around this old *Prunus subhirtella* 'Pendula' allows the specimen to be rejuvenated.

to stand on its own, but with about four feet of above-ground root tissue forming the new trunk. Since then this tree has continued to prosper, a Lazarus of a plant having returned from the brink. It now grows vigorously across from our visitor center, providing a fabulous spring display.

FUTURE EFFORTS WITH FLOWERING CHERRIES

A few years ago I began to expand the Morris Arboretum's cherry collection by propagating early- and late-flowering varieties to extend the period of flowering interest. Before this project began I was intimidated by *Prunus* propagation, believing that, like many other rosaceous plants, they had to be grafted or budded to be reproduced. Fortunately our propagator, Shel-



PHOTOS BY PAUL W. MEYER

(clockwise from top left) In the mid 1990s it appeared little was left of this *Prunus subhirtella* 'Pendula', but a root growing within the decaying trunk developed into a new trunk, fully revealed when the old trunk fell away. By 2005 the rejuvenated plant was a fine flowering specimen.

ley Dillard, disabused me of this notion and we regularly root cuttings of a number of *Prunus* species and varieties (see page 14).

This project has evolved, and in recent years I have begun to survey public gardens in the northeastern United States to determine the extent of their *Prunus* holdings and to dis-

cover where there are unique cultivars. The goal is to propagate these and then redistribute them to a wider audience of public gardens and private collectors. Two notable examples are *Prunus serrulata* 'Gyoiko' and 'Jo-nioi', both represented by single trees, the former at the Morris Arboretum and the latter at the Arnold

Arboretum. Last year we rooted cuttings of these and look forward to growing and distributing them. 'Gyoiko' is an especially interesting plant because it has chateau flowers with thin pink and white streaks in the center of the petals. The name translates as "colored court-robles" and refers to the green, white, and purple robes of women in the ancient Japanese imperial court (Kuitert 1999). In the original 1912 Washington planting, all 20 specimens of 'Gyoiko' were planted at the White House. 'Jo-nioi' ("supreme scent" or "first-class fragrance") has single white flowers that bloom in profusion and is known as one of the most fragrant of the flowering cherries (Kuitert 1999). Although once more commonly grown, it has vanished from our landscapes and would make a fine addition to any garden.

The flowering cherries at the Morris Arboretum are a prime example of how a living collection can fulfill multiple aspects of our mission, namely, collections preservation, horticultural display, research, and education. The cherry collection is a model for preserving our horticultural heritage while providing a living laboratory to implement the practices of veteran tree care.

Flowering cherries have long been a captivating presence in Japan and—since their widespread introduction 100 years ago—throughout the United States as well. Their continued popularity is seen in the numerous blossom

festivals across North America. The ephemerality of their blossoms provides the highlight of spring and, as the famous Japanese poet Kobayashi Issa wrote, "There is no stranger under the cherry tree ...". Plant one in your garden and see what happens.



Three *Prunus serrulata* cultivars, including the unusual green-flowered 'Gyoiko', are featured on this page from a 1916–1917 Yokohama Nursery Company catalogue. The name listed here, *P. pseudocerasus*, is no longer accepted, but its appearance in the catalogue hints at the confusing nomenclature within Japanese flowering cherries.

Propagating *Prunus*

OUR TECHNIQUE involves taking 4- to 6-inch-long terminal cuttings in mid-June when the trees have set terminal buds but the new growth is still somewhat flexible. We wound the cuttings, then dip in 3,000 ppm KIBA in liquid. The cuttings are stuck in a 60:40 mixture of perlite:peat to which RootShield granules (a biological fungicide containing *Trichoderma harzianum*) are added. The cutting trays are placed in a fog and mist greenhouse with bottom heat of 70°F (21°C) and 16-hour extended photoperiod. Although it varies from year to year and by cultivar, with this method we have very good rooting percentages with a number of cultivars. A critical step in successful propagation is leaving the cuttings in their potting trays for the subsequent winter after they have been rooted, repotting them only when they start to show new growth the following spring.

CITATIONS

- Arnold Arboretum. 1970. A Cumulative Index to *Arnoldia*, Volumes 1–29 (1941–1969). *Arnoldia* 30(7): 63–64.
- Arnold Arboretum. 2000. A Cumulative Index to *Arnoldia*, Volumes 1970–2000. *Arnoldia* 60(5): 18–19.
- Buchan, U. 2011. Collingwood Ingram (1880–1981). *The Plantsman* (New Series) 10(3): 194–199.
- Del Tredici, P. 1999. Aging and Rejuvenation in Trees. *Arnoldia* 59(4): 10–16.
- Del Tredici, P. 2011. One Hundred Years of Popular Information. *Arnoldia* 69(2): 2–10.
- Fairchild, D. 1916. United States Department of Agriculture, Bureau of Plant Industry Inventory of Seeds and Plants Imported 46 (Nos. 41685 to 42383): 25–26.
- Fairchild, D. 1917. United States Department of Agriculture, Office of Foreign Seed and Plant Introduction: Plant Immigrants 134 (June): 1186.
- Fairchild D. Undated manuscript. Courtesy of Nancy Korber, Librarian/Archivist, Center for Tropical Plant Conservation, Fairchild Tropical Botanic Garden, Miami, FL.
- Fay N. 2002. Environmental Arboriculture, Tree Ecology and Veteran Tree Management. *The Arboricultural Journal* 26(3): 213–238.
- Howard, R. 1980. E. H. Wilson as a Botanist (Part II). *Arnoldia* 40(4): 154–193.
- Ingram, C. 1948. *Ornamental Cherries*. London, Country Life.
- Jenik, J. 1994. Clonal Growth in Woody Plants: A Review. *Folia Geobotanica et Phytotaxonomia*, Prague 29: 291–306.
- Jefferson, R. 1995. The History of the Cherry Blossom Trees in Potomac Park. *Introducing Modern Japan* IV: 33–40.
- Jefferson, R. and A. Fusonie. 1977. *The Japanese Flowering Cherry Trees of Washington, D.C.: a Living Symbol of Friendship*. Washington: Agricultural Research Service, U.S. Dept. of Agriculture, U.S. National Arboretum Contribution No. 4.
- Kuitert, W. 1999. *Japanese Flowering Cherries*. Portland, OR: Timber Press.
- Liu, Q and Z. Wang. 1992. Root System Inside Heart-rot Stem of *Betula ermanii*. *Research of Forest Ecosystems* 6:68–71 (in Chinese).
- McClellan, A. 2005. *The Cherry Blossom Festival: Sakura Celebration*. Boston: Bunker Hill.
- Meyer, P and R. Lewandowski. 1985. The 'Okame' Cherry. *Arnoldia* 45(1): 23–24.
- Russell, P. 1934. *The oriental flowering cherries*. Washington, [Govt. Print. Off.], U. S. Dept. of Agriculture. Circular no. 313.
- Sano Tōemon. 1990. *Sakura Taikan*. Kyōto-shi: Satō Tōemon.
- Wilson, E. H. 1916. *The Cherries of Japan*. Cambridge: Harvard University Press. Publications of the Arnold Arboretum No. 7.
- Wister, J. 1955–56. *Swarthmore Plant Notes; a Record of all the Plants Grown by the Arthur Hoyt Scott Horticultural Foundation, Swarthmore College*. 3rd Edition. Swarthmore.
- Wyman, D. 1950. The Better Oriental Cherries. *Arnoldia* 10(3): 17–24.

Anthony S. Aiello is the Gayle E. Maloney Director of Horticulture and Curator at the Morris Arboretum of the University of Pennsylvania in Philadelphia, Pennsylvania.

Charlie Deam and the Deam Oak (*Quercus x deamii*)

George Hibben

A handy reference in the Arnold Arboretum's curatorial office is a paperback reprint of *Trees of Indiana*, originally published by the Indiana State Board of Forestry in 1912. It was written by Charles Clemon Deam (1865–1953), a drugstore owner with a lifetime passion for documenting the flora of Indiana. With the help of a young zoology student and *Gray's Manual of Botany*, he taught himself the basic methodology employed by botanists and taxonomists. Deam mounted his first specimen on a herbarium sheet in 1896. Sixteen years and over ten thousand specimens later, his first edition of *Trees of Indiana* was printed. It was a reference book that: "scientists could use, rich in accurate technical detail, filled with Latin names and botanical terminology. At the same time, it was a useful and understandable manual for the amateur pupil, teacher, or hobbyist, with picture book drawings that mixed hard science with the warm fuzzy feel of the drugstore almanac" (Kriebel 1987). All ten thousand free copies were distributed within three years, and a one-thousand-copy reprint in 1919 was snapped up within a few days. Revised editions of *Trees of Indiana* were printed in 1921, 1931 and 1953. In subsequent years, photo reprints and digital print-on-demand copies have been produced. Deam also wrote and published *Shrubs of Indiana* (1924), *Grasses of Indiana* (1929) and *Flora of Indiana* (1940). One hundred years after its publication, *Trees of Indiana* remains his best known work.

INDIANA'S PLANT COLLECTOR

Deam is remembered as: "a rugged individualist who appeared brusque and gruff to those not well acquainted with him, but to those



Charlie Deam in May 1938.

who were closest to him and knew his intellectual integrity and scientific sincerity this outward brusqueness masked a humble, modest, unassuming man who despised sham and pretense and was deadly serious about his scientific work" (Kriebel 1987). Recognized for these characteristics, in 1909 Deam was appointed the first Secretary of the State Board of Forestry and a member of the Indiana Conservation Commission. In 1917 he became the acting State Forester and in 1919 was appointed head of the Forestry Division in the newly formed Department of Conservation. A significant portion of the salaries and travel allowances he earned while serving in these positions paid for his collecting expenses.

In 1915 he purchased and outfitted a Ford Model T touring car which he called the "Weed Wagon." "The advent of this motor car signaled an end of Charlie Deam's first fifty years,



A 1933 Arnold Arboretum herbarium specimen of *Quercus x deamii* accession 897-28, which was grown from acorns received from Charlie Deam in 1928.

Accession	Taxon	Grid	Height (meters/feet)	DBH (centimeters/inches)	Year accessioned
7033 E	<i>Fraxinus tomentosa</i> Pumpkin ash	27SW	24.1 / 79.1	82.2 / 32.4	1929
7033 F	<i>Fraxinus tomentosa</i> Pumpkin ash	27SW	25.1 / 82.3	58.5 / 23.0	1929
21817 A	<i>Quercus x bebbiana</i> Bebb oak	25SE	17.4 / 57.1	29.5 / 11.6	1916
16883 A	<i>Quercus shumardii</i> var. <i>schneckii</i> Variant of Shumard oak	32NW	21.3 / 69.9	61.7 / 24.3	1916
19804 A	<i>Tilia americana</i> American linden	7SE	14.2 / 46.6	76.1 / 30.0	1916
21588 A	<i>Gleditsia triacanthos</i> Honeylocust	21NE	18.4 / 60.4	56.4 / 22.2	1929

a period of growth and the laying of ground-work. Now began in earnest his tireless, distinguished journey into science . . . In the decade from 1905, when he reorganized and restarted his Indiana herbarium and numbering system, through 1914, his last full year without a car, he averaged collecting about 1,500 specimens a year. But in 1915 alone he added 3,764" (Kriebel 1987).

Deam sent his collections to the Missouri and New York Botanical Gardens and to Charles S. Sargent, director of the Arnold Arboretum. He asked for assistance in identifying his specimens. The Sargent Letter Books, found in the archives of the Arnold Arboretum, contain copies of thirty letters written by Sargent to Deam during the years 1914 through 1919. They reveal that Sargent identified over 600 tree and shrub specimens mounted on Deam's herbarium sheets. Sargent thought highly of Deam's work, writing on two occasions in 1915: "I am very pleased indeed with your collection [*Cornus* and *Salix*] and I think you have done a capital piece of work, and certainly you are adding greatly to the knowledge and distribution of Indiana trees" and "There is nothing in

your *Carya* collection which I should not have expected from Indiana. It is a remarkably fine collection and of very great assistance to me."

When Sargent believed one of the trees found by Deam would enrich the Arnold Arboretum's living collection, he requested Deam send seed for propagation. The table above lists some specimens grown from seeds sent by Deam that still survive in the Arboretum's living collection.

THE DEAM OAK

In Wells County, Indiana, about three miles northwest of Bluffton, stands an oak tree which is well into its second century of growth. Specimens from this tree were first collected on October 4, 1904, by Bruce Williamson, a young zoologist, and his father. The specimens were taken to Deam who forwarded them to Professor William Trelease of the Missouri Botanical Garden for identification. Growing in proximity to this tree were many white (*Quercus alba*) and chinquapin (*Q. muehlenbergii*) oaks. Though reminiscent of *Q. alba*, the leaves were not as deeply lobed and its acorns were not as large as those of a white oak.

In the first edition of *Trees of Indiana*, Deam described the tree as follows: "*Quercus alba* x *Mu[e]hlenbergii*. Plate 44. Bark of a white oak type, branchlets in October gray and somewhat pubescent; winter buds ovoid, blunt, reddish-brown, more or less gray pubescent; leaves obovate in outline, 6–12 cm. (2¼ – 4¾ inches) long, wedge-shaped at base, coarsely toothed and irregularly lobed, sinuses wide or narrow, lobes and teeth ascending except the lowest pair, lobes and teeth generally triangular, sometimes oblong, dark green above, paler and densely gray pubescent beneath; petioles 1.5–3 cm. (½ – 1¼ inches) long; acorns on stalks about 0.5 cm. (1/5 inch) long; nut ovoid, about 2 cm. (¾ inch) long, rounded or flat at the base, rounded at the apex, chestnut brown, pubescent near the summit, enclosed for 1/3 or more of its length in the thin saucer-shaped cup; cup rounded at the base, pubescent within; scales blunt, thickened on the back, brown, densely gray pubescent."

In 1915, Deam discovered that this unique hybrid tree had been blazed for cutting by the landowner. When persuasion to save the

tree failed, Deam negotiated the purchase of the one-fifth acre of land on which the tree was growing for seventy-five dollars, a princely sum in those days. The land was deeded to the State in order to preserve and protect the tree. The property became known as the Deam Oak Monument Forest, the smallest preserve in Indiana.

In July of 1916, Sargent, who had been assisting Deam in the identification of woody specimens found in Indiana, wrote: "Dear Mr. Deam, I have been hoping for some time to hear from you and I hope you are getting on all right. You remember, no doubt, your peculiar Oak, a supposed hybrid between *alba* and *Muehlenbergii* (14117 and 14131). I should be very glad to get some acorns of this tree to plant in the autumn, and as it grows within a few miles of Bluffton it ought not to be difficult for you to get them. Before sending acorns put them in water and send only those that sink for those that float are worm-eaten and worthless."

Records for Arnold Arboretum accession 7786 list it under the name *Quercus deamii* Trelease and indicate that plants were grown



The original Deam oak in Indiana on May 8, 2011 (left) and July 16, 2011 (right).

The Arboretum's First Deam Oak

IN 1908, the Arnold Arboretum received two plants of *Quercus muehlenbergii* × *Q. alba* (accession 5962) from the Parks Department of Rochester, New York. It is likely that they were grown from seed distributed by Charles Deam. Accession 5962-B has grown over the past century on Peters Hill to become a stately tree 20.1 meters (66 feet) tall and 59 centimeters (23.2 inches) DBH.



GEORGE HIBBEN

This 1908 accession (5962-B) of Deam oak (center) grows on Peters Hill at the Arboretum.



This Deam oak (accession 7786-A) was grown from acorns received by the Arboretum in 1916 from Charlie Deam.

from seed received on September 28, 1916, from C. C. Deam, near Bluffton, Wells County, Indiana. Accession 7786-A, now over ninety years old, stands adjacent to Oak Path and is 21 meters (69 feet) tall and 69.8 centimeters (27.5 inches) DBH. Indeed, after studying specimens taken annually for many years, Professor William Trelease determined the tree discovered in 1904 was a natural hybrid of the two species. In the 1917 *Proceedings of the American Philosophical Society* he named it not for the

Williamsons who first found it, but for Deam who had first described the tree and saved it from destruction.

Seventy years later, in 1987, the Deam Oak Monument Forest was described in Robert C. Kriebel's biography, *Plain Ol' Charlie Deam, Pioneer Hoosier Botanist*: "Northwest of Bluffton, off Indiana 116 at County Road 250-N, the traveler encounters a chain link fence around a hundred-foot-square reservation. Inside the enclosure are three picnic tables, a rusted trash barrel, a grill, a backyard-type swing set for youngsters. And forty feet from the highway pavement, the Deam oak lives on, plain and battered as its namesake. A brown and yellow, state-maintained sign explains its significance to the stranger."

PERPETUATING THE DEAM OAK

Today, very few inhabitants of Bluffton and Wells County recall Charlie Deam's career as a plant collector, forester, and conservationist, or the history of the Deam oak. Among the knowledgeable few are Douglas Sundling, a resident and employee of Bluffton, and Brad Brody, the Wells County District Forester. They are both dedicated to the preservation of this notable oak. Sundling's photographs—made in the spring and summer of 2011—show that the tree, while aging, is in good condition, and a wooden fence encloses the well maintained grounds.

Because of the Deam oak's interesting history and connection to the Arboretum, several staff members became interested in clonally repropagating the original tree. In the spring of 2011, a request was made to Sundling and Brody for scion material. They sent a bundle of 3- to 6-inch-long stem terminals, and Arboretum propagator Jack Alexander grafted these scions onto *Q. macrocarpa* understock. Several of these grafted plants will be grown on for future planting in the Arboretum's Living

WELLS COUNTY GIS



An aerial view of the the Deam Oak Monument Forest (upper left), the smallest preserve in Indiana.

DOUGLAS SUNDLING



The informational sign near the original Deam oak.

Collection. The remaining plants will be returned to Sundling and Brody to be planted in Indiana's Deam Oak Monument Forest and Wells County parks. One hundred years later, Charlie Deam's legacy lives on.

GEORGE HIBBEN



One of the grafted Deam oaks growing at the Arboretum's Dana Greenhouses.

Bibliography

- Deam, C. C. 1912. *Trees of Indiana*. (published in the Indiana Board of Forestry Report for 1911, Bulletin No. 1, pp. 86–372). Wm. B. Buford, Contractor for State Printing and Binding, Indianapolis, Indiana.
- Kriebel, R. C. 1987. *Plain Ol' Charlie Deam, Pioneer Hoosier Botanist*. Purdue University Press, West Lafayette, Indiana.
- Weatherwax, P. 1971. Charles Clemon Deam: Hoosier Botanist. *Indiana Magazine of History* 67(3): 197–267
- Trelease, William. 1917. Naming American hybrid oaks. *Proceedings of the American Philosophical Society* 56: 44–52.

George Hibben began volunteering with the nursery and greenhouse staff at the Arboretum's Case Estates site in 1988. He also accessioned artifacts found at the Arboretum and prepared the monograph *Arnold Arboretum—Prehistoric Indian Artifact Collection* in 1991.

BOOK EXCERPT:

Writing the Garden: A Literary Conversation Across Two Centuries

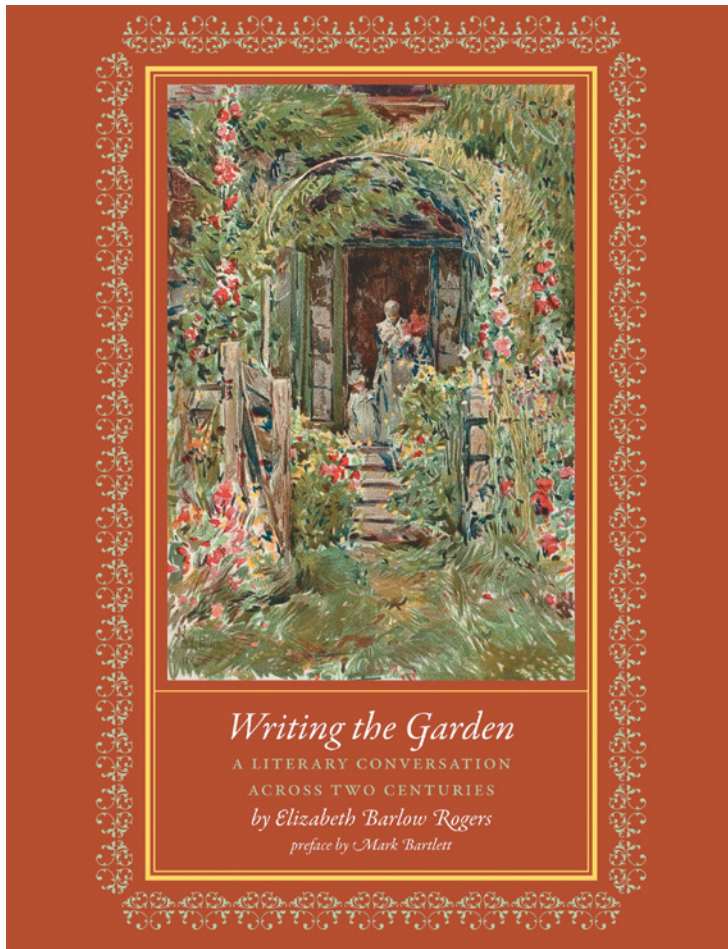
Elizabeth Barlow Rogers

David R. Godine, Publisher, Jaffrey, New Hampshire, with funding from the Foundation for Landscape Studies and the New York Society Library. 2011. 312 pages. ISBN: 978-1-567902-440-4.

EDITOR'S NOTE:

IT'S SPRING, and those of us who love to garden are happily sinking our fingers into the warming soil as we plant seeds, pull early weeds, and ruthlessly hunt down lurking cutworms. But after a hard day in the garden it's time to relax with a good book, and what better than a book about some of the best garden writers (or writing gardeners) of the past couple of centuries. In *Writing the Garden*, author Elizabeth Barlow Rogers presents insightful essays on the works of a diverse group of writers. Some are well known, others less so, but in their writing all present fascinating opinions about the nature of gardening and a deep love for the subject. Rogers groups the authors into sections based on their interests and importance to garden literature, such as

"Women in the Garden," "Travelers in the Garden," and the delightful "Humorists in the Garden" (it turns out I'm not the only gardener who goes slug hunting at night with a flashlight). In the following excerpt, "Warriors in the Garden," we are reminded that the seemingly gentle art of gardening is full of highly opinionated practitioners.

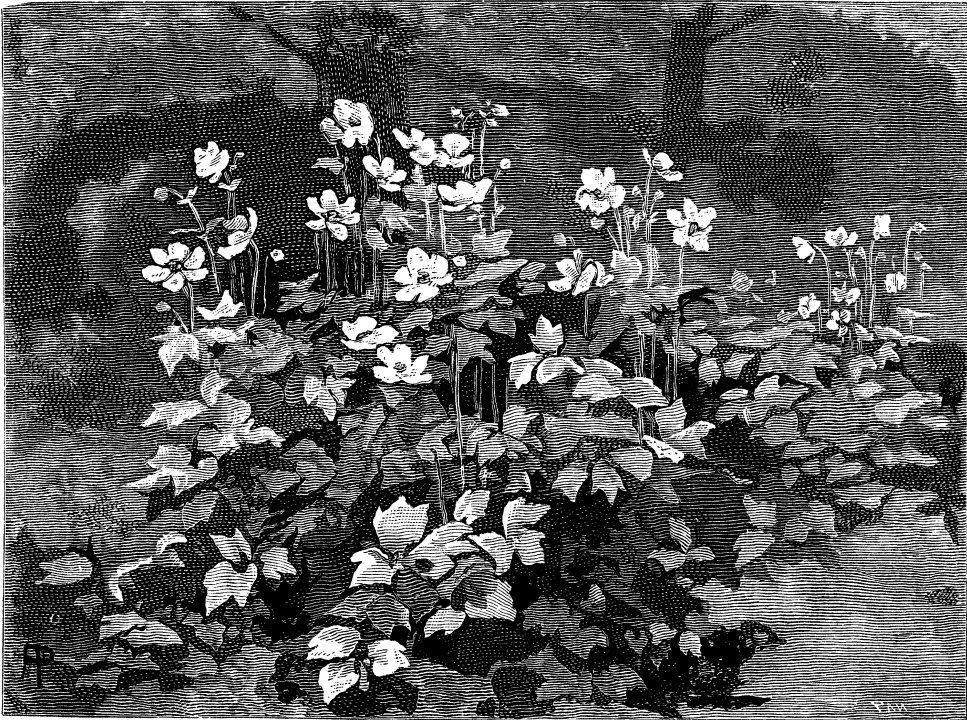


“Warriors in the Garden”

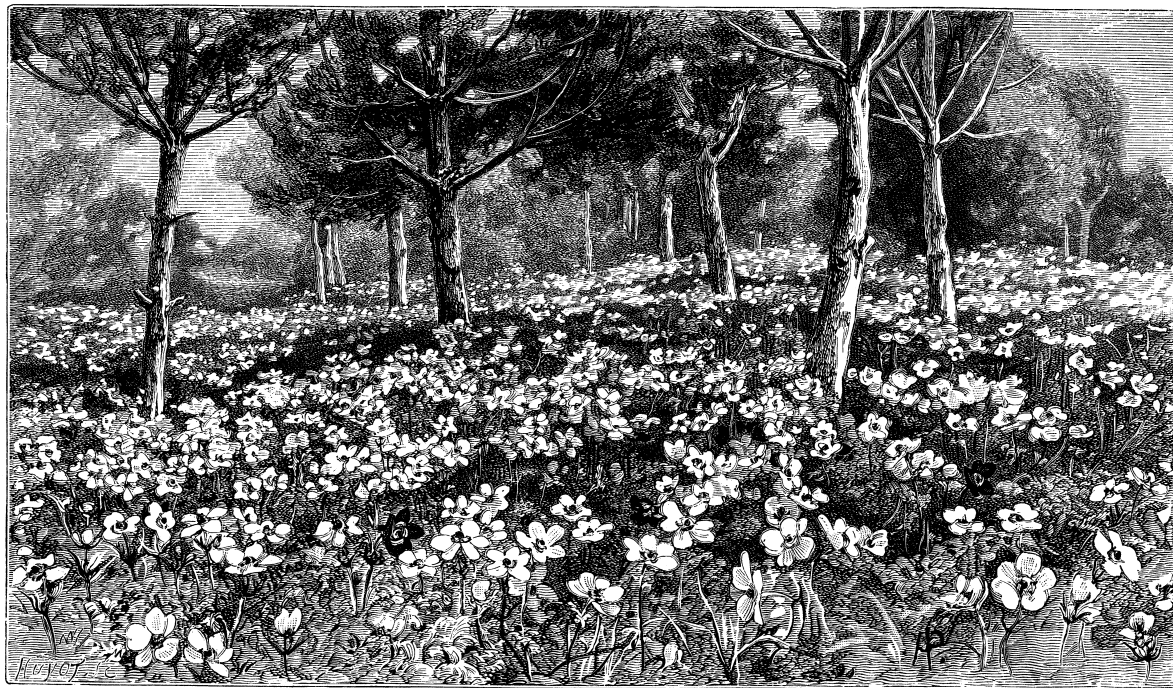
Gardening is nothing less than warfare with nature. With no respect for the cabbage or the rose, nature sends in her legions of hungry insects and foraging animals to wreak havoc. But there is another kind of warfare in the garden, one that is waged against fellow gardeners rather than garden pests. In this kind of warfare garden theory is often presented as a polemical diatribe against previous practices or contrary philosophies. For the reader, it is both instructive and amusing to argue or agree with certain opinionated writers and to refight the horticultural battles of yesteryear as they promulgate their passionate beliefs and ideas.

William Robinson

If [Gertrude] Jekyll was the authoritative mother of a more naturalistic English garden style, her friend William Robinson (1838–1935) was its highly influential father. He also serves as the prime exemplar of a didactic and sometimes colorfully caustic genre of garden writing. In Robinson’s view, the architect was the enemy of good landscape design, which he held to be the exclusive province of the gardener—that is, the enlightened gardener who agreed with him that mowing be forsaken in some parts of the garden so that cut lawns would transform themselves into wildflower meadows. His further ideal was to allow climbing plants to entwine themselves on trunks and branches, and he dogmatically declared that fallen leaves should be left on the ground as natural mulch in woodlands.



The White Japan Anemone in the Wild Garden.



Anemones in the Riviera. Thrive equally well in any open soil here, only flowering later.

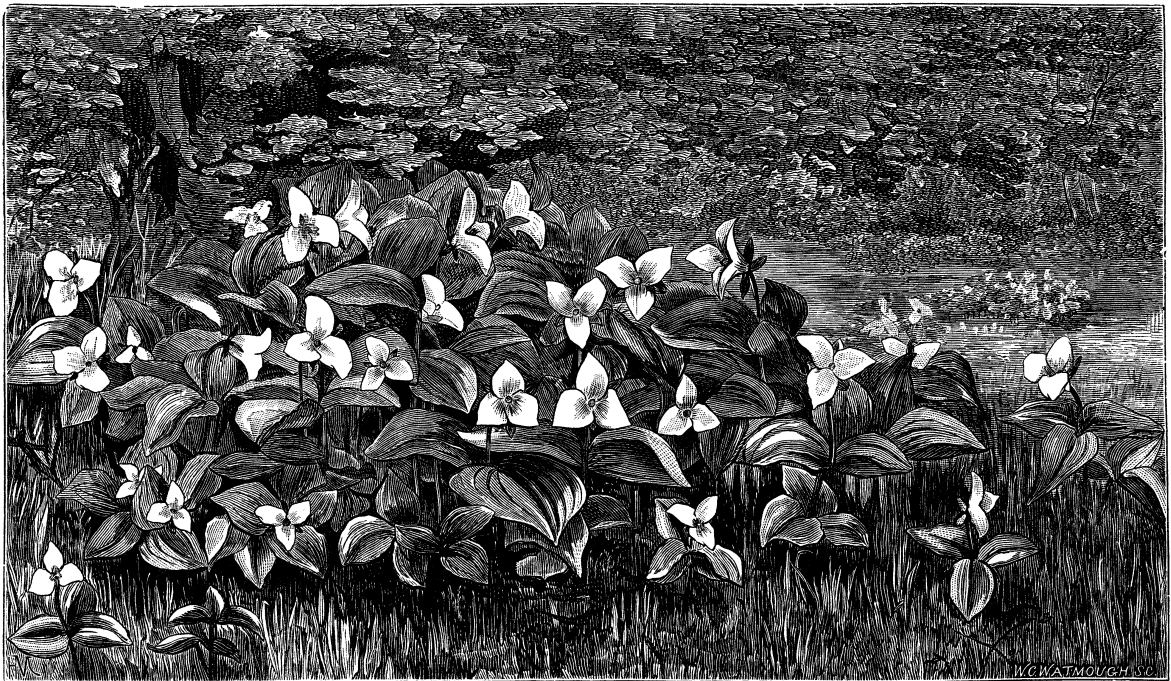
A trained professional gardener, Robinson had a botanist's as well as a horticulturist's thorough knowledge of plant species and their growth habits. He was adamantly opposed to greenhouse-grown annuals planted in regimental rows or showy ornamental beds. He also detested the display of trees and shrubs in Loudon's Gardenesque style as individual specimens, and he vigorously proselytized the overthrow of late Victorian gardening in favor of one in which bulbs were planted in drifts, herbaceous beds were composed of mixed perennials, and horticultural species appeared to merge at the garden's perimeter with the native vegetation of meadows and woodlands. Together he and Jekyll redirected garden design in a way that gave the world what is now thought of as the prototypical English garden—a blending of wild and artificial nature; the grouping of trees and shrubs to form pleasing landscape vistas; the use of hedges to create more intimately scaled garden "rooms"; and the laying out of beds in which casually composed yet sophisticated plant combinations—based on a thorough knowledge of floral and leaf colors, blooming times, and growth characteristics—made gardens interesting throughout the entire year.

Two years after the publication of *The English Flower Garden* (1883)—a volume that eventually ran to fifteen editions and remained in print for fifty years—Robinson purchased the Elizabethan manor of Gravetye in Sussex along with its adjoining two hundred acres. He subsequently acquired additional land so that his property totaled a thousand acres, more than sufficient in size for rural nature and naturalistic garden to be melded into a unified landscape with unobstructed views of the horizon. Here, with occasional advice from his friend Jekyll, he created broad scenic effects as well as herbaceous gardens closer to the manor. The landscape theories he put into practice at Gravetye, however, had been articulated long before in *The Wild Garden* (1870).

It would be a mistake, as Robinson is at pains to point out, to assume that the wild garden is the same thing as the native-plant garden. It should, to the contrary, be considered an opportunity to naturalize the flora of other countries, for as he tells us:

Naturally our woods and wilds have no little loveliness in spring; we have here and there the Lily of the Valley and the Snowdrop, and everywhere the Primrose and Cowslip; the Bluebell and the Foxglove take possession of whole woods; but, with all our treasures in this way, we have no attractions in or near our gardens compared with what it is within our power to create. There are many countries, with winters colder than our own, that have a rich flora; and by choosing the hardiest exotics and planting them without the garden, we may form garden pictures.

Here it is important to pause a moment and consider again the term “garden pictures,” since it is so frequently found in the writing of both Robinson and Gertrude Jekyll. For these writers, garden pictures did not imply the same thing as the Picturesque, the term commonly used to describe the earlier garden style in which designed landscapes were created in accordance with the principles of landscape painting. The garden pictures they had in mind are perhaps better characterized as vignettes, small scenes of beauty that the eye takes in as discrete discoveries rather than as panoramic scenery. Jekyll’s carefully positioned camera framed many charming, seasonal vignettes within Munstead Wood, and in *The Wild Garden*, Alfred Parsons’s engravings give graphic expression to Robinson’s words, which are never themselves lacking in descriptive power. This does not mean, however, that such garden pictures, whether verbal or illustrational, should be considered as so many floral incidents independent



The American White Wood-Lily (*Trillium grandiflorum*) in Wild Garden, in wood bottom in leaf-mould.



The Giant Scabious (8 feet high).
(*Cephalaria procera*.)

of the overall landscape composition. Rather, the term is intended to imply that gardening is fundamentally an art form in which composition, color, line, and texture are as important as botanical knowledge and horticultural expertise.

Marshaling his arguments in favor of wild gardening, Robinson points out:

Hundreds of the finest flowers will thrive much better in rough places than ever they did in the old-fashioned border;... look infinitely better than they ever did in formal beds;... [have] no disagreeable effects resulting from decay;... enable us to grow many plants that have never yet obtained a place in our 'trim gardens'; [and] settle the question of the spring flower garden [since] we may cease the dreadful practice of tearing up the flower-beds and leaving them like new-dug graves twice a year. As a final point in its favor, the wild garden can be seen as a kind of paradisiacal reunion of nature's bounty, for from almost every interesting region the traveler may bring seeds or plants, and establish near his home living souvenirs of the various countries he has visited.

Robinson's luxuriously produced *Gravetye Manor, or Twenty Years' Work Round an Old Manor House* (1911), is both a diary and a narrative of the successive stages of Gravetye's creation from 1885 through 1908. He tells the reader how he went about felling trees to open up views, removing iron trellises and the kitchen garden abutting the house, eliminating "a mass of rock-work (so-called) of ghastly order," and destroying other offensive elements left by the previous owners. The book's beautiful engravings evince the principles put forth in *The Wild Garden* as Robinson demonstrates Gravetye to be the paradigm in which house, garden, fields, and forest are united in a pastoral work of art as quintessentially English as a painting by Constable.

As attractive as all this may sound, there were some who felt that Robinson's garden ideal lacked cohesive structure. His peppery personality made it inevitable that he would be attacked by those who disagreed with him, most notably the architect Reginald Blomfield, whose ideas about what a garden should be were quite different.

Reginald Blomfield

The Formal Garden in England (1892) by the country-house architect Reginald Blomfield (1856–1942), with its attractive engravings by F. Inigo Thomas, is a treatise in the form of an essay on English garden history. In the preface to my second-edition copy Blomfield puts forth a spirited defense against what he considers to be Robinson's fallacious, intemperate, and untenable charges, made after the publication of the first edition. With considerable invective Robinson had taken

issue with Blomfield's recommendations for a return to formality, and here it is Blomfield's turn to aim a few angry verbal arrows at Robinson. Heatedly, he rebuts Robinson's sarcastic barbs, accusing him of willful misinterpretation and ignorance of garden making as a form of art:

Mr. Robinson neither gives us the definition, nor shows us where the art is or what it consists of. The trees are beautiful, and so are the flowers, but where is Mr. Robinson's art? What does it do for us, or for the trees or the flowers? His skill as a tree-planter, or as a flower-grower, is no doubt great, but that does not make him an artist, and by no possible wrestling of the term can he be called so on this ground only.

Blomfield maintained, "The formal treatment of gardens ought, perhaps, to be called the architectural treatment of gardens, for it consists in the extension of the principles of design which govern the house to the grounds which surround it." Discriminating between the two views of gardening—the formal and the naturalistic—he argues:

The formal school insists upon design; the house and the grounds should be designed together and in relation to each other; no attempt should be made to conceal the design of the garden, there being no reason for doing so, but the bounding lines, whether it is the garden wall or the lines of paths and parterres, should be shown frankly and unreservedly, and the garden treated specifically as an enclosed space to be laid out exactly as the designer pleases.

He strongly refutes the notion that the landscape gardener has a monopoly on nature:

The clipped yew-tree is as much a part of nature—that is, subject to natural laws—as a forest oak; but the landscapist, by appealing to associations which surround the personification of nature, holds the clipped yew-tree to obloquy as something against nature. Again "nature" is said to prefer a curved line to a straight, and it is thence inferred that all the lines in a garden, and especially paths, should be curved. Now as a matter of fact in nature—that is, in the visible phenomena of the earth's surface—there are no lines at all; "a line" is simply an abstraction which conveniently expresses the direction of a succession of objects which may be either straight or curved. "Nature" has nothing to do with either straight lines or curved; it is simply begging the question to lay it down as an axiom that curved lines are more "natural" than straight.

For Blomfield, it was not the Italian style of formal gardening that was instructive for contemporary gardeners; rather it was the old gardens of England that had not succumbed to the fashion for Baroque ornamentation or,



The tall Ox-eye Daisy
(*Pyrethrum serotinum*).



Valley in Somersetshire, with Narcissi, Marsh Marigolds, and Primroses.

subsequently, the Picturesque. Nor did formality imply a great expanse as in the French garden, for “some of the best examples of [the English garden] are on a comparatively small scale.” However, Blomfield does not merely sing the praises of old English formal gardens. With an architect’s eye for composition and detail, he criticizes these as well as the later gardens designed in the Picturesque style, his principal objects of censure. He maintains that the white marble statues of Bacchus and Flora at Wilton were a mistake: “To attain its full effect [marble] wants strong sunlight, a clear dry light, and a cloudless sky. In the soft light and nebulous atmosphere of the north marble looks forlorn and out of place.” An integrated overall plan is what counts most, so in discussing public parks he comes down hard on “the spasmodic futility” of Battersea Park where, without a dominant idea controlling the general scheme, “merely to introduce so many statues or plaster casts is to begin at the wrong end. These are the accidents of the system, not the system itself.”

Blomfield is united with Robinson, however unintentionally, in despising the Gardenesque style and the gardener who would have the specimen dahlia banish the hollyhock and other simple, old-fashioned flowers. He equally hates plants in beds that “make the lawn hideous with patches of brilliant red varied by streaks of purple blue.” Taking sarcastic aim at the Victorian head gardener, he asks, “Would he plant them in patterns of stars and lozenges and tadpoles? Would he border them with paths of asphalt? Would he not rather fill his borders with every kind of beautiful flower that he might delight in, and set them off with grass and pleasant green?”

In Blomfield’s mind, the desired relationship between the architect and the horticulturist should not end in a standoff, nor would it, if their responsibilities were divided thusly: “The designer, whether professional or amateur, should lay down the main lines and deal with the garden as a whole, but the execution, such as the best method of forming beds, laying turf, planting trees, and pruning hedges, should be left to the gardener, whose proper business it is.”

In this regard, it is worth noting that Gertrude Jekyll achieved some of her most notable gardens in collaboration with the architect Edwin Lutyens. Their sympathetic marriage of brick terracing and hedge-enclosed garden spaces created an Arts and Crafts landscape idiom that influenced Vita Sackville-West and Harold Nicolson at Sissinghurst and many other gardeners up to the present day. Providing an architectural frame uniting house and garden and giving structure to seasonal borders of sophisticated horticultural artistry, this type of design might be viewed as a synthesis of Robinson and Blomfield. The harmonizing of their opposing but ultimately complementary theories resulted in a style that made a virtue of formal structure as a foil for loosely composed “garden pictures.” In this way these important late-nineteenth-century garden writers can be said to have assisted in the redirection of English garden style at a critical time when vast estate grounds were beginning to become a thing of the past.

Elizabeth Barlow Rogers is a writer on the history of landscape design and the cultural meaning of place. She is the president of the Foundation for Landscape Studies and was the founding president of the Central Park Conservancy. *Writing the Garden* recently won a 2012 Book Award from the American Horticultural Society.

Note: The images that accompany this excerpt are engravings by Alfred Parsons from William Robinson’s *The Wild Garden*, 1881 edition.

2011 Weather Summary

Bob Famiglietti

2011 continued the trend of warmer than normal temperatures and above average precipitation that started in 2008. Plentiful moisture plus a long growing season allowed the Arboretum's plants to attain optimum growth. Some of our plants suffered damage from storms during the year.

JANUARY began mild, and Arboretum visitors celebrated New Year's Day at 59°F, the high temperature for the month. Only a week earlier, on December 26th, 2010, the Arboretum had experienced a fierce blizzard that brought high winds and heavy snow, which led to considerable plant damage. This mild early January weather helped reduce the blizzard's snow pack to 6 inches and gave our horticulture crew an opportunity to start cleaning up and repairing our living collections. The spring mood was short lived, however, as temperatures dipped and the snows began. Light snowstorms occurred by the second week and a strong, windy northeaster on the 11th and 12th dropped over 15 inches of snow and inflicted even more damage to our plants. Snowstorms occurred from the 17th through the 22nd, depositing another 10 inches. Now 22 inches of snow lay accumulated on the ground. The snow stopped for a couple of days as an Arctic cold front swept through, dropping the night temperature to -4° on the 24th. This was the first below-zero reading in two years. The month finished cold and very snowy with storms dropping another 10 inches from the 24th through 26th, making January's snow total 35 inches and leaving 31 inches of snow accumulation on the ground.

SUE A. PFEIFER



The view from an Arboretum plow truck on January 13, 2011, after another heavy snowfall.

Arnold Arboretum Weather Station Data • 2011

	Avg. Max. (°F)	Avg. Min. (°F)	Avg. Temp. (°F)	Max. Temp. (°F)	Min. Temp. (°F)	Precipi- tation (inches)	Snow- fall (inches)
JAN	33.9	16.0	25.0	59	-4	5.01	35.2
FEB	37.9	17.9	27.9	59	5	4.48	13.0
MAR	46.4	28.9	37.7	71	11	2.88	1.0
APR	58.3	40.5	49.4	76	29	4.59	2.5
MAY	68.8	51.5	60.2	90	37	3.69	
JUN	74.6	57.8	66.2	89	43	5.01	
JUL	85.8	64.4	75.1	101	52	1.66	
AUG	81.2	62.7	72.0	93	54	10.45	
SEP	74.4	57.7	66.1	86	41	6.49	
OCT	62.9	45.0	54.4	82	28	10.75	2.0
NOV	57.6	38.3	48.0	69	26	4.64	
DEC	46.3	29.2	37.8	62	13	4.14	

Average Maximum Temperature 60.7°F

Average Minimum Temperature 42.5°F

Average Temperature 51.6°F

Total Precipitation 63.79 inches

Total Snowfall in 2011 53.7 inches

Snowfall During Winter 2010–2011 67.8 inches

Warmest Temperature 101°F on July 22

Coldest Temperature -4°F on January 24

Last Frost Date 30°F on April 16

First Frost Date 30°F on October 28

Growing Season 194 days

FEBRUARY 1st delivered 7 inches of snow. The snow pack on the ground now measured 38 inches, testing the limits of our snow depth gauge (40 inches maximum). Rain storms occurred on the 2nd and 5th while light snow fell on the 7th and 8th. The snow pack was reduced to 28 inches. A storm-free period occurred from the 9th through the 18th and our low for the month of 5°F occurred on the 10th. Temperatures soared to 59°F on the 17th and 18th, reducing the snow pack to 24 inches. February ended with seasonal temperatures and 3 inches of light snow, leaving the month's total snowfall at 13 inches and the snow pack at 17 inches.

MARCH began with a rainstorm, a rare event for this winter. Temperatures climbed into the low 40s and our accumulated snow from the fading winter season was further reduced to 13 inches. The maximum temperature on the 3rd was well below average at just 28°F and temperatures dipped into the teens and twenties for the first five nights of the month. It felt like winter would never end. Snow and ice were everywhere, making it extremely difficult for anyone to walk in the Arboretum, let alone work on the grounds. Gardeners could hardly wait to walk on bare earth again. Temperatures then jumped to 60°F on the 6th and it remained relatively mild, eventually making it to 71°F on the 18th. This was the high for the winter season and the warmest it had been since October 28th, 2010, nearly five months earlier. A combination of these unseasonably warm temperatures along with the sun's intensity and some rain brought an end, on March 16th, to the continuous snowpack that had started on December 20, 2010—an incredible span of nearly three months. Old Man Winter teased us with a 3 inch snowstorm on the 31st. March ended on the dry side with only 2.88 inches of precipitation, which was 14.56 inches less than March 2010's record-setting 17.44 inches.

APRIL 1st started with remnants of the snowstorm that began on March 31st. The first ten days saw high temperatures rise into the 40s, 50s, and 60s. It dropped to freezing or below on the 6th, 7th, and 8th, the last freezing temperatures for the season. It reached a warm 72°F on the 11th, 76°F on the 24th and 29th, and then hit 81°F on the 27th, the high for the month. Very humid conditions were recorded on the 5th, 26th, and 27th, and wind gusts of over 50 mph from the east occurred during a storm on the 17th. Measurable precipitation occurred on 14 days, totaling 4.59 inches.

MAY had lots of fog and near normal temperatures but its average daily high temperature of 68.8°F was 4.3°F cooler than last May's average daily high of 73.1°F. Rainfall totaled 3.69 inches and precipitation was measured in our rain gauge on ten consecutive days from the 14th through the 23rd. Our highest one day rainfall was only .95 inch on the 18th. A low temperature of 37°F was recorded on the 2nd, the last reading in the 30s for the season. It reached 90°F for the first time this year on May 27th. Last year the first 90°F reading was recorded on April 7th.

JUNE was rather cool. Total rainfall reached 5.01 inches, about 2 inches above normal. There were 14 days with measurable precipitation and thunder was heard on several occasions. High temperatures of 89°F were recorded on the

8th and 9th. It never reached 90°F, very unusual for June but not as cool as June 2009 when the maximum temperature was 83°F and the month turned out to be the third coldest June in Boston's 140 years of weather history (Logan Airport station). A low of 43°F was recorded on the 4th, the last minimum temperature in the 40s.

JULY was very hot and dry. 52°F, our low for the month, occurred on the morning of the 15th. Heat waves (three consecutive days of 90°F or over) were recorded at Boston's weather station (Logan Airport) on several occasions, but the Arboretum's weather station only recorded one. We missed others by just a couple of degrees. Our heat wave occurred from the 20th through the 23rd. July's high temperature was recorded on the 22nd at 101°F, making it the highest temperature reading for the year and our first triple digit reading since July 2002 (104°F). In contrast, our low temperature for the year was -4°F on January 24th, giving an incredible temperature range of 105°F in 2011. We had measurable precipitation on 11 days and the month's total of only 1.66 inches was produced mainly from brief periods of light rain.

AUGUST brought very heavy rainfall, a continuation of July's heat, and Tropical Storm Irene. The month began hot—a reading of 93°F occurred on the 1st, which was the high for the month. Temperatures then moderated to the 70s and 80s and we did not reach 90°F again this year. Some early August rains developed into continuous rainy weather, and by the 10th almost 5 inches had fallen. More rain fell from the 13th through the 21st, leaving another 2.48 inches.



KYLE PORT

Tropical Storm Irene blew through the Arboretum on August 28, 2011. Fortunately, damage was limited, but this shellbark hickory (*Carya laciniosa*, accession 12898-S) lost a large section of its crown.

Tropical Storm Irene arrived in full force on the 28th but (fortunately) didn't live up to expectations. Wind speeds only reached 28 mph at the Arboretum's weather station and rainfall was less than 2 inches. Structural damage to our collection was minimal thanks in large part to the preventive pruning standards used by our arborists and horticulturists. Thunder was heard throughout the month and August ended up with an incredible 10.45 inches of rain, more than making up for July's deficit.

SEPTEMBER was summerlike and continued the trend of warm, wet weather that had been so evident this growing season. Rain, thunder, fog, and mosquitoes were prevalent. A high of 86°F was recorded on the 5th while a low of 41°F occurred on the 19th. It rained for four days from the 5th through the 8th, dropping over 3 inches of precipitation. Rainy conditions continued and the month's total reached 6.49 inches. These warm rains encouraged our plants to remain lush and actively growing, showing no signs of slowing down for the impending fall season.

OCTOBER began as September had ended and the year's trend continued with warm temperatures and more rain. The monthly high temperature of 82°F was reached on the 9th and 10th. Above average temperatures occurred throughout the month and October ended as the 12th warmest in Boston's 140 years of weather records (Logan Airport station). Our first fall freeze finally happened on the morning of the 29th as temperatures dipped to 32°F and a heavy rainstorm was ending, leaving a trace of snow and icy surfaces. This officially ended the Arboretum's long growing season at 194 days. Five heavy rain storms occurred through the month along with lighter periods of rain, leaving 10.75 inches as the month's total. On October 30th, the last storm of the month left 2 inches of wet snow on the ground. Our plant collections suffered some damage since the snow was able to accumulate on the leaves that had not yet fallen, weighing down and breaking branches. The Arboretum was very fortunate to have escaped the devastation that occurred just to the north and west of here where up to 31 inches of snow fell, causing massive damage and statewide power outages that in some cases lasted for weeks

NOVEMBER brought opinions and predictions as to what the imminent winter season would be like as October's snowfall brought back memories of last winter's extremely snowy conditions. Some were sure that the wet, stormy weather pattern that we were in would continue into the winter. Much of Massachusetts now lay under a heavy blanket of snow, but the Arboretum's 2-inch layer melted as temperatures rose into the 60s and the monthly high of 69°F was reached on the 9th. November continued very warm and finished 2nd warmest in 140 years of records at Boston's Logan Airport weather station. Our low for the month was set on the 1st at 26°F. The fall foliage season was somewhat disappointing as the warm temperatures created unfavorable conditions for vivid color. It only dipped below freezing on ten nights in November, and Thanksgiving was a delightful 57°F. At the Dana Greenhouses, as in several recent years, the trend in warm temperatures prevented our containerized plants from going dormant, thus delaying their return to winter cold storage. November ended with 4.64 inches of rain and no snow!



NANCY ROSE

Two inches of heavy, wet snow fell on October 30, 2011. The next day, traces of snow along with fallen leaves remained around this ginkgo (*Ginkgo biloba*, accession 222-97-A).

DECEMBER was very mild, continuing November's warmth. A high of 62°F was recorded on the 5th and it reached 50°F or more on nine occasions. It was the 7th warmest December in Boston's weather record keeping history and the sixth straight month with above average temperatures. December's early warmth brought vivid foliage displays on some individual specimens. A 13°F low for the month—recorded on the morning of the 19th—hastened winter dormancy in our containerized plants, a condition needed for storage. 4.14 inches of precipitation was recorded and no snow fell, an unusual event that marked only the fifth time in Boston's weather records that no snow fell in the November–December period.

Bob Famiglietti is a Horticultural Technologist at the Arnold Arboretum's Dana Greenhouses.

Wilson's Pearlbush (*Exochorda giraldii* var. *wilsonii*): A Gem to the Core

Stephen Schneider

It can be a memorable experience the first time you crack open a geode—pale gray and nondescript on the outside, the colorful crystalline center is anything but. The same can be said for cutting into the wood of the trees and shrubs in the Living Collection at the Arnold Arboretum. There have been many surprises for Arboretum staff who prune and remove trees and are also interested in wood-working; often what is hidden by thick, scaly, neutral-colored bark proves to be a treasure once the inner wood is revealed.

Several species come to mind when considering unique and beautiful wood. Golden rain-tree (*Koelreuteria paniculata*) and Osage orange (*Maclura pomifera*) yield consistent chocolate brown and bright yellow heartwood, respectively. Boxelder (*Acer negundo*), on the other hand, often displays an erratic, bright red fungal staining in parts of its center. Even the old-growth stems of common lilac (*Syringa vulgaris*) often have a deep purple center that, unfortunately, disappears once the wood is seasoned.

Although there are many other Arboretum plants that possess interesting wood, a large specimen of Wilson's pearlbush (*Exochorda giraldii* var. *wilsonii*, accession 11626-C) merits particular attention. Grown from seeds collected in 1907 by E. H. Wilson in Hubei, China, this centenarian shrub resides just off the road near the top of Bussey Hill. Its racemes of spring flowers start as white, pearl-like buds and open to perfect, five-petaled flowers. The flowers are followed by interesting star-shaped seed capsules. Mature and well established, this multi-stemmed shrub has a commanding spread of about twenty feet and a height to match. Its presence, however, is often overlooked by the many visitors who pass by it each day on their march to the top

of the hill. They are unaware of the secret that lies beneath its bark.

I remember well the first time I was introduced to *Exochorda* wood. A rather small piece, about a foot long and four inches in diameter, was tossed to me from across the room. Its weight took me by surprise—it felt as strong and dense as hickory. A first attempt to cut through it failed, since the wood was too hard for the band saw blade to provide a straight cut. It became necessary to use a fine-toothed carbide blade on a table saw. That machine even seemed to struggle a bit, but the results were worth the effort. Hidden beneath the gray, scaly, exfoliating bark was densely grained wood patterned in light and dark browns with orange-red highlights throughout. A single pass of the blade proved to be all that was needed to create a smooth finish, velvety to the touch. Applying a coat or two of Danish oil enhances the beauty of this material since it makes the swirling grain more noticeable.

When put on a lathe and turned, this wood creates a beautiful spindle that displays the variety and complexity of its colors and patterns. Checking (cracking that occurs during the lumber drying process) is nearly impossible to avoid with a wood this dense, so finding stable stock to work with between the cracks can be a challenge. Since discovering the wood of *Exochorda*, I have reserved the use of it for very special projects for very special people. Since Wilson's pearlbush is a relatively easy plant to grow, I'll often give the recipient of the gift a live specimen of it to plant in the backyard as a reminder that, much like a geode, its plain appearance on the outside can harbor profound beauty on the inside.

Stephen Schneider is Manager of Horticulture at the Arnold Arboretum.



