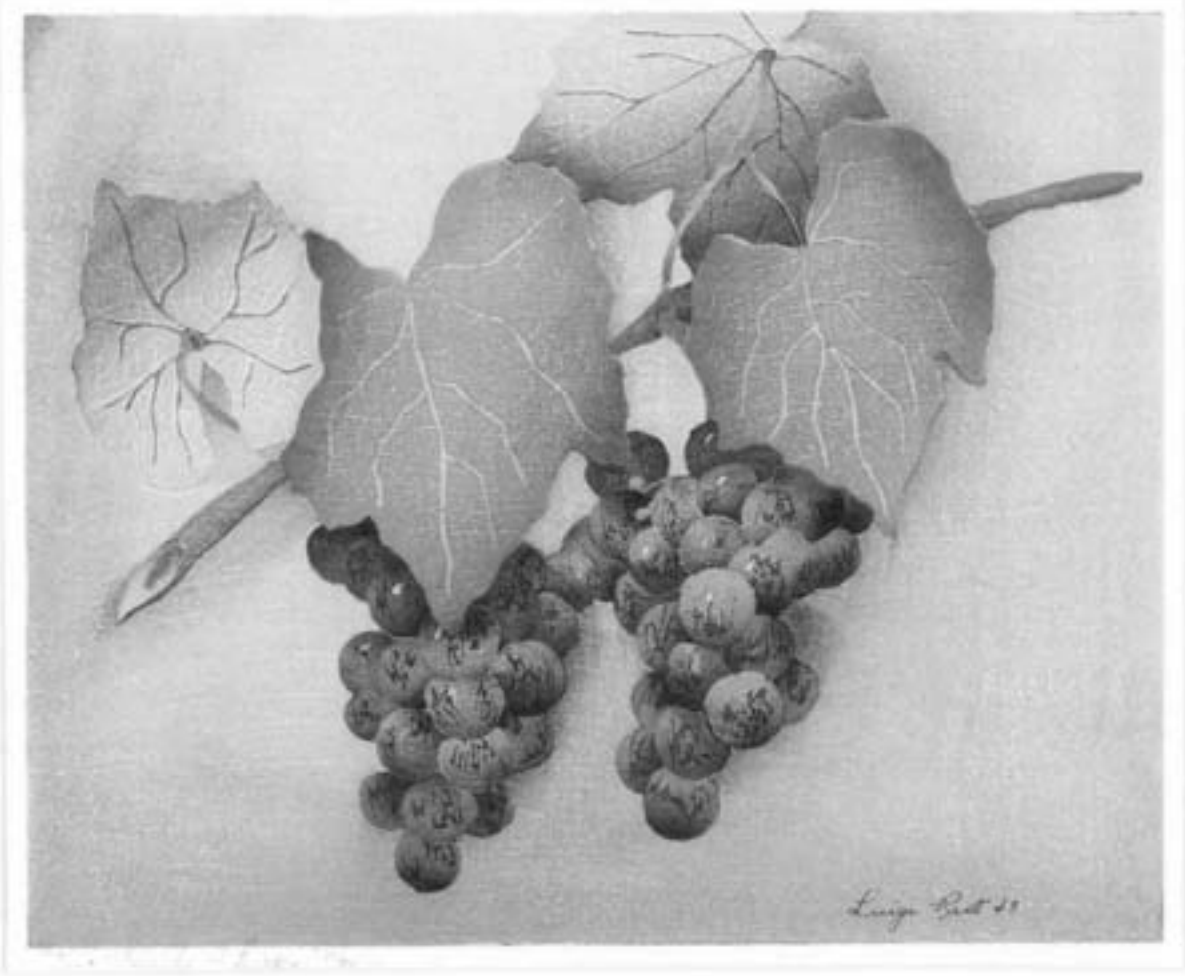
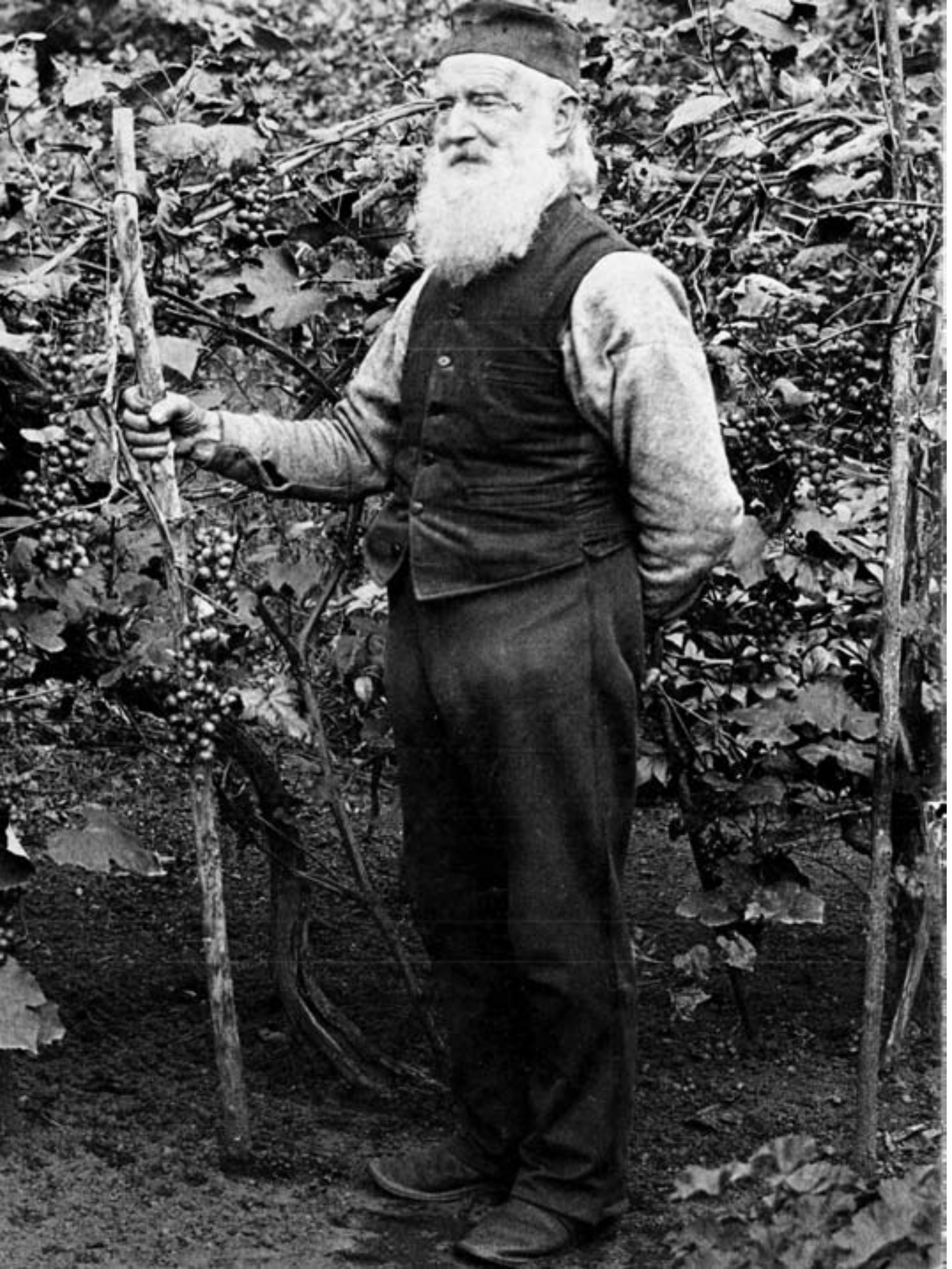
Fall 1988

# arnoldia

The Magazine of the Arnold Arboretum





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*Front cover* "Two Bunches of Grapes," woodblock print done in 1943 by by Luigi Rist (#20 in an edition of one hundred) Courtesy New York Public Library, Astor, Lenox, and Tilden Foundations (Print Collection, Miriam and Ira D Wallach Division of Art, Prints, and Photographs) *(See page 4)* ❧ *Inside front cover* Photograph of Ephraim Wales Bull (1806–1895), originator of the 'Concord' grape, standing in front of the original 'Concord' grapevine in Concord, Massachusetts Photograph by Alfred W Hosmer (1890s) From the Archives of the Arnold Arboretum *(See page 4)* ❧ *Inside back cover* Plant of *Vitis coignetiæ* in the Arnold Arboretum's shrub collection (1916) Photograph by G R. King From the Archives of the Arnold Arboretum *(See page 4)* ❧ *Back cover* Leaf of *Vitis davidii* (Romanet) Foex var *cyanocarpa* Sargent, showing its crimson autumnal color Native to China, *Vitis davidii* has prickles on its stems and petioles and produces black fruit, the variety *cyanocarpa*, named by Charles Sprague Sargent, is less prickly than the species and produces bluish fruit During the early 1900s the variety was sold commercially by James Veitch & Sons of Chelsea, England, as "*Vitis armata* var *Veitchii*" Unfortunately, *Vitis davidii* is hardy only to Zone 7 (USDA) In New England it dies to the ground in severe winters and rarely produces fruit From *Journal of the Royal Horticultural Society*, Volume 28, Numbers 3 and 4 (1904) *(See page 4)*



# Dr. Robert E. Cook Is New Director of the Arnold Arboretum

Dr. Robert Edward Cook, a biologist with a special interest in plant population biology, has been appointed Director of the Arnold Arboretum. Dr. Cook is currently Associate Professor of Ecology and Systematics at Cornell Plantations, the university's arboretum and botanic garden.

"We were delighted to recruit someone of Bob Cook's caliber who combines outstanding managerial and leadership skills with a strong scientific background," said Sally Zeckhauser, Harvard University's Vice President for Administration and chair of the search committee.

Cornell Plantations receives about twenty percent of its operating budget from Cornell; the remainder must be raised from private and public sources. Under Dr. Cook's direction, Plantations has undergone a five-year period of growth, doubling its budget, its permanent staff, and its supporting membership. A successful fundraising program implemented among alumni and friends resulted in increased unrestricted giving to Cornell Plantations and a sixty percent rise in special gifts for capital projects.

Major capital projects undertaken during Dr. Cook's tenure included garden, trail, and landscape renovations as well as the acquisition of more than two hundred fifty acres of ecologically important land. A new service building was designed, funded, and constructed.

Dr. Cook also initiated a series of research projects at Plantations with funding from outside organizations. Ecological research on endangered plant species and a review of national recovery plans, for example, were funded by the United States Fish and Wildlife Service, New York State, and the World Wildlife Fund. The National Science Foundation (NSF) is supporting ecological research on grasses, trees, fire, and grazing in the Kenyan savannah. Research on curriculum development for elementary-level science education (Project Leap—LEarning About Plants) is being jointly funded by NSF and New York State.

Dr. Cook's own research interests are in plant propagation biology in general and in the biology of clonal plants in particular. A native of Warwick, Rhode Island, and a 1968 graduate of Harvard College, he received his doctorate from Yale in 1973. He was a Cabot Fellow at Harvard in 1974 and 1975 and served as assistant professor in the Department of Biology from 1975 to 1980 and as associate professor from 1980 to 1982. Dr. has also been as program director in population biology and physiological ecology at NSF.

# "He Sowed; Others Reaped": Ephraim Wales Bull and the Origins of the 'Concord' Grape

*Edmund A. Schofield*

**While Emerson and his colleagues were designing a philosophy for the unique needs of an expanding nation, one of their townsmen was quietly developing a grape to match the demands of its rigorous physical environment**

**The Origins and Spread of "The Vine"**

In their peregrinations over the ages, the grape and mankind have crossed paths, have even trod the same path, many times. East and West, for millennia, they have followed similar routes of history, myth, and romance—first in the Northern Hemisphere, in Asia, in Europe, in North America, and then, within the last few centuries, in the Southern Hemisphere as well. Companion to mankind from dimmest antiquity, the grape has been one of mankind's most important, most esteemed fruits.

In the West, the story of the grape has been largely the story of *Vitis vinifera* Linnæus—"the vine"—from which all cultivated varieties of grapes were derived before Europeans came to North America. Cultivation of the vine—called viticulture—is a very ancient art: from earliest times and in every country, wherever it would thrive, the vine has been cultivated with care, especially here in the West. What wheat is to other cereals the vine is to other fruits—the most important in Western eyes, as rice is in Eastern eyes. Asia Minor, somewhere between and south of the Black and Caspian seas, apparently is its home. From Asia Minor, its culture spread both west and east.

In early history viticulture was carried out largely to supply grapes for winemaking. Long before the beginning of the Christian era, grapes and wine were of considerable importance to Middle Eastern and Mediterranean peoples. Thousands of years ago the Egyptians were well acquainted with the use and properties of wine, which their traditions say were revealed to them by Osiris. Their chief vineyards were planted on the banks of the Nile. Joseph's dream, described in Genesis, gives evidence that the vine was cultivated in Egypt at least eighteen hundred years before Christ. Grape seeds have been found with mummies in Egyptian tombs that are at least three thousand years old, and details of grape growing appear in mosaics of the Fourth Dynasty of Egypt (2440 B.C.) and later.

Viticulture was practiced very early in Palestine ("And Noah began to be a husbandman, and planted a vineyard."—Genesis 9:20). By 600 B.C., the Phoenicians probably had carried varieties of wine grapes to Greece, which were carried thence to Rome and on to southern France. Hundreds of varieties now are cultivated in the vineyards of the wine-growing country there. Ancient records show that the Chinese had vineyards of native grapes at least one thousand years before Christ. During the second century B.C., *Vitis vinifera* was introduced into China from western Asia, by way of Persia and India.

Viticulture flourished in Greece during Homer's time. It was Dionysus, god of revelry and protector of the vine, who gave them the

vine, they say, and taught them viticulture. Viticulture must have been introduced very early into Italy also, by the Greeks. The Roman writers Virgil, Cato, the Plinys, Varro, and Columella describe numerous varieties of the vine, list many types of wine, and give directions for training and pruning vines and for making wine.

For a time the Romans seemed to prefer Grecian wines to their own; not until about the first century of the Christian era did Italian wines begin to find favor in their own land. In Virgil's time the varieties in cultivation seem to have been exceedingly numerous; and the varied methods of training and culture now in use in Italy are in many cases identical to those that Columella and other Roman writers described.

Because viticulture was so important in Roman life, it is often referred to in Roman poetry, such as Virgil's *Georgics*. Bacchus, god of the vine, whom the Romans identified with Dionysus, was enormously popular at Pompeii, which was destroyed in A.D. 79 by the eruption of Mount Vesuvius. Archæologists have found the sites of many vineyards at Pompeii, some of them surprisingly large. They have found also numerous wall paintings of the vine, countless wine shops, and innumerable amphoras. All of this archæological evidence attests to the importance of the grape as a staple of daily life in Pompeii and verifies the information on viticulture given in the writings of Pliny the Elder, Cato, Varro, and Columella.

During Roman times grape culture extended inland from the coast, moving up the Rhone River valley of France and as far north as the Rhine and Moselle valleys. By the second century A.D. the Romans had taken the vine to Germany.

Well before the second century, raisin and table grapes had spread around the eastern end of the Mediterranean Sea to the countries of North Africa. Because the customs and religions of North Africa differed from those of the northern coast of the Mediterranean, the raisin and table grapes on the one hand, and the wine varieties, on the other, spread along different routes.

Centuries later, when Europeans colonized lands around the globe, the grape was always among the plants they took along. In the fifteenth century viticulture became established in Madeira and the Canary Islands. Later it spread to South Africa, Australia, and South America. The first wine grapes were brought to California from Mexico late in the eighteenth century. During the first half of the next century grape growing and wine-making became established in California and expanded rapidly between 1860 and 1900.

**Grapes and Their Uses**

Most grapes (*Vitis* spp.) are coarse, woody vines that cling to their supports by means of tendrils. Some species native to arid regions are almost-erect shrubs rather than vines. Grapes are members of the Vitaceæ, or Vitidaceæ (the Grape, or Vine, Family). The genus name *Vitis*, which is the classical Latin name for the grape, was conferred by Carolus Linnæus. Over the years *Vitis* has been variously defined to include or exclude the genera *Cissus* and *Ampelopsis*, from which it is distinguished on the basis of small differences in floral structure. (*Cissus* was the Greek name for the ivy, and *Ampelopsis*, the name created by Michaux, comes from the Greek *ampelos*, the vine—*i.e.*, the grape—and *opsis*, appearance.) *Vitis* is widespread in the Northern Hemisphere, especially in the temperate regions. Defined strictly, it includes around sixty species; when *Ampelopsis* and *Cissus* are included, it consists of some two hundred fifty species.

As noted, grapes may be cultivated for any of a number of purposes: for making wine, for example; for eating out of hand as "table grapes"; for drying as currants and raisins; for preserving as jams, jellies, and preserves or for nonalcoholic beverages; and, latterly—owing to the elegance and rich color of the leaves of some grapes or to the shade they afford—as ornamentals, perhaps one of their least known uses.

Several species recommend themselves as ornamentals:

*Vitis coignetiæ*, known as the gloryvine, is a handsome, fast-growing, climbing vine. Its very large, heavy leaves reach ten inches in diameter and turn red in the fall. Probably the fastest growing of the grapes, gloryvine is ideal as a screen, its shoots increasing their length by as much as fifty feet in a single season, and a single plant of *Vitis coignetiæ* can cover a thousand square feet of trellis in a few years. It produces inconspicuous and inedible fruits. Hardy to Zone 5, *Vitis coignetiæ* was introduced into the United States from Japan by the Arnold Arboretum in 1875.

*Vitis amurensis*, the Amur grape, is a vigorous vine native to the Amur River region of eastern Asia. Hardy to Zone 4, it is grown as an ornamental. Producing black fruit, *Vitis amurensis* comes into its own in the fall, when its coarse foliage turns crimson to purplish. Introduced to horticulture around 1854, this species is hardier than *Vitis coignetiæ*.

*Vitis californica*, the California grape, is hardy to Zone 7. It is native to the West Coast, from Oregon to California and like *Vitis amurensis* is effective in the fall, its coarse leaves turning red at that season. Although rather dry, its glaucous-white fruits are, nonetheless, pleasant-tasting.

*Vitis riparia*, the riverbank grape, is a very hardy, high-climbing vine that is native to a large area of the United States. (It is hardy to Zone 2.) *Vitis riparia* produces purple-black fruit that are covered with a dense bloom, and it bears leaves with lustrous, bright-green undersides. Its staminate flowers are fragrant, but they are too small to be effective ornamentally.

## Grapes of the New World

North America has been called a natural vineyard: the first record of the continent is also a record of its grapes, which grow wild in the greatest profusion in the wooded parts of the continent, from the Great Lakes to the Gulf of Mexico and from the Atlantic to the Pacific. When the early explorers visited North America, wild grapevines were so prominent that the region was repeatedly called "Vineland." Leif Ericson, for example, reached our northeastern shores in about the year 1000. "Farther south and westerly they went," says Justin Winsor's narrative, "and going up a river came to an expanse of water, where on the shores they built huts to lodge in for the winter, and sent out exploring parties. In one of these . . . a native of that part of Europe where grapes grew . . . found vines hung with their fruit, which induced Leif to call the country Vineland." The English colonists found the coast of what is now New England to be profuse in grapes. In 1621, Edward Winslow wrote that in New England "are grapes, white and red, and very sweet and strong also."

Governor's Island, in Boston Harbor, was granted to Governor John Winthrop in 1632 on condition that he plant a vineyard or orchard on it. The island early became known as "The Governour's Garden." In the Middle Atlantic region, the native grapes also attracted the attention of colonists and travelers. In Virginia in 1607–09, for example, Captain John Smith saw "[o]f vines, great abundance in many parts, that climbe the toppes of the highest trees in some places, but these beare but fewe grapes. But by the rivers and Savage habitations where they are not overshadowed from the sunne, they are covered with fruit, though never pruined nor manured." The Spanish colonists of Florida and the French *voyageurs* were attracted by the abundance of grapes. Even as far north as Michigan the *voyageurs* found the banks of streams festooned with grapevines.

John Adlum's vineyard near Georgetown in the District of Columbia, which was planted in 1820, first successfully produced grapes on the Atlantic coast. His introduction of the 'Catawba' into general culture would eventually yield valuable new cultivars. In 1860, nine-tenths of the 5,600 acres of vineyard established east of the Rocky Mountains were 'Catawba' grapes.

The Mission Fathers in California were the first to grow successfully a variety ('Mission') of *Vitis vinifera* in what is now the United States; they brought it to San Diego in 1769. 'Mission' remained the leading variety grown until 1860, when European varieties were introduced. Between 1860 and 1870 in California there was a rapid increase in the acreage of varieties derived from native American grapes. It was during this time that the culti-

var 'Concord' became the leading commercially grown grape of American origin.

The vine of Europe and of history, *Vitis vinifera* has always led a precarious existence whenever it was introduced into the eastern United States. It has been supplanted there by derivatives of the native species—*Vitis labrusca* (the northern fox grape), *Vitis æstivalis* (the summer grape), and *Vitis rotundifolia* (the southern fox grape)—and by their hybrids with *Vitis vinifera*. Being essentially table fruits, the American grapes are quite different from their Old World counterpart, which, as has been said, is a wine fruit. Thus, European writings historically have dealt with "the vine," American writings with "grapes." But early American writings also dealt with the vine and with wine; it was not until the middle of the last century that the native grape began to be appreciated and understood as a table grape.

Each species, native or introduced, has many varieties, is best adapted to specific regions of the country, and is managed according to its own special requirements. The "vinifera grapes," or "European grapes," as they are sometimes called, are grown in California and other areas with mild climates and, as said, descend from *Vitis vinifera*. They are cultivated in vast quantities in all major grape-growing regions of the world except eastern North America. Some of the American varieties have been introduced into France and other countries that became infested with phylloxera in the latter half of the nineteenth century, to serve as stocks for the better kinds of European vines, because their roots suffer less injury from attacks of this insect than do European species.

*Vitis labrusca* produces purple-black fruit and has leaves that are dark green above. It is a rampant grower, ranging widely throughout the eastern United States, from New England to Georgia, Tennessee, and southern Indiana, and is hardy to Zone 5. *Vitis labrusca* is the parent of most of the American grapes now in cultivation and is the mainstay of grape-growing east of the Rocky Mountains, with the most extensive plantings near the southern shores of the Great Lakes.

'Concord' may be the most famous American cultivar; it is certainly the most widely grown. Because of its wide adaptability it is produced in almost every grape-growing state of the Union. Although often considered as pure *Vitis labrusca*, it more likely is a hybrid of that species with another species. In fact, most of the older American grapes are thought to involve more than one species. Therefore, "*Vitis labruscana* L. H. Bailey," a name used in some horticultural literature, has been applied to American grape cultivars of *Vitis labrusca* parentage.

### 'Concord': A Hardy Grape for American Vineyards

The story of 'Concord' is one of the more interesting chapters in the history of North American viticulture. While not the first or only important cultivar developed in America, 'Concord' may well be the most noteworthy. It and Ephraim Wales Bull, its originator, are the protagonists of the account that follows. The past has been a long prologue to their story.

Ephraim Wales Bull came to serious grape-growing and to the town of Concord, Massachusetts—after which his cultivar was named—in a roundabout way. He was born in Boston on March 4, 1806, the day on which Thomas Jefferson was inaugurated for his second term as president. The farmhouse in which he was born stood in the area of Washington Street that would later become known as "Newspaper Row," around the corner and a mere five hundred feet from the house on Milk Street where Benjamin Franklin was born almost precisely a century before. Ephraim was the eldest son of Epaphras Bull, a silversmith who had left the hamlet of Bull's Pastures (now Bullsville), New York, for Boston. His family was descended from Captain Thomas Bull, who had come to America in 1635 on the ship *Hopewell*.

Boston was, in those days, a large, thriving town, and Washington Street, now one of the

principal and most congested thoroughfares in the "Hub," was a village highway. Cows grazed on Boston Common. Behind the Bulls' house was a large garden where young Ephraim indulged a love of horticulture, experimenting in grape growing, among other things.

A studious child, Ephraim received the Franklin medal at school in 1817, when he was only eleven years old. In 1821 he was apprenticed to Louis Lauriat in the trade of goldbeating—the beating of gold into leaf, then much in demand by bookbinders and gilders. At about this time his family moved to nearby Dorchester, Massachusetts. While pursuing his trade as goldbeater, young Bull devoted all his spare time to horticultural pursuits, particularly to small-scale grape growing, in his home garden. (Bull raised the varieties 'Isabella', 'Catawba', and 'Sweetwater'.) This was the period during which 'Isabella' was first grown in Boston.

In 1826 Bull acquired a shop of his own, and on September 10 of that year he married Mary Ellen Walker, a relative of President James Walker of Harvard College. After their marriage the Bulls moved back to Boston, taking a small house on Fayette Street, in the South End. Bull was by now a first-class gold-beater, working long hours in a hot, dusty shop on Cornhill (near modern Government Center). He continued to indulge his interest in horticulture during his off hours, in the small garden garden behind his house.

Eventually, Bull developed lung trouble, and his doctor advised him to live in fresh air and away from Boston's chill east winds. In August 1836, therefore, he quit Boston, buying seventeen acres of land in Concord, a town located some twenty miles northwest of Boston. There the Bulls lived in a little white house on the road to Lexington. Though he continued his trade as goldbeater in a tiny shop behind his home, Bull loved farming more. Whenever the gold business slumped he would have time to putter in his garden. His passion by now was the grape, and the 'Isabella', 'Catawba', and 'Sweetwater' grapes he had cultivated in Boston had come with him to Concord. He was unable to ripen the grapes in open culture, however, even in favorable seasons. This was due, he said, to "the late spring and early autumn frosts, which we are liable to in this deep valley of Concord."

Bull had moved to an interesting town during an interesting period of American history. Concord was hardly a typical rural village. There, where "the shot heard 'round the world" was fired in 1775, the American Revolutionary War had begun. Decades later a social movement, American Transcendentalism, took root and flourished in Concord around the writer and philosopher Ralph Waldo Emerson. The land on which Ephraim Bull had settled made him next-door neighbor to the Bronson Alcotts and later to the writer Nathaniel Hawthorne, with whom he was soon on friendly terms. During the years of struggle before he discovered the famous grape, Bull was assisted and encouraged by these and other neighbors and townsmen, many of whom were members of the Emerson-Thoreau-Alcott Transcendentalist group. In strategic ways, many of which will never be known in full detail, Bull worked alongside his Transcendentalist friends when antislavery agitation reached its peak in Concord just before the Civil War.

Hawthorne's son, Julian, recalled Bull in his book, *Hawthorne and His Circle*. "Another neighbor of ours," he wrote,

> hardly less known to fame [than the Transcendentalists], though in a widely different line of usefulness, makes a very distinct picture in my mind; this was Ephraim Wales Bull, the inventor of the Concord Grape. He was as eccentric as his name; but he was a genuine and substantial man, and my father took a great liking to him, which was reciprocated. He was short and powerful, with long arms, and a big head covered with bushy hair and a jungle beard, from which looked out a pair of eyes singularly brilliant and penetrating. He had brains to think with, as well as strong and skilful hands to work with.... He often came over

and sat with my father in the summer house on the hill, and there talked about politics, sociology (though under some other name, probably), morals, and human nature, with an occasional lecture on grape culture.

In 1841 Bull bought the Eben Dow farm, which adjoined his property, setting out many trees, shrubs, and vines. The farm's soil was sandy, and a south-facing slope suggested to Bull great possibilities for grape growing. Determined to develop an earlier-ripening grape that would be hardy in Massachusetts, he obtained from every available quarter vines having local reputations for excellence. (He knew about Jean Baptiste Van Mons' success in raising pears from seeds and concluded that the same process could be applied to grapes.) Again he was disappointed but persevered—eventually turning to wild vines he found growing nearby.

He had been watching carefully an early-ripening native of the northern fox grape, *Vitis labrusca*, growing in a distant part of his garden, noticing, when it fruited at the end of August 1843, that it possessed at least some of the essential qualities he sought. The grape was of good quality, and the idea immediately occurred to him that another generation would be a still greater improvement. He removed and planted it near his 'Catawba' vine, by which it was probably pollinated. Bull (he informs us) planted the resulting grapes from the wild vine "whole, into the ground, skin and all, at a depth of two inches, and covered the row with boards.

"I nursed these seedlings six years," he informs us further, "and of the large number obtained only one that proved worth keeping. On the tenth of September 1849, I was enabled to pick a bunch of grapes, and when I showed them to a neighbor who tasted them, he exclaimed, "Why this is better than Isabella'!"

"I looked about to see what I could find among our wildings," Bull would reminisce later. "The next thing was to find the best and earliest grape for seed, and this I found in an accidental seedling at the foot of the hill. The crop was abundant, and of very good quality for a wild grape. I sowed the seed in the autumn of 1843. Among them the Concord was the only one worth saving."

*Ephraim Wales Bull in 1861. From* Transactions of the Massachusetts Horticultural Society for the Year 1908.

The exact source of the accidental seedling is obscure. Bull had bought his house in Concord in 1836. That year, he told Liberty Hyde Bailey decades later, boys brought up from the Concord River some wild grapes and scattered them about the place. A seedling appeared in a corner of the garden, evidently the offspring of these truant grapes.

The stray seedling grew at the base of what is now called Revolutionary Ridge, an interesting landform so named for the key role it had played in the battle between the Americans and the British on April 19, 1775. Extending a mile or so eastward from the center

of Concord, this sandy, gravelly ridge is a kame delta that was deposited some ten to twenty thousand years ago in Glacial Lake Concord by meltwater rushing from the retreating continental ice sheet. British troops, advancing from Lexington to Concord North Bridge along the road that parallels the Ridge, passed Bull's cottage en route to the bridge, and passed it again during their ignominious retreat to Lexington and Boston. The Concordians, knowing their native terrain far better than did the alien British, who kept mainly to the public highway, travelled across lots, on the far (north and eastern) side of the Ridge, rushing from the Bridge to Meriam's Corner, a fork in the road located only three hundred yards east of Bull's cottage, at the eastern tip of Revolutionary Ridge. There the Americans ambushed the British troops. In one of his romance fragments, the posthumously published "Septimius Felton," Nathaniel Hawthorne makes Revolutionary Ridge the scene of a duel between Felton and a British soldier.

**'Concord' Makes Its Debut**

In 1849, Bull paid a visit to the editorial offices of the *Boston Cultivator*, telling its editor, Samuel W. Cole, that he had a new and promising seedling black grape that he wished to exchange for one of 'Diana', which the *Cultivator* had offered for sale to its readers. Cole, who owned a nursery in Chelsea, had his foreman set the cutting out. It soon fruited, but little was made of it. Bull had stipulated that it was not to be propagated for sale.

In the spring of 1853, Bull took the limited stock propagated at Cole's nursery, having decided that the best way to publicize the new cultivar would be to exhibit it at Horticultural Hall in Boston, during that fall's meeting of the Massachusetts Horticultural Society. Accordingly, 'Concord' was exhibited for the first time on September 3, 1853, three years after it had produced its first fruit.

It is said that, through some mixup, the 'Concord' originally was exhibited among the vegetables and was nearly overlooked by the judges. In the perhaps embellished account of a journalist, when the show opened and Bull's new grape had not arrived,

> two members of the Society went out to Concord and said, "Where are those grapes you promised to send in?"
>
> Quite taken aback, Bull stammered, "I did send them in, by a neighbor. I was too sick to make the trip myself, but I sent them just as I said I would."
>
> Very much puzzled, the committee went back to the horticultural show. They rummaged around and found the grapes hidden in a pile of squashes and turnips and other vegetables. One look and they knew they had something. They looked at the big round, juicy fruit that had ripened fully two weeks before any other grape and then snitched a couple to eat. They smacked their lips and said, "I'll bet he girdled the vines—we better make sure there's no trickery here."
>
> So back to Concord they hastened, notebooks in hand, and gave poor Mr. Bull quite a going over. But he showed them the vines and some other clusters—far bigger and better than those he had sent to the show.
>
> Once convinced, the committee announced to the world that, at last, a grape had been developed that would grow in New England—bigger and better than any grown before.

The next issue of Hovey's *Magazine of Horticulture* reported that, "Mr. Bull's new, early and delicious native variety, was exhibited before the Massachusetts Horticultural Society, on Saturday the third of September, fully ripe, being more than two weeks before the Diana was mature. It has not only proved by far the earliest grape we have, but also one of the most delicious, having in place of the musky flavor of Isabella, the rich aroma of the Catawba, with which, probably its parent was somewhat fertilized. Specimens were exhibited before the committee who say it fully maintains the high character heretofore given it."

"We are gratified to announce," *Hovey's* continued, "that Mr. Bull has decided to offer it for sale in April next, and has placed the entire stock in the hands of Messrs. Hovey & Co. for disposal. . . . It will be called the CONCORD grape, having been raised in the town of that name, very near the spot so

memorable in the annals of our history, and known as the Concord battle ground."

When Hovey & Company introduced it in the spring of 1854, it attracted considerable attention and was placed on the grape list of the American Pomological Society as one of the "new varieties which promise well." It attracted still more attention in 1855. The next few years found 'Concord' in the catalogs of every nursery in the country, and it spread rapidly throughout most of the eastern and midwestern states. Within the brief period of a year, 'Concord' was growing in the Middle West. One source, George Husmannn, states that in the winter of 1855 he secured buds of 'Concord' at Hermann, Missouri, from James G. Soulard of Galena, Illinois—half way across the continent. In 1858 'Concord' was placed on the regular list of recommended varieties by the American Pomological Society, where it remains.

Bull himself took a hand in promoting 'Concord'. In August 1854, for example, he corresponded with a Dr. J. C. Bennett of Great Falls, Iowa, who he hoped would market 'Concord' in Iowa. "The Charter Oak and the Concord are entirely different in all respects," Bull wrote.

> The Charter Oak is very large in berry though small in bunch, coarse, foxy, and wild. The Concord is as handsome in the bunch as a black hamburgh [the variety 'Black Hamburg'] and as large, delicate, full of juice, and has a rich aroma—and as unlike a wild grape as possible. It is hardy in wood and foliage and berry, which is not the case either with the Catawber ['Catawba'] or Isabella with me—both being infected by rot this very season, while the Concord is wholly free from any of these things.

By 1860, vineyards of 'Concord' had been planted in Chautauqua County, New York. In 1865 it was awarded the Greeley prize and called, prophetically, "the grape for the millions." During this period horticultural societies would maintain frequent contact with one another about new fruit varieties and cultural practices; by 1867 the Ohio Horticul-

*The original "Concord" grape vine, still growing after nearly a century and a half. Photograph by the author.*

tural Society was writing about the extensive plantings of the "noble Concord" in Ohio and Missouri. Within fifteen years of its introduction, thousands of acres of vineyards had been planted to 'Concord' all over the country. By the mid-1870s more 'Concord' had been planted in the Northeast than all other varieties put together. It had become the outstanding grape for both fresh and processed use. Fruit was shipped from the grape belts of the Lake Erie region to most of the major cities of the United States.

**"The Greeley Affair"**

In 1866, journalist Horace ("Go West, young man! Go West!") Greeley, editor of the New York *Tribune*, offered a prize of one hundred dollars "for the best grape for general cultivation." 'Concord' won. When the winner was announced before the Farmers' Club of the American Institute of New York City in October of that year, there was unanimous applause from the audience. Many members of the public later would express strong opposition, however, among them Horace Greeley himself! A Dr. E. Ware Sylvester described the controversy at a Farmers' Club meeting in March 1869 [Horace Greeley was in attendance], sparking a lively exchange:

> An effort has been in progress to discover among our native grapes, one which in healthfulness, hardiness and productiveness, should be adapted to the wants of the million. To this end the prize of $100 was, years ago, offered by Horace Greeley, and other prizes have since been awarded. You are well aware that the Greeley prize was given to the Concord. This brought out a torrent of abuse mainly from those interested in other vines, and even Dr. Greeley, with his usual kindly feelings, thought it best to apply a *Tribune* soothing plaster to the wounded head of Iona island. [The cultivar 'Iona' was developed by Dr. C. W. Grant of Iona Island, New York, which is situated in the Hudson River about forty miles north of New York City.] To the base insinuations which were made in the public prints, the members of the Greeley committee made no reply, and make none now; they were willing that time and experience, the great regulators of agricultural matters, should justify, as they were sure to do, the award of the committee.

Dr. Sylvester proceeded to cite a large number of authorities, statements of farmers, nurserymen, vineyardists, and vintners in all parts of the country, showing that 'Concord' was more successful and gave more satisfaction than any other grape. Horace Greeley then spoke:

> As the prize I offered has been directly alluded to by Dr. Sylvester, I may say that with the award of that committee I had nothing at all to do. When they came to their decision I paid over the $100. But the end I had in view was not attained by that investigation. I intended to stimulate the production of new and better vines, and hoped some grape would be brought out having the hardiness and adaptability to soils and climates of the Concord, good bearing qualities, and, what the Concord wants, high and delicate flavor. But the award was to the Concord, and I could never see what that man [not Bull, but William H. Goldsmith of Newark, New Jersey, who recently had exhibited the 'Concord' at a fruit show of the American Institute of the City of New York], whoever he was, did to deserve his $100. The Concord was widely cultivated, and all my money did was to advertise a grape already known; thus improvement was not stimulated, but rather checked. I am a little discouraged by the result, and do not propose to offer another bank note for a plate of common grapes. To my taste the Concord has no quality superior to the wild wood grape of my boyhood. [Greeley grew up in New Hampshire.] I admit that it is hardy and prolific; but after all, is it much of a fruit? I hope others will take up this matter, and at length bring out a grape hardy, productive, adaptive and highly flavored.

P. T. Quinn responded to Greeley's remarks:

> As a member of that committee, a word of explanation may be in order. There were two committees. The first decided on the Iona, and Dr. Grant claimed the award as the originator of the Iona. But there was a protest, a delay, a change in the personnelle of the committee, and the feeling with those who made the final award was that a grape like the Iona, known only to a few amateurs, did not come up to the requirements of Mr. Greeley, and should not receive the money.

Greeley responded that

> What I complain of is the eagerness of the committee. I did not care if they waited five years, and thus gave grape culturists a chance to enter new varieties. How do we know but Caywood's grape,

> for instance, the Walter, is as hardy and well suited to different soils as the Concord? If the prize were now open the Walter might take it for aught I know.

Dr. Sylvester countered that

> Two years or more have elapsed since that award, and has any grape risen up that could contest the palm with the Concord? This last fall, did not Concord receive the silver cup at Cincinnati for being the best wine grape, and the best table grape?

A Mr. Fuller assured Greeley that his money had not been wasted:

> While I agree with Mr. Greeley as to the qualities of the Concord, yet I must say that he never put out $100 that has done more good to the farmers of this country. It arrested attention everywhere, and people began to buy Concord vines who never bought before. It has been the means of planting a vine in 10,000, yes, 100,000 yards and gardens. Of course we are not to rest in the Concord; but it is so much better than no grape, besides it affords the best sort of a stepping-stone to something superior.

Despite his harsh remarks, Greeley is said to have relented, calling the 'Concord' "a grape for the millions."

**Life after 'Concord'**

Bull's success with 'Concord' did not end his experimenting. On the contrary, it led him to grow twenty-two thousand seedlings over a period of thirty-seven years, of which he selected twenty-one for introduction. A white grape, which he believed to be the most beautiful he could produce, he named 'Esther' in honor of his mother, for example; another, later production he named 'Cottage', out of love for his home, the little house which survives to this day as "The Grapevine Cottage"; yet another, 'Rockwood', he named after his lifelong friend, Judge Ebenezer Rockwood Hoar. 'Iona' and 'August Rose' were among his later introductions. Many seedlings he left unnamed. At one time he had one hundred twenty-five vines that he thought were worth saving; but, growing more critical, he discarded most of them.

Marshall P. Wilder, a noted nineteenth century horticulturist, stated that, "Had Mr. Bull done nothing else for the benefit of mankind, than originate the Concord grape, his name would be held in grateful remembrance, while the fruit of the vine shall cool the parched tongue, or the juice make glad the heart of man." Judge Hoar asserted that "had Bull conferred such a public benefit as originating the Concord grape in the Old World, the government would have conferred its recognition upon him, whereas in his own country what he had given years of patient study and toil to attain, was accepted as a mere matter of course."

Ephraim Wales Bull received scant pecuniary reward for his work after selling stock to Hovey & Company. He had sold 'Concord' vines directly at five dollars apiece during the first year, receiving a total of $3,200 in net income, but almost nothing thereafter because the commercial nurseries were propagating and selling it to the public in vast quantities and paying no royalties to Bull. He did garner many honors nonetheless: he was invited to lecture at Harvard on grape

*A corner of Ephraim Wales Bull's house, showing Bull's workshed. Courtesy of the Concord Free Public Library.*


*Monument to the 'Concord' grape and Ephraim Wales Bull erected in front of the Grapevine Cottage and the original 'Concord' grapevine by the town of Concord.*

growing, for example; he was elected a member of the Massachusetts House of Representatives from Concord and was chairman of the committee on agriculture; he later held the same position in the Massachusetts Senate; and he was appointed to the Massachusetts State Board of Agriculture.

The Massachusetts Horticultural Society awarded him three medals for the production of the 'Concord' grape and the best seedling grapes, including, in December 1873, a gold medal "for the production of the best hardy seedling grape, the Concord, which has proved, after a thorough trial, so universally adapted to general cultivation throughout the United States, and the most reliable grape for vineyard cultivation in Massachusetts." Later, he became an honorary member of the Society.

Bull deserved to benefit handsomely from his dedicated and painstaking work in developing 'Concord', but nearly all profits from it went to the commercial nurseries. Had his later cultivars been properly introduced they might have brought him wealth, but because 'Concord' had failed to be profitable, he hated commercial grape culture and, refusing to put them on the market properly, grew disappointed and embittered.

Thus, Bull had to be content with less tangible rewards: much respect and affection at home and a modest fame abroad. He saw his 'Concord' spread over the continent, leaving great wealth in its wake, while he, its originator, grew more and more impoverished. From a simple, frank, neighborly man he became a suspicious recluse, spending his days tending plants in a small greenhouse behind his cottage. This became the chief solace of his lonely later life.

Ephraim Wales Bull died on September 26, 1895. The epitaph on his grave is an apt description of his life: "HE SOWED; OTHERS REAPED."

### The True Place of 'Concord'

Today, a century and a half after it was developed, 'Concord' remains the preeminent grape of the eastern United States. It is well adapted to conditions in that part of the country, whereas the European varieties are not. According to a recent survey, more than seventy percent of the grapes produced in the northeastern, north central, and northwestern states are of this cultivar. As a progenitor of many other cultivars 'Concord' has an even greater claim to fame. Among the more familiar cultivars of 'Concord' parentage are 'Worden', 'Martha', 'Cottage', 'Niagara', 'Diamond', 'Moore's Early', 'Highland', 'Colerain', 'Brighton', and 'Black Eagle'. A score of others are either directly or indirectly linked to the family tree of 'Concord'.

Other claims have been made for the 'Concord', some of them patently false or exaggerated—although no doubt made in

good faith—some of them true. Local folklore, for example, claims that 'Concord' and varieties derived from it "saved the vineyards of Europe":

> Cuttings of 'Concord' went to Europe directly from Ephraim Wales Bull's own vineyard in the late 1870s or early 1880s, when the phylloxera was devastating the vineyards of France. An agent of the Emperor Napoleon came to America to investigate American grapes. The agent visited Bull in Concord and was presented with a bunch of 'Concord' cuttings.

The phylloxera is an insect, *Phylloxera vitifoliæ* Fitch, that is indigenous to the eastern and central United States. Imported into Europe between 1858 and 1863 on American vines taken there for grafting purposes, it has since reached almost every vine-growing country in the world. The first definite record that the phylloxera had reached Europe was made in 1863, in England; soon thereafter it was identified in France, through whose vineyards it spread rapidly. Within twenty-five years it had destroyed nearly one-third of France's vineyards—in all, more than two and one-half million acres. By 1885 the phylloxera had extended to most other grape-producing countries of Europe and had reached Algeria, Australia, and southern Africa. It was first discovered in California in 1880, but there is evidence it had reached that state more than twenty years earlier, having been introduced along with American vines from east of the Rocky Mountains.

The truth is that 'Concord'—like *Vitis labrusca* in general—is only slightly resistant to the phylloxera. Other American species and cultivars derived from them are notably resistant to the phylloxera, however; it is these that provided stocks for susceptible vines in Europe and elsewhere, not 'Concord' or its descendants. In any event, the folklore is in error on at least one other score: "the Emperor Napoleon" died decades before his agent is alleged to have visited Bull, and there is no evidence that the French government of the time dispatched an agent or agents to obtain 'Concord' from Ephraim Wales Bull. Representatives of the French government, led by Pierre Viala, did visit other Americans during those bleak years for French viticulture, however, even visiting William Gilson Farlow of Harvard University, who was a cryptogamic botanist, but they would have had little or no reason to visit Bull.

Nevertheless, 'Concord' holds a venerable place in American viticulture. After nearly one hundred fifty years, it is still propagated and planted from coast to coast, and its end in nowhere near. Until 'Concord' appeared, grape growing in eastern North America had been difficult at best. Bull, by developing 'Concord', proved that native species could be employed in viticulture, and that viticulture could be made profitable in eastern North America. 'Concord' was only one step toward the improvement of the grape, but it was a crucial step. Bull's success prompted many further efforts to adapt viticulture to the trying demands of the New World.

**Note**

Because this article is an early version of part of a larger, ongoing project centered on the history of the 'Concord' grape, some of the interpretations and conclusions must remain tentative.

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# Laura Dwight's Magnolias

*Judith Leet*

**Determined to halt the decline of her beloved Back Bay neighborhood, civic activist Laura Dwight launched a community-wide drive to plant hundreds of saucer magnolias along Boston's elegant Commonwealth Avenue during the early 1960s**

Laura Dwight's idea was to make Boston's Back Bay, particularly Commonwealth Avenue, look as beautiful in spring as Washington's Tidal Basin—a great public welcome to the new season. She foresaw the effect of having the whole avenue bloom at once with a row of the most floriferous of trees, the saucer magnolia—its showy flowers a rich pink at the base and a creamy white at the petal tips. And the trees were to be democratically planted in the front yard of everyone's nineteenth century Victorian brownstone.

In the 1960s, Miss Dwight, a resident of the Back Bay who was then in her sixties, conceived of such a scheme for beautifying Commonwealth Avenue and had the energy and persuasiveness to carry it out. One contemporary who knew Dwight in gardening and horticultural circles describes her as a very appealing person: "It was like being pushed by a fairy or an elf; you couldn't say no to her. I'm sure that's why there are so many magnolias on Commonwealth Avenue." A younger friend remembers her as "forceful, even pushy—but pushy in the right direction."

From her apartment on Commonwealth Avenue, Laura Dwight observed the once-elegant Back Bay section of Boston deteriorating all around her, and she became aroused, even irate at the apathy and detachment of local residents. Hoping to help reverse this downward trend, she devoted her considerable energies to neighborhood-improvement projects and became an early member and later an officer of the Neighborhood Association of the Back Bay (NABB), a group working to restore stability to the area.

An activist by nature, she first involved herself in small-scale beautification projects—organizing house tours and garden tours, and front- and back-yard contests to award prizes to those who had created the most appealing city gardens (often judged by officials from the Massachusetts Horticultural Society). Such events encouraged residents to clean up, plant, and care for their often overlooked yards. Although she at this point had no garden of her own, she sponsored most of these events and signed up other sponsors, inviting them to a formal tea, often catered, at her comfortable apartment, filled with paintings, antiques, and mementoes of her forebears.

With the hearty approval of the NABB, Laura Dwight carried out her first large-scale street-planting project in the fall of 1963. She personally rang doorbells and convinced owners—some of them friends, others total strangers—that it was a good idea to plant one or several magnolia trees in their front yards

*Portrait of Laura Dwight by Bradford Bachrach. Courtesy of Anne H. Jennings.*

and to participate in a collective, street-long display. She offered to provide free labor to plant the trees on a designated weekend, the material to enrich the soil, and a young tree, which would be delivered to the door. The resident only had to agree to the idea in principle and to pay a nominal sum for the young tree.

Although some absentee landlords could not be located, a majority of those approached agreed to participate. The residents at that time were far from a homogeneous group—students, young married couples, transients in rooming houses, administrators of junior colleges, and small-business people. But the idea had a logic and appeal of its own, and Laura Dwight motivated many to participate. One supporter of the planting, for example, was Emil "Sax" Rohmer, involved in real estate in the Back Bay, who donated two magnolias to be planted at 3 Commonwealth Avenue, a building rented by the French consulate and owned by Oliver S. Ames. Esther Ames, Oliver's wife, recalls planting a magnolia at 20 Gloucester Street and remembers that everyone in the neighborhood had heard about the street planting, either through the NABB or by word of mouth.

Much discussion took place in meetings over the merits of *Magnolia ×soulangiana* versus those of *Magnolia stellata* for the Boston climate; some argued against the early magnolias altogether, nominating other species that would be less susceptible to an early-spring frost (the white magnolia petals quickly turning a dismal brown); some favored later-blooming native dogwoods (*Cornus florida*); others debated which species would be better for sunny and which for shady locations. A compromise was reached, but Laura Dwight's idea of the uniform planting of the colorful, large-petaled saucer magnolia (*Magnolia ×soulangiana*) prevailed for the sunny (north) side of Commonwealth.

Eyewitnesses recall two successive years of planting between 1963 and 1965: the first year saw the saucer magnolias installed on the sunny side of the street along with a few *Magnolia stellata*, the second year, dogwoods (*Cornus florida*) planted on the shady side. And, in retrospect, many would argue that the basic decision was correct: *Magnolia ×soulangiana* is a neater, more compact tree than the dogwoods, which have a looser, lighter habit and often a less exuberant display.

When asked about the project in 1981, Laura's sister, Frances Dwight, then in her eighties, wrote: "Laura had read somewhere that Boston was about as far north as the magnolias could be expected to pull through the winter." Laura Dwight had also admired the magnolias already well established and blooming profusely in front of a few Back Bay townhouses, such as the *Magnolia denudata* at 6 Commonwealth, the residence of Mrs. Montgomery Sears (now the Boston Center for Adult Education).

There was, in fact, even before Laura Dwight's campaign something of a tradition of planting trees in the Back Bay. A long-term resident recalls that the original owners, in early summer, would place white dust covers over the furniture and depart for their country homes. Therefore, they deliberately planted in the small front yards of their city houses a tree that would come into flower while they were still at home to benefit from it.

Witnesses of the street plantings in the 1960s give Laura Dwight full credit as the moving force behind the project: she was the one who made arrangements with nurseries to truck in plants; she arranged for MIT students living in a fraternity house on Commonwealth Avenue to donate manpower; she made sure that seedling trees were given a proper start with loam, peat moss, mulch, watering (since the Back Bay was gravel-filled land, this improvement of the soil was prudent to ensure long-term success).

An attractive price was set: eight dollars bought a smallish tree for those who were willing to wait for results (and even a young

*The magnolias planted on Commonwealth Avenue as a result of Laura Dwight's campaign were by no means the first to be planted there. This* Magnolia denudata, *which stood on the Sarah G. Sears estate, was photographed in 1933 by John C. Marr. From the Archives of the Arnold Arboretum.*

saucer magnolia produces a few choice blooms); those who wanted quicker results bought a larger tree at twenty dollars. According to Frances Dwight, "residents' gardeners were brought from as far away as Beverly and Duxbury to help the student workers. Laura found it very time-consuming, a great deal of detail with owners and nurserymen was involved."

The late Mrs. Edwin Webster, a venerable resident of Back Bay, with a townhouse on the corner of Commonwealth and Dartmouth, who always kept a colorful display of freshly blooming flowers in her conservatory for passersby to enjoy, also agreed to participate in the collective street planting. Her gardeners, imported from her estate in Chestnut Hill, planted three sizeable specimens of *Magnolia* ×*soulangiana* that now take their place with the others planted by Laura Dwight—all now forming a long row of thriving, mature trees on Commonwealth Avenue.

Although many people have the impression that "hundreds" of trees make up the display, a recent survey shows that there are roughly as few as five and as many as fifteen magnolias on the sunny side of each long block of Commonwealth Avenue. In thrifty Boston fashion, the planting uses rather limited resources to make an effective, even dazzling, display. And twenty-five years after the planting, the late-April appearance of the pure-white and rich-pink blooms is one of the memorable spring sights in Boston—especially recommended for a leisurely walk on a balmy spring evening.

**The Dwight Family**

Although many committee members assumed she was a native Bostonian because she participated so actively in many community projects, Laura Dwight was neither born nor raised in Boston and lived in the Back Bay only during her later years. Her roots did extend back nine generations in Massachusetts, however, to John Dwight, who settled in Dedham in 1634. (Twenty-eight of John Dwight's descendants had attended Yale by 1860, and one of these, Timothy Dwight, became president of Yale in 1795.)

Laura Dwight was born in Detroit, Michigan, in 1899, one of two daughters of Percy Dwight and Grace Buel Dwight. Colonel Percy Dwight was at one time president of Wilson Body Company, makers of wagon and carriage bodies, a prosperous company founded by his father, who owned considerable real estate in Detroit and Jackson, Michigan. (The two eldest Fisher brothers, who later founded the Fisher Body Company and became principal stockholders in General Motors, worked as young men for Percy Dwight.) The family summered in Williamstown, Massachusetts, on a large estate called Hillside House (now torn down), with well groomed gardens, memorable roses, riding stables, and dogs—including a decorated German shepherd who had served his country as a message dispatcher in World War I.

The two daughters, Laura and Frances, were educated by a German governess (both sisters could recite German poetry—Schiller, Goethe, Heine—all their lives) and traveled extensively in Europe, a then common educational path for daughters of prominent families. Neither sister married, and they were referred to, in the polite phrase of the period, as "maiden ladies." Both of independent means, Laura devoted herself as a volunteer to Republican politics and women's clubs; Frances was an accomplished horsewoman, amateur painter, and supporter of animal welfare, particularly interested in saving whales and seals.

Accustomed to many servants, two or three in help, the Dwight sisters never learned the practical survival skills of cooking or homemaking. Visitors to their Boston apartment noted that neither sister was able to make their meals, and that even making a simple sandwich posed a challenge. A much younger friend recalled that the Dwights' teas were legendary, especially when the sisters

were advancing in years. "Usually when you are invited to tea, especially in a proper Boston home, you expect tea and something in it. At Laura's, you might or might not get something to eat—and you might not even get the tea." Members of her garden club agree that Laura was clearly accustomed to someone else's making the tea for her. The many Boston ladies whom she mobilized respected her ability to get results—while shaking their heads in fond disbelief at her minimal skills at entertaining.

Encouraged by the enthusiasm generated by the street plantings, and planning to do more such projects, Laura Dwight organized and became first president of the Back Bay Garden Club in 1967. The fledgling club was soon asked to exhibit at the prestigious annual flower show of the Massachusetts Horticultural Society—to face the stiff competition of long-established clubs. The new group developed plans for a small urban garden, incorporating a real, albeit tiny, Japanese car into the exhibit, displayed behind a trellised carport, with many apricot tulips, grape hyacinths, a flowering dogwood, and brickwork to enhance the setting. After some very active disagreements among members about how to carry out the plans—some threatened to resign on the spot—Laura Dwight diplomatically calmed everyone. To the members' unfeigned surprise, the exhibit was judged a skillful solution to the design problem, was photographed for the *Boston Globe*, and won a blue ribbon.

*Laura Dwight photographed in the Back Bay during a neighborhood backyard-garden contest.*

Some of her motivation for neighborhood improvement might have come from personal experience. After tripping on the broken bricks of a Boston sidewalk and breaking her leg, she sued the City of Boston for damages. "She was a gutsy lady to fight City Hall," her cousin Douglas Campbell remarked, "but she won the $4,000 she sued for."

Her sense of community involved her, as a founding member, in the Friends of the Public Garden—to aid in the rescue of the once well manicured Boston park that had fallen into weedy neglect. And her early interest in the environment—at a time when very few people had even heard of "ecology"—led her to found the "Order of Preservation of Clean Air," or, as members called it, "Citizens for Clean Air," one of her less successful ventures. When the group decided to disband, a surplus of $300 in the treasury caused some amused consternation among the members: no one knew how to dispose of the surplus in a way that would contribute to cleaning the air. One of the members and a close friend, Irene Pitz, remembers Laura Dwight fondly: "Laura was always interested in 'good works.'"

Among these good works, she was Program Chairman for the Women's City Club, arranging for guest speakers; a director of the Gibson House, a Victorian museum on Beacon Street; and a member of the Colonial Dames and of the Junior League. Like all other Boston ladies, Laura Dwight devotedly attended the Boston Symphony Orchestra's Friday afternoon concerts.

In addition to their distinguished Dwight lineage, Laura and Frances Dwight were also ninth in descent from one John Mason, born in England in 1601, who settled in Dorchester, Massachusetts, in the early seventeenth century. The two sisters were the last surviving members of their immediate family. Toward the end of their lives, each sister expressed in private, to the same family advisor, her worry about dying and leaving the other sister to cope alone. The two elderly sisters died within five days of each other, in 1983.

**The Species Selected**

Laura Dwight and her committee selected *Magnolia* × *soulangiana* for their street planting, the first magnolia hybrid and one that became immediately popular after its development in the 1820s, the result of a cross between two long-cultivated Asian species. Experts believe that the oldest magnolia fossils are on the order of one hundred million years old, making *Magnolia* one of the oldest genera of flowering plants. Since these fossils are very similar to species still in existence, the plant is thought to have undergone only relatively minor evolutionary change over the millennia; magnolias exhibit one of the simplest types of flowering structures, with sepals and petals that are similar, overlapping in whorls of three; with stamens arranged in spirals; and with single, unfused pistils.

Over the ages, magnolias were mainly pollinated by beetles (*Nitidulidæ* spp.), which also underwent little adaptation over inconceivably large spans of time. Together, the magnolia and its beetle pollinators have survived the ages. The beetle is thought to penetrate the closed bud, crawling between the tight petals and entering the flower chamber to pollinate the receptive stigma—the stamens shedding their pollen after the flower bud opens and the stigmas have been fertilized. This sequential ripening of the male and female parts of a flower prevents self-fertilization from taking place.

Producing the largest flowers of any woody plants in the Temperate Zone (*Magnolia macrophylla*), magnolias have undoubtedly been admired by human beings since prehistory. Evidence suggests that the Chinese cultivated flowering magnolias at least as early as A.D. 600—or fourteen hundred years ago; by the fourteenth century, Chinese artists were decorating porcelain ware and other art objects with accurate and aesthetic renderings of the magnolia.

The Asian magnolias have the attribute of blooming in earliest spring on bare branches—before any leaves cover or compete with the blooms. Known to be among the most skillful of gardeners, the Chinese, and later the Japanese, learned how to graft, propagate, and force magnolias, selecting the aesthetically most desirable plants for temple and palace gardens. The Asian species introduced into cultivation were selected and improved over the centuries, while the plants remaining in the wild became increasingly scarce and limited in their range.

By contrast, the American magnolias were uncultivated trees surviving without human assistance in the wilderness. The flowers of some species, such as *Magnolia tripetala*, appear more disheveled and less elegantly formed than their more pampered and highly selected Asian relatives. And even more significantly, the American species bloom later—after the leaves have sprouted—and so the flowers are less conspicuous than those of the precocious Asian magnolias, which bloom on bare branches.

Europeans, lacking any native species of magnolia (all were wiped out by the last ice age), were delighted with their first magnolias, introduced from the New World (*Magnolia virginiana* in 1688, and later *Magnolia grandiflora*) but quickly lost interest in the American species after the first Asian magnolias were imported in the 1790s (*Magnolia liliiflora* and *Magnolia denudata*). Thirty years after these Asian introductions, a cavalry officer returning from the Napoleonic

wars conceived the idea of developing hybrids from them, trying to achieve the best qualities of each parent.

After Waterloo in 1815, Etienne Soulange-Bodin concluded that fighting wars was a worthless task, that both he and his opponents would have done better to have cultivated their own gardens rather than to have destroyed those of others. He vowed to devote his remaining energies to horticulture, and in the 1820s crossed two of the Asian magnolias, the white, tree-like *Magnolia denudata*, with the purple, shrubbier, later-flowering *Magnolia liliiflora*, to achieve an extravagantly beautiful hybrid, the *Magnolia* ×*soulangiana*, an immediate success and now one of the most popular magnolias planted in the United States. The great French botanical artist, Pierre-Joseph Redouté, speedily painted a single closed bloom for his *Choix des plus belles fleurs* (1827–1833).

**The Siting on Commonwealth Avenue**

Before Commonwealth Avenue was first planned as a major city avenue in the 1850s, the land west of the Public Garden (from what is now Arlington Street to Massachusetts Avenue and beyond to Kenmore Square) was a mudflat, filled and drained by each salty ocean tide moving up the Charles River. In the 1820s the Boston and Roxbury Corporation attempted to supply power to various proposed commercial mills by constructing a dam across the Back Bay a mile and a half long, built along what is now Beacon Street and running parallel to the Charles River. But the Back Bay, when completely drained, produced unpleasant natural odors on the mudflats that were exacerbated by the odors from city sewerage also funneled into the area. Many of the proposed mills were built along the Merrimack rather than beside the Charles.

As complaints about health and sanitation grew—as well as the need for more residential property close to the city—the city fathers agreed, in a merger of state, city, and private interests, to begin the task of filling in the Back Bay, a major engineering project of the period. Since no funds had been allotted for payments for the work, the wily fathers agreed to pay the construction engineers, Goss and Munson, with some of the valuable houselots they would produce with their fill. Utilizing the recently invented steam shovel and railroad, engineers excavated gravel from a site in nearby Needham and brought it nine miles by rail to the Back Bay. In the initial phase starting in 1859, land was filled on average at a rate of almost two large houselots a day; four thirty-five-car trains made twenty-five trips a day. Although filling went on through the late 1860s and 1870s, the final phase was not completed until 1882.

Planners had laid out the area in what was, compared to jumbled colonial Boston, an orderly geometric grid, with five streets to run parallel to the Charles River and smaller cross streets to bear names in alphabetical sequence (Arlington, Berkeley, Clarendon, Dartmouth, and so on). The centerpiece of the scheme, Commonwealth Avenue, was to be two hundred feet wide, with a center mall, or park, one hundred feet in width, for strolling, and each house was to be set back twenty feet from the sidewalk, allowing for small front yards.[1] Arthur Gilman, architect of the Arlington Street Church, is credited with the overall planning of the grid of the Back Bay, modeled on a smaller scale after the Parisian taste for grand boulevards; George Snell and landscape designers Copeland and Cleveland probably contributed to the plans for Commonwealth Avenue.

In the early years of Commonwealth Avenue, private townhouses were built at rather random intervals; historical photographs reveal clusters of brownstones separated at irregular intervals by vacant lots. In one photograph, taken around 1875, Commonwealth Avenue remains incomplete between Clarendon and Dartmouth streets: several lots toward Dartmouth and one in mid-block await houses. And the generally bleak

*Commonwealth Avenue between Exeter and Dartmouth streets during the 1880s. Photograph courtesy of the Bostonian Society.*

appearance of the street is primarily due to the absence of trees and shrubs. Over several decades all the vacant lots—through to Massachusetts Avenue—were slowly filled in—more attractively by private owners and less so by developers. During the 1880s, Frederick Law Olmsted laid plans for diverting and draining the Muddy River, a scheme that allowed the filling in of Commonwealth Avenue to continue toward Kenmore Square and Brookline Village. By the 1880s, Dartmouth and Exeter streets' empty lots were completely filled in by adjoining brownstones, each varied but sharing many common architectural details. Gradually, these private residences emerged as an American interpretation of French-inspired (Second Empire) townhouses—but overall a relatively homogeneous architectural composition. To Walter Muir Whitehill's eye, "the Back Bay is still the handsomest and most consistent example of American architecture of the second half of the nineteenth century now existing in the United States."

Those Bostonians who first bought lots and built imposing five-story townhouses were from among the most distinguished of local families—and lived in a now-lost style of many servants, much leisure, and a close-knit social community. As more of the Back Bay was filled in, these citizens surrounded themselves with the monuments to their way of life: Symphony Hall, Horticultural Hall, the Museum of Fine Arts, Harvard Medical

School, the Museum of Natural History, and numerous churches, private clubs, and schools.

But beginning in the Depression, and certainly by the end of World War Two, the Back Bay had lost its fashionable cachet; most of the original families had sold the brownstones and moved out of the city—to properties with more land and fresh air. Many small colleges acquired the former private residences for dormitories and classrooms; the Back Bay streets were overrun with students. The now too large, elaborately paneled houses, already broken up into apartments, were further divided into rooms for transients. The once tidy Public Garden was no longer kept up but was marred by broken benches, trash, unkempt flower beds. It was during the 1960s, a low point in the life of the area, that public-spirited Bostonians pulled together to resuscitate the Back Bay with an array of new, private organizations whose purpose was to improve and beautify the city. Among them, on the front lines, serving on many of the boards as a volunteer, was Laura Dwight. The magnolias on Commonwealth Avenue were just one of her many projects—but one that remains a living memorial to her and one that will continue to bring refreshment and pleasure to Bostonians for many springs to come.

**Endnote**

1 It was this small, front-yard space that allowed Laura Dwight's planting project to be successful. Peter Del Tredici of the Arnold Arboretum ascribes the survival of the magnolias to the fact that they were not planted directly on the street but were enclosed in their protected fenced-in gardens. Magnolias, once they have been established for a year or two, are tough and hardy and require little care, not even pruning, except for the removing of dead branches—qualities that make them appealing to the busy city dweller, who often knows little about pruning.

**Acknowledgments**

Esther Heins began researching this article in 1981, when Frances Dwight was still living at 250 Beacon Street and Laura Dwight was in Sherrill House, a nursing home in Boston, after having suffered a severe stroke. She also spoke to Mrs. Charles Howard, whose late husband was president of the Neighborhood Association of the Back Bay when the street plantings took place.

I am most grateful to and would like to thank those who willingly spent time stirring their memories over events that occurred over twenty-five years ago: Irene Pitz, Mrs. R. A. Sawyer, Esther and Oliver Ames, Elizabeth Lay, Ann Twaddle, Sally Mead, Douglas Campbell, Liz Ann Chapin, Patsy Boyce Sidlowsky, Anne Jennings, Laura Dwight Lewis, Donald Dwight, Henry Flynt, Lyman Parsons, Daniel Needham, Polly Wakefield, and the Reverend Schuyler Jenkins.

I would be pleased to hear from anyone who recalls additional information about the plantings or about Laura Dwight.

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# The Arnold Arboretum: An Historic Park Partnership

*Sheila Connor*

**Just over a century ago—through sheer force of willpower—Charles Sprague Sargent clinched a unique partnership that for the next 895 years secures the Arnold Arboretum to all the people of Boston**

How often is a stroll through a beautiful city park also a tour of a university research facility? Not often, but if one is strolling through the Arnold Arboretum, it is. Designed for use by scientists and laity for the study and enjoyment of botany and horticulture and created with private funds, the Arnold Arboretum broke with tradition. For, although the late nineteenth century was a harvest time for museums, no university botanic garden or arboretum had yet been planned with the public in mind.

Following tradition, too, was the design of public pleasure grounds: the prevailing "picturesque theory" stressed naturalistic design, avoiding the use of specimen trees or plantings. No tree was selected to display the details of its bark, leaves, flowers, or fruit. The botanist, however, needed to focus on just these specifics for study and comparison. The challenge of meeting, in a single setting, the divergent needs and expectations of botanists and the general public alike required both an exceptional designer and "creative financing."

Charles Sprague Sargent, a well connected Boston Brahmin and the Arboretum's first director, was just the man to find both. He convinced Frederick Law Olmsted, America's leading landscape architect, to create a design that would be naturalistic and that yet would arrange plants according to a specific taxonomic scheme. Then, in order to serve the dual purpose he believed the Arboretum would have, Sargent had to persuade the City of Boston and Harvard College to undertake a joint financial venture. His motives were not entirely altruistic: he needed additional money to build and maintain the Arboretum.

The idea of shared financing occurred to Sargent as early as 1874, when the city began to hold hearings on a public park system. Although this was four years before Olmsted agreed to work on either the Arboretum or the park system, Sargent outlined his ideas: "It has occurred to me that an arrangement could be made by which the ground could be handed over to the City of Boston," he wrote, "on the condition that the City spend a certain sum of money laying out the grounds and agree to leave the plantings in my hands. . . ." Evidently, Olmsted liked the idea, for he adopted and championed it.

By 1880 he would write to Charles Eliot Norton, professor of fine arts at Harvard, about his frustration with the Arboretum project. "The scheme is that the city shall lease the condemned . . . land to the college at a nominal rent for a thousand years and the college shall establish and maintain the arboretum. . . . This is the whole of the scheme as I would have it. I am sure that it is a capital bargain for both parties. . . . The sole difficulty is that nobody (feeling free to act) is alive to the opportunity. I have been shaking Dalton [chairman of the Park Commission] and

*A view of Bussey Brook in the Arnold Arboretum, taken in 1949 by Professor Karl Sax, who was the Arboretum's Director at the time. Photograph from the Archives of the Arnold Arboretum.*

Sargent and have tried to stir up Mr. Pulsifer at the *Herald*. . . ." Perhaps Sargent and Olmsted recognized a political advantage in its being Olmsted's idea, for Sargent's annual report for 1881 credits Olmsted with the plan.

The negotiations lasted four years. The Arboretum's nurseries were bursting at the seams. Sargent could not begin to implement Olmsted's design without commitment from the city. The proposition finally came to a vote by the City Council on October 13, 1882, after lengthy debate, but it failed to pass, receiving only 36 of the required 59 votes. Proponents of the Arboretum on the Council quickly moved to set up an Arboretum Committee, and Sargent and Olmsted stepped up their efforts to rally support. A public-relations drive was launched that had the "Arboretum Question" debated in the city's newspapers. November's headlines read: "**VOICES OF THE PEOPLE IN ITS FAVOR—THROWING AWAY A BARGAIN**," "**THE ARBORETUM'S VALUE TO BOSTON**," "**AN EDUCATIONAL PARK AT A BARGAIN**." Sargent pulled out all stops with the circulation of a petition, to which 1,305 of the

most powerful people added their signatures. If Olmsted had failed to shake up someone at the *Herald*, the petition certainly succeeded. A story in its issue of December 1 read, in part:

> The petition to the city council in favor of the Arnold Arboretum is probably the most influential ever received by that body. It includes almost all of the large taxpayers of Boston.... Nearly all of the prominent citizens are there, including ex-mayors and ex-governors.... The petition would be a prize to a collector of autographs.

The campaign worked. On December 27, 1882, terms similar to those Sargent had proposed eight years earlier were agreed upon. It took another year to work out the details, but on December 20, 1883, a thousand-year lease was signed, and an unprecedented agreement between the City of Boston and Harvard College began. As the earliest of Boston's "Park Partners," the Arboretum has had a long and celebrated history, and both the City of Boston and Harvard recognize the wisdom of this early arrangement, which is now in its 106th year.

Under the terms of the agreement, the Arboretum became part of the City of Boston's park system. The city was to be responsible for the construction and ongoing maintenance of the driveways and boundary fences throughout the Arboretum. Harvard University was to collect the plants, design the Arboretum, and maintain the collections and programs.

The Arboretum has been consistently well maintained since its beginning, and it stands out as the centerpiece of the famed Emerald Necklace. Its original master plan has been maintained to this day, although there is substantial restoration work to be done on the Arboretum's roads, walkways, drinking fountains, and benches. Happily, the Parks and Recreation Department is beginning a long-term program of capital repairs that one day will return the Arboretum to its former pristine state. Funds from the Olmsted Restoration Project will also contribute substantially to this effort when they become available.

The Arnold Arboretum's fame as a botanical garden has spread worldwide, attracting scientists and students from around the globe to study its vast collections. At the same time, hundreds of thousands of people enjoy the Arboretum as a scenic and restful escape from the ever-increasing congestion of Boston. It is a rare jewel created through the inspired vision of people who believed in the value of urban open space, and who understand the ever more valuable role of botany in modern life.

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# Franklin Park, Boston's "Central" Park[1]

*Richard Heath*

**The embodiment of Frederick Law Olmsted's agrarian ideal, Franklin Park vies with the Arnold Arboretum as the centerpiece of the Boston park system**

Since the 1890s, Franklin Park has been Boston's central park, the hub of an enormous system of parks stretching from the Back Bay to the newly annexed towns of Dorchester, Roxbury, and Jamaica Plain. Frederick Law Olmsted, advising the Boston Park Commissioners, recognized that Boston's growth would require large open spaces in which citizens could relax and engage in recreation. In his *Notes on the Plan of Franklin Park* (1886), Olmsted described Franklin Park as having a square mile of relaxing scenery that would ease the harried city dweller.

Because it was intended to be an ample country park, it was placed, not in the middle of the city, but southwest of City Hall, approximately four miles from Boston Common, in what was then an undeveloped part of the city. Indeed, all of the sites considered for the Park lay four to five miles from the central-business, government, and residential core of Boston, which had long been built up. Placing the new park outside of the center city would perfect Olmsted's theory that the "agrarian ideal" should be brought to the city.

The new park was to be—or appear to be—as little built-up as possible, with many convenient footpaths meandering through it. (Of Olmsted's parks, only the Arnold Arboretum and Mont Royal Park, in Montreal, have fewer structures than Franklin Park.) A circuit drive for carriages would lead into the parkway, which would connect the other parks in the Olmsted system and, by a meandering parkway, lead to the inner city.

*A bucolic view across Scarborough Pond in Franklin Park. This and the following two scenes of Franklin Park by Richard Howard are used through the courtesy of the Boston Foundation and the Boston GreenSpace Alliance.*

[1] Excerpted and adapted from the first chapter of *Franklin Park: A Century's Appraisal. Franklin Park Coalition Bulletin* (1985).

Thus, even while driving to the park, one would never have to leave parkland.

The 500 acres of Franklin Park (originally there were 527 acres) were purchased between 1881 and 1883, and construction began early in the summer of 1885. Streetcar lines were just beginning to move out to the edge of the park, and subdivisions were begun in adjacent blocks even as the park was being constructed. The principal reason for annexing whole towns, such as Dorchester, Roxbury, and West Roxbury, had been to provide living space for the center city.

Franklin Park's boundaries were drawn so as to lie along main thoroughfares, near existing transportation lines; its entrances, carefully planned to open the park to as many people as possible, as conveniently as possible, were built to coincide with transportation. Two thoroughfares today are major routes into the city, and the transportation lines are important trunk lines for the metropolitan Boston public-transit system.

*A Boston Park Ranger teaches the basics of fishing to a youngster in Franklin Park. The park's square mile of natural landscape brings Olmsted's agrarian ideal to city children and adults alike.*

Franklin Park was designed for many uses, with five distinct landscaping features: a 100-acre woodland, a 200-acre meadow, a 7-acre artificial pond, a formal entranceway, and a 30-acre playing field, all interconnected by walks and drives, with three overlooks. Although primarily designed for passive relaxation—in keeping with the times—it had a carefully landscaped playing field in recognition that active sports were becoming more important in Americans' leisure life. The playing field was segregated from the passive parks by landscaping techniques so that the two groups of people—those engaged in sports and those engaged in less vigorous activities—would not interfere with one another. To shut out the city completely, a thick screen of trees, some on earthen berms, framed the entire square-mile park.

Structures were limited to one wood and three stone shelters, three stone bridges, a stone arch that carried foot traffic under Circuit Drive, and several flights of stone-slab steps. This left the park completely open to the imagination of the visitors. There were no restrictions on the spaces within the park except for the playing field and the acre or two set aside for lawn tennis in Ellicott Dale (which today is a baseball diamond). In no other park had Olmsted been able to create a truly *country* effect. Fortunately, Franklin Park remains to this day uncluttered, especially the lovely broad meadow.

Learning from Central Park—where from almost the first day people had begun putting up statues—Olmsted planned a space for just this type of commemorative sculpture in the Greeting, the formal entranceway. The Mall in Central Park and the Concert Grove in Brooklyn's Prospect Park were Olmsted's

*Catching leaves in Franklin Park.*

earliest responses to this impulse, but Franklin Park had far more space for statuary, concerts, and large group activities than either of them, and that was exactly the original purpose of the Greeting. A long, broad berm to the south was thickly planted with oaks and beeches to separate the Greeting from the rest of the more passive parkland. Even while Franklin Park was under construction, public pressure had caused the landscape architects to revise their design by adding a pond, which they placed at the southwestern corner of the Park.

Franklin Park was the last urban park that Frederick Law Olmsted designed (he retired in 1895, when the park was nearly finished). It completes the theories of landscape design first put into practice in Central Park in 1858 and in some ways perfects them, particularly in the careful use of the site for the enjoyment of thousands of people, at the same time providing solitude for two or three.

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Richard Heath is the former director of the Franklin Park Coalition.

# "Full Foliage and Fine Growth": An Overview of Street-Tree Planting in Boston

*Phyllis Andersen*

**With the benefit of the experience it has gained over the past century and a half, Boston is well poised now to exploit the aesthetic and community-unifying qualities of street-tree plantings**

Boston is a green city. The great Olmsted park system, its parkways, and its neighborhood parks and squares are the legacy of enlightened nineteenth century planners and city officials. Despite inappropriate intrusions, changing physical conditions, different patterns of use, damage, and neglect, the integrity of the system, if not its details, remains reasonably intact. Both the Commonwealth of Massachusetts and the City of Boston have recognized the value of this unique system of open space and have created programs to finance restoration of the parks, to reestablish them as a major component of the special quality of life in Boston. But a vital link in the green-space network—the planting of trees along the city's streets—has not withstood the complex forces of growth and change. The continuous avenue plantings of earlier days are now fragmented, and the strong visual impact of tree-lined streets has been lost in many parts of the city. What remains of earlier plantings are individual specimens of great horticultural and historic interest, but these are disconnected from one another and are often isolated from the community as a whole. As we reclaim park spaces it is important also to recognize the value of street-tree plantings for their environmental benefits, for their aesthetic and humanizing appeal, and for their unique ability to define and link neighborhoods across the city.

Tree-lined streets scaled to human activity persist as a standard for urban life. While this image may derive from small-town ideals, it now serves as a protective device against the overwhelming scale and continuous change of modern urban life. The streets of Boston's early Shawmut Peninsula were not lined with trees. The narrow street pattern was based on topographic limitations and on the English rural village model known to the first residents.

The street planting as we know it today originated during the great land-filling and building period of the mid- to late nineteenth century. The major impetus for that period of planting came from the grid, that traditional urban-planning device. The laying out of streets at right angles to one another created long, uninterrupted vistas and gave designers the opportunity to soften and enrich those vistas with continuous, regularly spaced tree plantings.

### Commonwealth Avenue and the Back Bay

The full flowering of the grid format is seen best in Arthur Gilman's plan for Boston's Back Bay and its axial boulevard, Commonwealth Avenue. Based on the new boulevard

schemes resulting from Haussmann's redesign of Paris in the mid-1800s, Commonwealth Avenue is now a street defined both by its formal tree planting and by its controlled building façades. To the credit of its early supporters and, perhaps, to the bemusement of its current protectors, Commonwealth Avenue has become a paradigm of elegant, sophisticated urban life.

In 1880 Charles Dalton, Chairman of the Board of Park Commissioners, asked Frederick Law Olmsted and Charles Sprague Sargent to develop a planting plan for Gilman's boulevard. Their plan, based on the need for a dignified vista and for responsible planting standards, recommended a double row of a single species. City officials overruled them, however, basing their decision on the need for short-term effect, and the Commonwealth Avenue Mall was planted with a row of four trees and a mixed planting of American, English, and European elms. The crowded conditions predicted by Olmsted and Sargent quickly prevailed, but unforeseen and more devastating was Dutch elm disease, which has progressively killed most of the original planting.

To break the monoculture that exacerbated this problem, a dedicated private group has replanted Commonwealth Avenue with a variety of species. Elm varieties thought to be disease resistant were used first; when these proved unreliable, zelkovas, maples, sweet gums, and green ashes were introduced. The resulting mixed planting may be more horticulturally responsible, but it is not as aesthetically satisfying, failing as it does to provide the dignified vista so valued by Sargent and Olmsted. After years of being viewed as a neighborhood street, the Commonwealth Avenue Mall has become a focal point for visitors to the city. There is now a clear need for the city to develop a visual policy to guide future planting on the Mall. In the last few years there has been an enormous resurgence

*Commonwealth Avenue between Exeter and Dartmouth streets during the 1880s. Photograph courtesy of the Bostonian Society.*

of interest in boulevard restoration and design that has, in turn, stimulated interest in formal tree-planting techniques. Commonwealth Avenue is looked to as a model for both urban designers and developers who seek to impart a sophisticated, expansive image to their projects.

Despite the problems of disease and overcrowding, the one hundred-foot-wide planting strip of the Commonwealth Avenue Mall has sustained tree growth for over a century. Other street plantings in the Back Bay relegated to tree pits have not fared so well. Lower Beacon Street, for example, had a major planting of little-leaf lindens early this century. Very few specimens remain. On the other hand, Beacon Street, as it enters Brookline, still benefits from the road layout designed by Olmsted, which includes a deep planting strip that still supports mature shade trees. Many of the London plane trees planted some years ago on Boylston Street have been destroyed or seriously damaged. Current plans

to transform this important commercial street into a Champs Élysées type of boulevard offer the possibility for a very significant tree-planting project for the city. The wide sidewalks offer a unique opportunity to plant a double row of trees in some locations, to install continuous tree pits in others.

The layout of the South End followed that of the Back Bay, and planners for the city used the grid here as well, albeit more modestly. Differing in a number of ways from the layout of Back Bay, that for the South End introduced the English device of laying out streets around a residential square, or park, and of eliminating street-side planting so as not to obscure views of the square from inside the houses. These small parks are still viable and can best be seen at Union Park and Rutland Square. They hold to the English tradition of the informal grouping of horticulturally interesting trees and shrubs.

Several years ago Columbus Avenue, designed as one of the major axial streets of the South End, underwent a major streetscape-improvement program by the Boston Redevelopment Authority that included a major planting of red oaks to add dignity and scale to this mixed commercial and residential street.

Formal street planting moved into Boston neighborhoods first along commercial streets, then adjacent to institutions, and eventually to the smaller residential streets. Of perhaps some solace to municipal officials today, the care of the existing population has always been a frustrating and little-appreciated process.

**Past Frustrations and Successes**

In 1887 there were about 30,000 street trees in Boston, but their condition evoked the dismay of William Doogue, Superintendent of the Common and Public Grounds and newly appointed guardian of the street trees. Doogue commented that summer work crews sent out in 1887 to work on the street trees did little to improve and a great deal to harm them, cutting off the trees' roots and damaging their "nutritive apparatus." In those days trees were also damaged by underground coal-gas leaks and, most especially, by the gnawing habits of horses, who showed little respect for young plants. Doogue went on to note that at least one-sixth of the tree population was either dead or dying because of the neglect, and that time, money, and careful training would be required to replace them in "full foliage and fine growth."

The American elm was deemed by many in the nineteenth and early twentieth century to be the perfect city tree because of its unique arching habit and tolerance of urban conditions. It was heavily planted in Boston and most other major cities, and we are still suffering the loss of that magnificent tree. Other species were planted as well and were quite successful. Asa Gray, writing in 1881 on the native vegetation of the Boston peninsula, commented that a number of species imported from Europe had quickly adapted to conditions on Boston's streets. Gray makes special note of the Norway maple, the littleleaf linden, and the horsechestnut.

Tracing the types of professionals responsible for planting street trees reveals the shifting roles of professionals in urban planning. The great avenues of Europe were laid out and supervised by architects and engineers—Baron Haussmann, Jean Charles Alphand, John Nash. They participated in very specific ways in the placement of trees and the selection of species. The highest value in this process was the artistic arrangement of the plantings. In Boston, after architects and engineers had laid out streets and prescribed planting areas, municipal employees with a variety of backgrounds and skills would be called upon to maintain plantings. At the turn of the century a very significant state law organized shade-tree care on a municipal level. In 1899, the Massachusetts legislature passed an "act to codify and amend the laws relative to the preservation of trees." It man-

dated the appointment of a tree warden for every city and town in the Commonwealth. The first law of its kind in the country, it indicated the high value that the Commonwealth of Massachusetts placed on its shade trees. Today, the complexity of planting and maintaining trees requires a team: a landscape architect, an arborist-horticulturist, a soil specialist, and, perhaps, an engineer.

**Planting for the Future**

As we look to the future, several issues need to be fully and thoughtfully addressed as we seek to restore, enhance, and rethink our street plantings. The most visible issues to residents, aside from maintenance, are species selection and planting method. Some species, such as Norway maple and little-leaf linden, have been overplanted in Boston. As a result, their faults and limitations have been magnified. As Ernest Wilson, Keeper of the Arnold Arboretum, said of trees for street planting, "they must be veritable angels among trees." Like cornices and window mullions, trees become fashionable, and their use is dictated more by out-of-context taste than by an integration of design and horticultural requirements.

The honey locust, so admired by architects for its light, transparent foliage and by arborists for its resistance to urban stress, has had tremendous popularity over the past fifteen years. In addition to its extensive use as a street tree, it has become the ubiquitous urban-plaza tree. A number of South End streets have benefited from the planting of the honey locust, which creates a wonderful quality of dappled sunlight and does not obscure the details of the Victorian townhouses. The Callery pear, a favorite of arborists and utility-line companies because of its small, compact size, is being appropriately planted on many narrow streets of the city, including those of Beacon Hill. In other locations it cannot rival the mature effect of oaks, maples, or lindens. The green ash, another

*Tremont Street in the mid-1870s.* Top: *Looking eastward near Massachusetts Avenue, from top of the Chickering Building.* Bottom: *Looking westward from Dwight Street toward Montgomery Street and Montgomery Square. Photographs courtesy of the Massachusetts Historical Society.*

current favorite, is tough and dependable but essentially undistinguished as a specimen tree and looks best when planted in close groups. Other, more exotic species are doing well and should be used more often. The mature ginkgos on Tonawanda Street in Dorchester, native to China and remnants of a much larger planting, are horticulturally very significant and should have much needed preservation work. Young ginkgo plantings on Appleton Street in the South End and on Bowker Street in Government Center are very successful. The katsura, a very beautiful tree and also native to China, could also be used more widely in Boston. Investigations must also be made into enlarging the number of small, upright growing species used in Boston. The North End, Charlestown, and Beacon Hill all have very narrow streets where tree growth is severely restricted.

Street trees in Boston, as in every other major city, are traditionally planted in tree pits cut into the sidewalk. Continuing this tradition is important, but too many tree-pit plantings are failing to rely on this method exclusively. Restricted planting area, poor soil and drainage, lack of water, and excessive damage from cars and trucks have been repeatedly enumerated as the causes of poor survival rates. New methods of public tree planting must be used. Continuous planting strips—long, streetside planting areas where tree roots have room to spread in larger areas of soil are one solution. Off-street grove planting is another option. Many areas of this city are too narrow for planting. They create pedestrian hazards and impossible survival conditions for the trees. Tree planting on very narrow streets can only be reasonably viewed as temporary planting and probably should be done with private funds.

There is a whole body of state and municipal laws concerning the ownership and stewardship of public trees. Legally, the City of Boston and its designated agency, the Department of Parks and Recreation, has jurisdiction over street trees on public property. The Boston Parks Department has made a firm commitment to improve both the street-tree population of the city and the professional management of that population. But no major city in this country relies exclusively on city funding and city labor to plant and maintain public trees. Many private nonprofit and volunteer groups devoted to public street-tree planting and care have been organized and developed over the past twenty years. Friends of the Urban Forest in San Francisco and the New York City Street Tree Consortium have done significant work in those cities as cooperative partners with city government to fund and maintain new plantings and, most importantly, to highlight the value of trees to the city.

Trees are often seen as an end product of gentrification. Yet many cities have shown that community feeling and action can be initiated around tree planting as the beginning of a neighborhood-improvement process. Trees in Boston have a long tradition, but, as we have seen, tradition alone does not sustain trees. Trees must be valued, and their needs and idiosyncrasies must be understood. The maintenance and replenishment of out street trees must be accepted as a continuous process.

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Phyllis Andersen, a landscape design consultant, is executive director of the Shade Tree Advisory Committee for the City of Boston.

# "So Near the Metropolis"—Lynn Woods, a Sylvan Gem in an Urban Setting

*Elizabeth Hope Cushing*

**Having slowly and inexorably declined for the better part of a century, the City of Lynn's 2,300-acre Lynn Woods Reservation now seems due for a dramatic reversal of fortunes**

*Lynn Woods has served as an important source for municipal water and as a community recreation area for more than a century. But the woodland and water reservation of more than 2,000 acres has significance well beyond its value for the City of Lynn, Massachusetts. The story of the creation of this forest park and its reservoirs is intimately tied to the emergence of national trends in natural area conservation, regional landscape planning, recreation and American attitudes towards the wilderness. While the Woods have been neglected or abused for many years, the qualities that inspired the late nineteenth century citizens of Lynn to create this progressive municipal park still exist and merit careful nurture for future generations.*

——From *Historic Landscape Report, Lynn Woods, Lynn, Massachusetts.* Prepared for the Olmsted Historic Landscape Preservation Program, Department of Environmental Management, Commonwealth of Massachusetts. Boston: American and New England Studies Program, Boston University, 1986.

In 1985 the Massachusetts Legislature appropriated thirteen million dollars toward the restoration of twelve parks in Massachusetts that Frederick Law Olmsted designed. In doing so, the Legislature set in motion an ambitious and farsighted course of action intended, in part, to set a precedent for other states with Olmsted-designed parks, as well as to create a structure—the Olmsted Historic Landscape Preservation Program (a part of the Massachusetts Department of Environmental Management)—that would facilitate further restoration of Olmstedian and other important open spaces in Massachusetts. Among the cities chosen to receive funds, Lynn, Massachusetts, was awarded over two million dollars to restore two areas: High Rock, a three-acre park in the middle of the city, and the Lynn Woods Reservation, a tract of land at the outskirts of the metropolis covering approximately twenty-three hundred acres of undulating woodland and containing four bodies of water used as reservoirs by the City of Lynn.

Enormous historical significance is invariably attached to the early settlement of such Massachusetts towns as Hingham and Ipswich, Cambridge and Boston. Yet many towns, founded at very nearly the same time as they, have meandered into the twentieth century all but unknown beyond their own boundaries. Such a town is Lynn, Massachusetts. Situated some eleven miles northeast of the State House in Boston, Lynn nestles in a curve of the North Shore. Originally it stretched six miles along the shore and five miles inland, into a rich, undulating woodland known as the Lynn Woods.

The written history of the Lynn Woods dates back to records of the Pawtucket Indians' using the area as a hunting ground and the settling of the Lynn area by Europeans in 1629. The forest lands were held in common at that time for the use of the entire community for the gathering of timber and fuel. Fortunately for posterity an early resident of Lynn, William Wood, returned to England and published a book in 1634 entitled *New Englands Prospect*. In it he describes the waters in the forest streams of Lynn as "far different from the waters of England, being not so sharp but of a fatter substance, and a more jettie color, it is thought there can be no better water in the world."[1] Wood went on to describe in detail the kinds of wood that were garnered from the forest and the uses to which the wood was put, resorting even to verse:

*Trees both in hills and plaines, in plenty be,*
*The long liv'd Oake, and mournefull Cypris tree,*
*Skie towring pines, and Cheftnuts coated rough,*
*The lafting Cedar, with the Walnut tough:*
*The rozin dropping Firre for mafts in ufe,*
*The boatmen feeke for Oares light, neate growne fprewse,*
*The brittle Afh, the ever trembling Afpes,*
*The broad-fpread Elme, whofe concave harbours wafpes,*
*The water fpungie Alder good for nought,*
*Small Elderne by th' Indian Fletchers fought,*
*The knottie Maple, pallid Birtch, Hawthornes,*
*The Horne bound tree that to be cloven fcornes;*
*Which from the tender Vine oft takes his fpoufe,*
*Who twinds imbracing armes about his boughes.*
*Within this Indian Orchard fruites be fome,*
*The ruddie Cherrie, and the jettie Plumbe,*
*Snake murthering Hazell, with fweet Saxaphrage,*
*Whofe fpurnes in beere allayes hot fevers rage.*
*The Diars Shumach, with more trees there be,*
*That are both good to ufe, and rare to fee.*

One of the earliest structures in Lynn Woods was a stone bridge built over one of the streams. The bridge became known as Penny Bridge and the stream as Penny Brook—for each man who used this convenient access to the Woods for fuel gathering was charged one penny until the bridge was paid for.

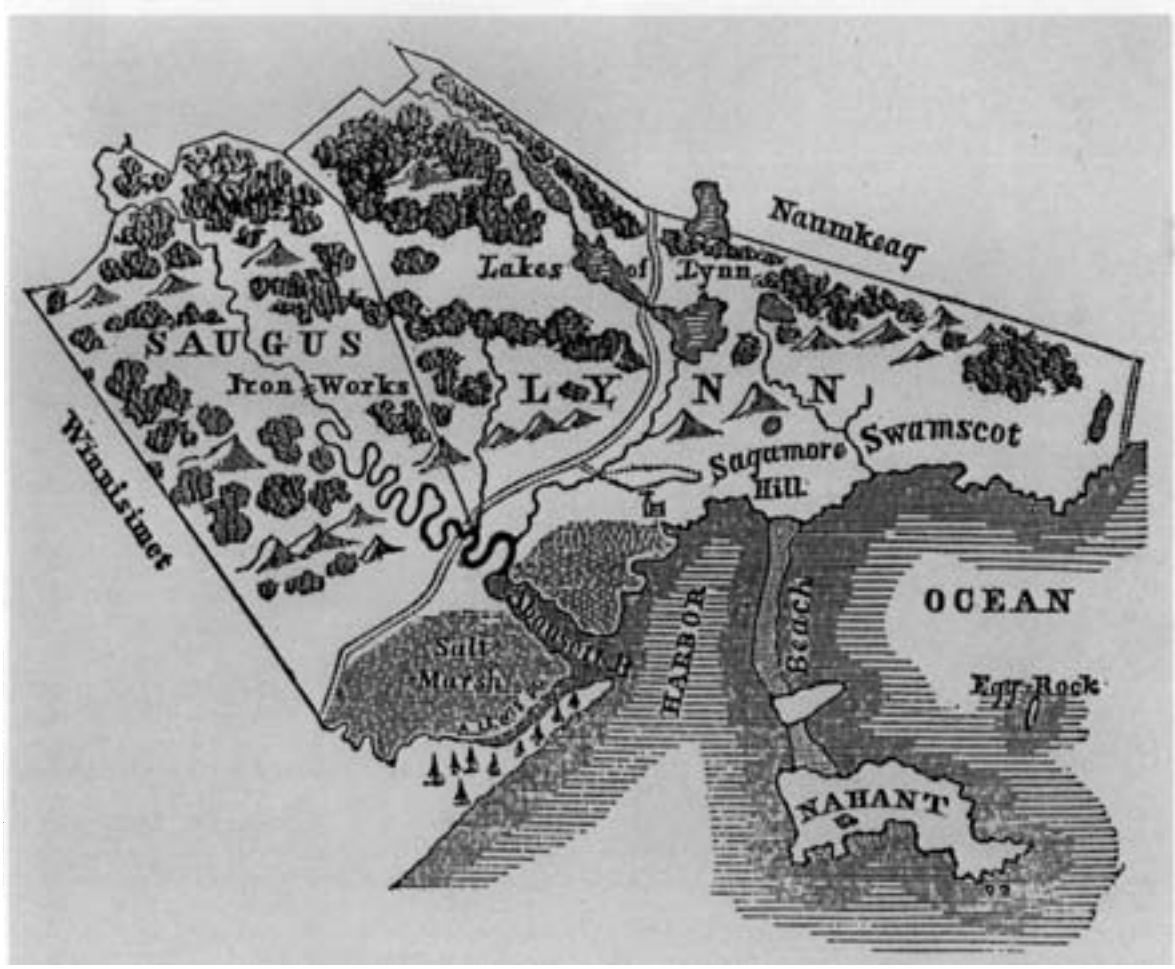
**Wolves and Pirates Prowl Lynn Woods**

In 1686 the white inhabitants of Lynn officially purchased the land they had settled on and the surrounding woodlands from the Native Americans for seventy-five dollars.

Agitation for the division of all common lands began in 1693, but it was not until 1706 that the Town Meeting voted to divide them among the landholders of the town.

Certain universal menaces drew the townspeople together in the Woods nonetheless: wolf pits, which exist to this day, although the authenticity of their use has been called into question, were supposedly dug in the early seventeenth century to confront the danger presented to livestock. As late as 1735 there are town records of two days in August being set aside for a general killing of wolves in Lynn Woods.

Probably the most significant remnant from the seventeenth-century period of the Woods involves their link with pirate lore and pirate treasure. The tale was often told of a ship anchoring near Lynn Harbor. Four pirates rowed ashore and left silver in exchange for handcuffs and leg irons made for them at the nearby Saugus Iron Works (Saugus was part of Lynn at that time). They then disappeared, only to return, purportedly depositing




*An early map of Lynn, Massachusetts. Saugus was set off from Lynn in 1815. Naumkeag is now called Salem, and Winnisimet is Chelsea.*

a treasure of great magnitude within a natural cave in a rocky portion of Lynn Woods. When they once again appeared, three of them were captured, tried, and hanged. The fourth, a man named Thomas Veal, escaped and hid in the natural cave where the treasure was buried. There he dwelt, periodically mending shoes for the people of the town in order to buy supplies, but chiefly secluding himself at his hideout. Several different versions of the pirate's life have been told, but in one respect they all concur. In the year 1658 there was an earthquake that shook Lynn severely. Thomas Veal was in his treasure cave at the time. The rock above splintered and fell in upon him, entombing Veal forever with his ill-gotten hoard. From that time onward the spot has been called Dungeon Rock. News of the buried treasure continued to echo through the years, creating a never-ending interest in the site.

The Woods continued to be used throughout the eighteenth and early nineteenth century as it had always been—for fuel. A growing number of people, however, came to appreciate the forest for its sylvan beauty. Chief

*Penny Brook in Lynn Woods, so named because it cost the early English settlers a penny to use a stone bridge that was built over the brook as a more convenient means of access to the Woods' supply of timber. The one-penny tolls financed construction of the bridge.*

*Wolf pits in the Ox Pasture of Lynn Woods, reminders of New England's primeval wilderness. These were baited, stone-lined traps designed to catch wolves, which in colonial times were a common threat to people and livestock alike. One age-old tale tells of an Indian woman who fell into one of these traps and found herself face to face with an incarcerated wolf. According to the tale, the two spent the night in terror, cowering in their respective corners, until help arrived the next morning.*

among these enthusiasts was a self-educated botanist by the name of Cyrus M. Tracy. A Lynn resident from his early youth, Tracy roamed the wooded areas of Essex County and recorded specimens of botanical and geological interest that he observed in his travels. In 1850 he formed the Exploring Circle with four other Lynn residents, a group dedicated to the exploration and recording of the plants, animals, and geological phenomena of the area. They made frequent field trips to the Woods to gather information, and each member was required to present papers and reports monthly to the Circle. Part of their charter included the measurement, exploration, and recording of areas of Lynn Woods previously little known to local residents.

**The Spiritualists Take Up the Search**

In 1851 another chapter in the history of the Woods opened as well. Lynn had become a gathering place for Spiritualists, an increasing force in the mid-nineteenth century. A man named Hiram Marble from Charlton, Massachusetts, felt himself called to the Lynn Woods to follow up on the legend of

*At the end of a circuitous cart path leading from the town of Lynn to Dungeon Rock [in background], Hiram Marble and his son Edwin built a "prim little cottage... cozily situated on a sort of shelf." They soon made a garden and transformed the cart path into a carriage road.*

Dungeon Rock and its buried treasure. He purchased the Rock and five acres surrounding it, and fell to the task which was to consume all of his resources and the rest of his life: finding Thomas Veal's hoard. There is little doubt that it was his deep belief in Spiritualism that motivated him, for there was no reward and little gratification for this particular life's work. Marble consulted frequently with mediums, who would make contact with the spirits. The spirits, in turn, would guide him where to go next. For the first few months he lived alone at the site, digging straight into the hillside. Six months later fear of collapse made him discontinue that route and begin in a more circuitous manner. The bits of stone to be seen on the hillside to this day date from the blasting of that period.

Marble brought his family to join him, in particular Edwin Marble, his son, who worked all of his life as well to find the treasure. Together they built a house for the Marble family to dwell in. In the summer of 1855 they laid out a carriage way from the Rock to the town of Lynn. This road, according to the reminiscences of Charles O. Stickney, who visited the site in his youth, was a "rude, newly made road, now down a sudden and almost breakneck descent, now around the base of a hill, the sharp curve so narrow and sidelong as to threaten an upset, with partial openings affording glimpses of wild ravines and lovely dells."[2] Stickney was in a horse and wagon, but today the road to the site remains steep and winding. Stickney and his friend saw a "prim little cottage . . . cozily situated on a sort of shelf,"[3] with Hiram Marble himself on the roof building a chimney. The Marbles opened the tunnel they were excavating to tourists in order to raise money for the project. A later visitor observed that above the grated door to the tunnel was a sign which read, "Ye who enter here leave twenty five cents behind."[4] Edwin Marble himself took Stickney and his friend around, first inviting them into the house to view the museum, which incorporated the various products of the excavation, including a dirk, the hilt of a sword, and an ancient pair of scissors. Two pencil sketches of the pirate's cave, one with Veal's bones in full view, had been drawn by an invisible artist during a Spiritualist sitting at the house.

The Marbles worked on. In 1856 a woman medium, Nanette Snow Emerson, spent six weeks writing a book called *The History of Dungeon Rock* in order to raise funds for Marble's work. An intricate and fanciful version of the pirate's tale is woven. In describing the area around Dungeon Rock the medium gives an idea of the ancient, wild beauty of the spot. She also indicates Hiram Marble's intention for the site after he had recovered the treasure: "All this is to be revived again; the woodland to be laid out in groves, and parks and forest. . . ."[5] In light of the fact that this was literally the naissance of the era of public parks in America, within two years of the competition for Central Park in New York City, this seems a generous and enlightened view for the space.

On November 10, Hiram Marble died, and Edwin Marble took over full responsibility for the excavation, which he continued until his own death in 1880. Hiram was buried in Charlton with his family, but Edwin chose to remain on the southwestern slope of the Rock. Because of the burial laws a mound of earth had to be placed above him. A large boulder serves as his headstone and fragments of rock, blown out by Edwin and his father, encircle his grave. After digging and blasting one hundred and seventy-four circuitous feet into the solid rock, neither man succeeded in his mission, and eventually the Rock was left abandoned by the Marble family. Another well known Lynn resident, the singer John Hutchinson, wrote of the Marbles' endeavor:

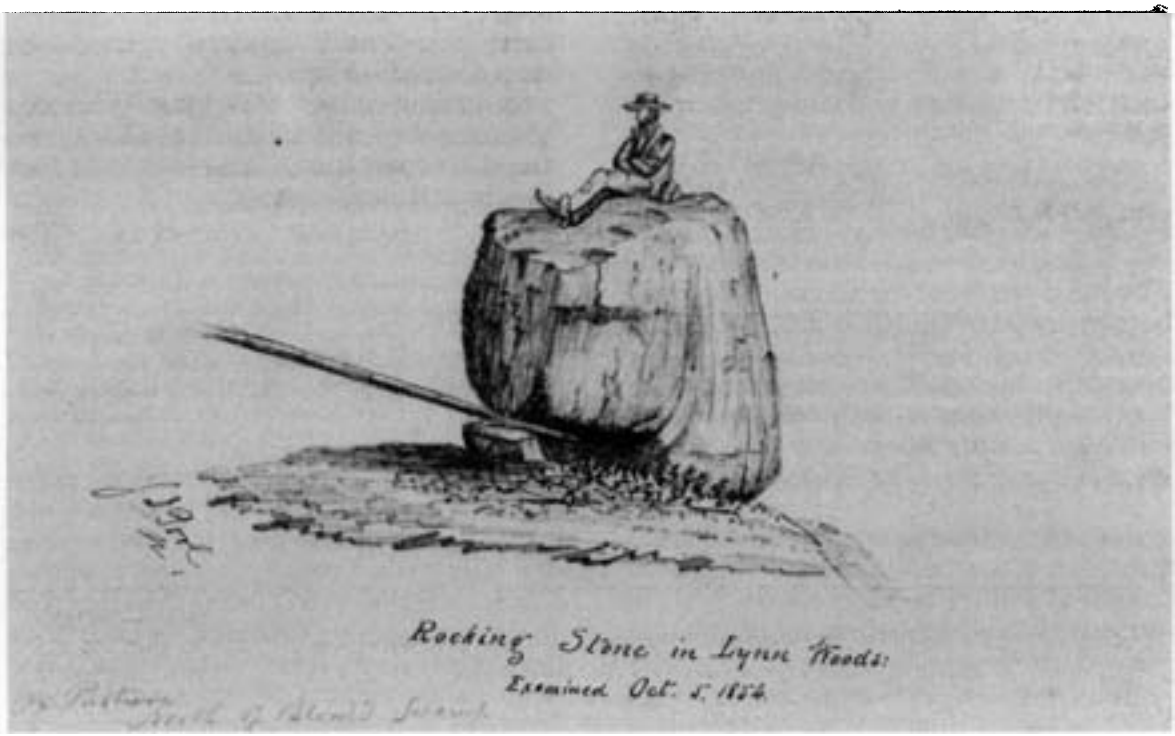
> Hiram Marble told me he would either prove the truth of Spiritualism or dig its grave. So for many decades those earnest, honest men, whom the world may call mistaken, drilled and dug and tunnelled. . . . There [the tunnel] remains, an eloquent evidence of what men will do to prove their faith.[6]

**The Exploring Circle Digs In**

During the period of the Marble residency the Woods were visited by the curious but also by nature enthusiasts. The Exploring Circle spent a great deal of time charting and investigating the area. In 1858 Cyrus Tracy published a book entitled *Studies of the Essex Flora.* In it he describes several spots in the large county of Essex, but he dwells lovingly upon the area of the Lynn Woods. He considered them botanically undiscovered: "Those who love pleasant and finely toned scenery have often found much satisfaction in this vicinity, and the culler of choice old histories and romantic legends has long esteemed it a productive field," but the botanist seemed to have overlooked it, being unable to believe "that a district so near the metropolis might contain some things worth looking for."[7] Here Tracy hits upon one of the unique and valuable features of the Lynn Woods, both then and now. "So near the metropolis" is a theme that the reader must bear in mind, for it is one of the essential reasons that the Woods are so important to this day.

The Exploring Circle recorded the various botanical wonders they came across in their travels and kept watch for the biggest threat to the forest: fire. The people of Lynn from early days learned to dread the uncontrollable conflagrations which raced through the Woods, destroying acres of timber.

The Circle was interested in geology as well as botany. In 1858 a "Committee on Bowlders and Erratic Rocks" was formed. Because of ancient glacial paths Lynn Woods are strewn with gigantic boulders. Once again, thorough descriptions were given of unusual formations, frequently accompanied by Ruskinesque drawings of them. By the time of the Circle's peregrinations of the early 1860s, the original town of Lynn had been




*"Ruskinesque" sketch of a glacial erratic, a "rocking stone," in Lynn Woods. The Exploring Circle was interested in geology as well as botany, and in 1858 formed a "Committee on Bowlders and Erratic Rocks." This drawing was made by Stephen Decatur Pool in 1854.*

*Sketch of the "Big Cedar," which once grew on Cedar Hill in Lynn Woods. The sketch, which is preserved in the records of the Exploring Circle, was probably made by Stephen Decatur Pool in 1855.*

divided into three communities: Lynn, Lynnfield, and Saugus. The vast woodland where they roamed remained primarily in Lynn, with sections in both of the other communities.

In 1869 Lynn suffered a trauma that had reverberating effects upon the community. A ferocious fire consumed a section of the factory district of the town. Officials felt it was time that Lynn faced the necessity of providing a better water supply, for the fire department had been hopelessly inadequate in the face of the disaster. Their first purchase of a water supply was in 1870—an abandoned mill pond in Lynn Woods known as Breed's Pond. A Public Water Board was formed.

**Water and the Floodgates of Development**

The development of the water sources of Lynn is of primary importance to the fate of the Lynn Woods for two reasons. By 1872 the Water Board was assuming the role of supplying all of Lynn's water. This meant that there was a rapidly growing need for water sources and water-storage facilities. The Lynn Woods had the pure streams so glowingly acclaimed by William Wood in 1634. It was a natural spot for damming and establishing storage basins, and the Water Board looked to four brooks in the Woods, Hawkes, Penny, Birch, and Beaver, to meet the demand. They wished to create four artificial ponds, or storage basins, for fire and for a general water supply. With this step the Public Water Board had to make roads in order to reach, establish, and maintain the new water sources. By 1873 a drive fifty feet wide and one and one-half miles long had been created around the Breed's Pond Reservoir. For the first time since white men had established the ancient cart paths, an inner section of the Woods had made more easily accessible to people.

The effect on the Lynn Woods was obvious. Suddenly land that had always been treated as too rocky and barren to be used was open to development. The alarm was raised for people who wished to preserve the sylvan setting so close to a growing town. A later park report states, "The Water Board's ponds and girdling roads punctured the Woods and exposed them to undesirable occupation."[8]

It is not surprising that Cyrus Tracy was the first person to recognize the threat to this unspoiled environment. The 1891 Lynn Park Commission report states:

> His call, his inner inspiration was to teach the people of Lynn that they had in the Woods "an asylum of inexhaustible pleasures." . . . He led parties of enthusiastic naturalists to scenes of beauty and grandeur hitherto unseen, save by his eyes. He dedicated hilltops and glens with mystic rites.[9]

And that is exactly what he did. He established "Camp Days" in the forest and published notices in the local papers encouraging the citizens of Lynn to join the Exploring Circle in naming and dedicating various sites in the Woods with elaborate ritual, speeches, poems, and songs. Tracy himself would lead tours for the sake of "rambling, studying the splendid views, botanizing and the like," as an 1881 Lynn *Transcript* article describes it. Throughout the 1870s he endeavored to en-

gender interest in the preservation of the Woods. In 1880 the Lynn *Transcript* had editorialized: "Foremost among the public wants in our city is the need of public parks, where the denizens of the hot and dusty city may get a sight of the green grass."[10]

By 1881 Tracy felt the threat to the Woods so intensely that he guided the Exploring Circle to the decision to insure the preservation of the Lynn Woods for posterity. After a great deal of consultation with the city government, on December 6, 1881, the "Indenture Adopted for the Purpose of Constituting the Free Public Forest of Lynn" was adopted. Tracy describes in the Records of the Trustees of the Free Public Forest the method used to establish the Indenture. He insisted that the current mayor sign the Trustees into acceptance as an official body connected with the town government. He felt, correctly, that without official status the Trustees of the Free Public Forest would never have been established as a permanent institution:

> By [the mayor's] compliance, the measure was invested with the character of great public benevolence, and thus admissible, under the statutes, to become a perpetuity. And thus was secured the most important point of all; for if any plan for the preservation of a forest cannot be in its nature perpetual, it is at once liable to every kind of change and derangement, and simply remains a failure.[11]

Tracy considered the Lynn Forest the "ancient legitimate inheritance of the people of Lynn," a reference to its many years as common land, and he set about gathering land for the enterprise with unbounded zeal.

**The Tide Begins To Turn**

The nationwide park movement by this time was an established fact of American life. New York landscape architect Frederick Law Olmsted was the reigning champion of urban open spaces—for the sake of aesthetic considerations to be sure, but also because he keenly observed that with the growth of cities, and the consolidated living arrangements which ensued, it would be psychologically necessary to ensure open spaces for the working people who could not otherwise escape from the dust and noise of the city. "Breathing room" became a ubiquitous cry, and by the 1870s the enlightened elements of society and politics were gathering forces to create a permanent park system for Boston. After numerous struggles the Park Act of 1875 was passed by the Boston City Council. That June, the voters of Boston gave the plan their approval. The first person the newly formed Park Commission called to advise them was Frederick Law Olmsted. Thus began a long association between Boston and the famous landscape architect and with his firm. In 1882 the Massachusetts Legislature passed a bill known as the Park Act which allowed municipalities of the Commonwealth to condemn and purchase lands within their boundaries for the purpose of establishing public parks. This act was to be used by many cities and towns of Massachusetts as the basis for their park program.

By 1882 the Trustees of the Free Public Forest were setting up their program in earnest. It is clear that they considered themselves to be pioneers in the effort to preserve forest lands in the tradition espoused by Elizur Wright, a Massachusetts man in the vanguard of forest preservation. Wright actually participated in one of the Camp Day rituals in the Lynn Woods. The Trustees published the Indenture in the newspaper and solicited donations of land and money. "The Trustees will come to you and urge you to act as benefactors to that which is, after all, only your own interest."[12]

Subscriptions slowly began to come in as the Trustees embarked upon their program for the betterment of the forest. During the 1880s they improved the roads and paths left from the days of fuel gathering and livestock holding. They made efforts to clear out underbrush and thicket, both for fire control and for better access to the forest. Signs, seats, and shelters were provided, but vandalism reared its ugly head, raising the need for a forest

patrol. By donation and purchase the Trustees acquired acreage in small bits.

By 1887 a prominent and wealthy citizen of the town, Philip A. Chase, had become involved in the forest's preservation. It was a fortunate day for the Lynn Woods when he did, for he was a tireless and enthusiastic supporter all his life. When the thirteen acres of the incomparably beautiful Penny Brook Glen, with its brook, rare and wonderful wildflowers, and seventeenth-century bridge, were about to fall into the hands of lumbermen it was Chase who rallied support to save it and raised the necessary money to buy it and the surrounding land. Next, he aided in purchasing Dungeon Rock and the area around it from the Marble heirs.

In 1888 the City Council of Lynn authorized the construction of a new reservoir, to be achieved by the damming of Hawkes and Penny Brooks. The new basin, a large one, was to be established in the center of the Woods, in an area known as Blood Swamp. The construction began at once and with it came a more serious threat to the sanctity of the Woods. The swamp was set much deeper into the Woods than Breed's Pond. A park report stated, "The construction of the water basin in Blood Swamp, and the road around it, made Lynn Woods more accessible and liable to human occupation. The gifts of land and money ceased."[13]

In November of 1888 the voters of Lynn were asked to exercise their franchise on the question of the 1882 Park Act. The resulting tally was in the affirmative, a resounding vote of confidence in the work already being done by the Trustees and a confirmation of commitment to the idea of public parks. This was the impetus needed for the park movement in Lynn. The Lynn *Transcript* of June 1889 argued strongly for the protection that only a public park could offer to the Woods:

> The Park Act passed by the Legislature a few years ago,—and accepted by our city—was the beginning of a movement which if completed will secure results that are incalculable for the public good. The public parks are the breathing places of our great cities,—near and inexpensive retreats, where the tired worker can find rest and recreation. . . . We have within our forest domain a territory . . . capable of bringing benefits to future generations that can not be measured in money. For who can measure that social and moral education of communities, which is the outcome of a line of influences where nature and art unite in appealing to every sense of beauty, and where the moral instincts are quickened by the presence of every uplifting emotion, and by the absence of every debasing or sordid suggestion.[14]

### Mr. Chase Makes His Move

Once again Philip A. Chase moved forward to a leadership role. He invited the Mayor and the City Council, the Water Board, park preservationists, and prominent citizens to the Woods, ostensibly to see the site of the new storage basin but actually to inspire enthusiasm for making Lynn Woods a public park. Among the speakers of the day was the Water Board chairman, who enunciated a theme that was to thread throughout the history of the Woods: the Lynn Woods' "beauty consists in its naturalness; leave it as nature has made it and we shall have a rustic resort, so unique in its character that Lynn will acquire a reputation from its Forest Park as it now has from its unrivaled shore and magnificent beaches."[15] The mayor of the city was enthusiastic as well: "It is impossible to estimate the benefits to posterity that will accrue from this great enterprise. . . . [I]t behooves us to make further provision for the prosecution of this work by an annual appropriation for improvements."[16] And make further provisions they did, for in July of 1889 city bonds worth thirty thousand dollars were issued to facilitate the implementation of the Park Act.

The Board of Park Commissioners was appointed in October of that year, with Chase serving as chairman. The first two acts of the Commission were to hire a surveyor and to establish a "Citizens Fund" for the Reservation. This fund eventually swelled to over twenty thousand dollars, thanks to the solicitation and enthusiasm of Philip Chase.

Chase, who later served as a commissioner on the Metropolitan Park Commission, had written earlier to Frederick Law Olmsted to seek his advice about how the Park Commission should best superintend the Lynn Forest. Olmsted visited the Woods in August, and wrote a few days later to Malden journalist and park advocate Sylvester Baxter. The two men were clearly working on methods to promote interest in the park movement and seeking ways to further their cause. This letter, with its promotional advice for Baxter, may well have been the inspiration for Baxter's 1891 *Lynn's Public Forest: A Handbook Guide to the Great Woods Park in the City of Lynn.*

In the letter the essence of Olmsted's philosophy for the park is distilled, and Olmsted allows himself a certain candor reserved for personal observation. He thought the forest "a continuation of the Middlesex Fells" and "a roving ground not for Lynn and the northern suburbs only but for the people of Boston"—important concepts to bear in mind considering how hard Charles Eliot later attempted to incorporate the park into the metropolitan system he created. Of primary importance to Olmsted was the question of maintaining the Woods in their present natural state:

> It should be to Boston something like Fontainebleau to Paris and Richmond & Windsor to London. The townspeople of Lynn do not appreciate it, I judge. Probably want a park or public garden. It is, what is so much better, a real forest.

In November of the same year Philip Chase, in his capacity as chairman of the Lynn Park Commission, received Olmsted's formal recommendation for the forest. Olmsted first gave a brief definition of the principal elements of a park and stated:

> The most striking circumstance of your property is that although near by populous and flourishing communities, much of it is in a state of undisturbed nature and as a whole it is in a singularly wild, rugged and rude condition. . . . The reason it has been allowed to remain of such a character is found in the outcropping ledges and boulders and gravel with which its surface is strewn.

**Olmsted's Recommendations**

Those very qualities that had saved the site from development, however, made it impossible for Olmsted to envision a "park-like" character for Lynn Woods. He felt that "decorative features commonly seen in parks would appear fussy and impertinent, every where jarring upon the natural scenery." Olmsted's fear was that the impossibility of creating a traditional, formal park might prevent people from understanding Lynn Woods' value as a place for public recreation. He stressed that most communities did not have such a situation offered to them, for the wild parcels of land were usually taken up with industrial development or domestic architecture that were incompatible with wild areas. The advantage of the setting of the Woods was that, being slightly outside the city, it could maintain its sylvan qualities, containing many points from which the city could not even be seen, "supplying a place of refreshing, and restful relief from scenery associated with the more wearing part of the life of the towns-people."

Olmsted felt that a relatively inexpensive program of management could be arranged. "What is mainly required is that a method of improvement shall be pursued steadily, systematically, continuously, for a series of years." Three main areas stood out for the process: to gradually thin the forest, allowing the most promising trees to grow properly; to introduce new vegetation at particular points, both to cover barren areas and to replace unhealthy plants growing in moist areas with plants better suited to such sites; and, lastly, to "enlarge, strengthen and emphasize a local character" by planting vegetation that increased that character and removing vegetation that detracted from it.

The Park Commission set to work at once to accumulate land and to put into effect the

wise counsel of Olmsted. By 1890 they had acquired nine hundred and ninety-six acres and by 1891 the total acreage was up to sixteen hundred. This rapid expansion of the public holdings in part resulted from the fact that the Park Commission often pooled its resources with those of the Water Board as the reservoirs required large areas of undeveloped land as watershed protection.

as providing protection for the visitors. Horse sheds were built at Dungeon Rock (one of the great favorites of tourists), carriage turnabouts were provided at important vistas, and wells were dug at various intervals.

The Park Commissioners took their responsibility to the Woods seriously, and the members were able to take a long view of the process of preservation. The foresight and

**Whatever this city can do for the preservation of the forests, it is bound to do, not for the enjoyment of the living only, but for the generations that succeed us. Fifty years hence the population within a radius of ten miles of Boston, if the present rate of increase of large towns continues, will number not less than 3,000,000. These forest spaces for air and exercise, which can be provided today at such a trifling cost, will be of inestimable value to the large population which will seek relaxation and rest in Lynn Woods.**

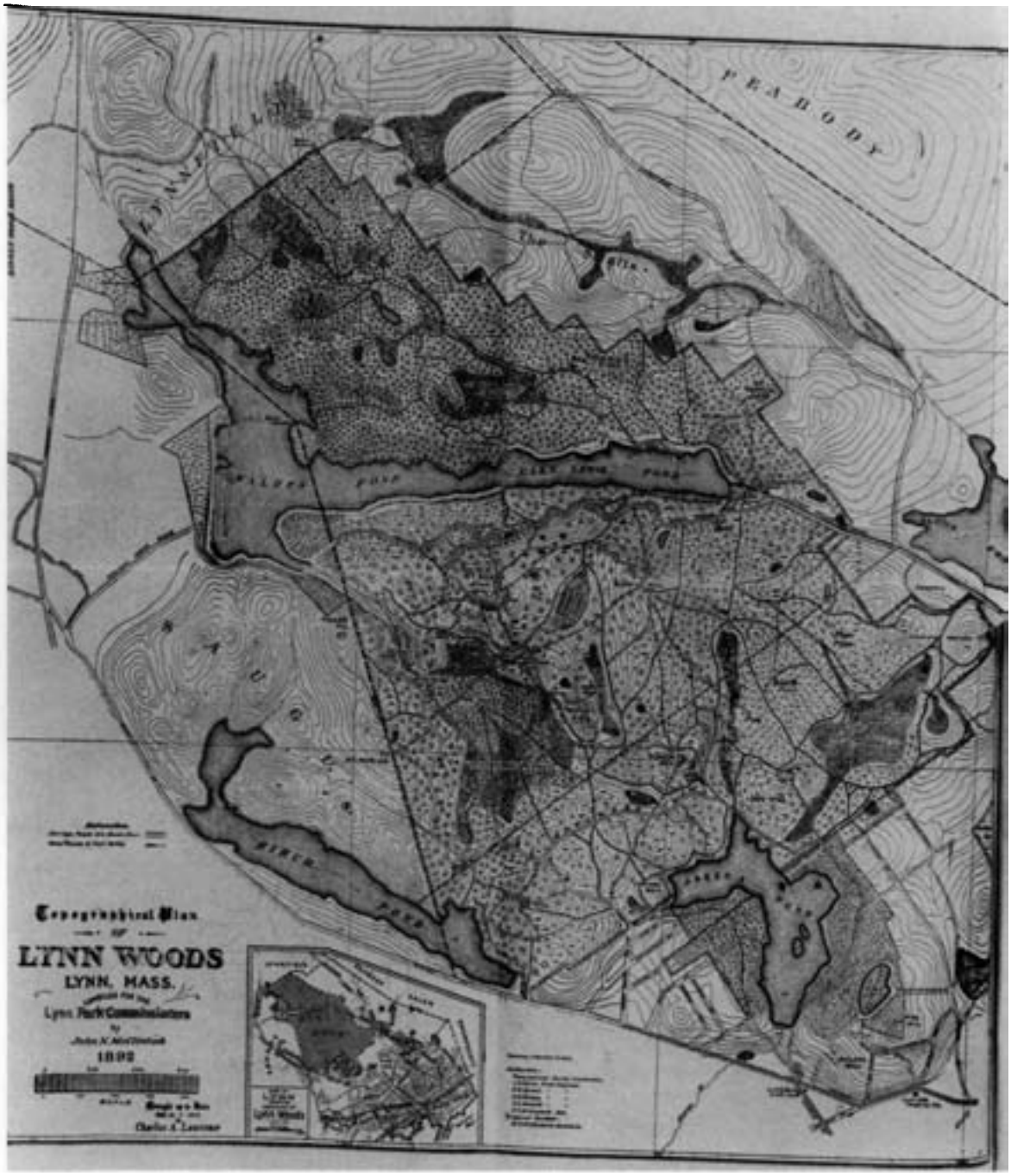
*——Park Commissioners, Lynn, Massachusetts, 1890*

Roads and paths were cleared or built, thinning, lopping, and clearing of trees was an on-going process, partly to establish the incredible vistas for which the Reservation was famous. The views from high Lynn Woods hills extend for miles and drew visitors from miles around. Eventually towers for fire spotting were added to three of the hills which increased visitor interest in the spot. Public transportation in the form of trollies were brought from the center of Lynn to ensure access to the park for everyone.

Special features of interest such as Dungeon Rock, the wolf pits, Penny Bridge, and the bodies of water had to be protected as well

wisdom of the following statement from the 1890 report of the Park Commission reflects a deep commitment to the park and to the community:

> Whatever this city can do for the preservation of the forests, it is bound to do, not for the enjoyment of the living only, but for the generations that succeed us. Fifty years hence the population within a radius of ten miles of Boston, if the present rate of increase of large towns continues, will number not less than 3,000,000. These forest places for air and exercise which can be provided today at such a trifling cost, will be of inestimable value to the large population which will seek relaxation and rest in the Lynn Woods.[17]




*A topographic map of the Lynn Woods Reservation, compiled for the Lynn Park Commissioners in 1892 and revised in 1910. The original map accompanied the Commissioners' report for* 1892, *which was the first report to contain a list of the Woods' animals and plants.*

*Philip Chase sawing wood at Bassett Camp, Lynn Woods. Bassett Camp was a small cabin built by William Bassett. The cabin contained a stove, dishes, and other niceties for both day excursions and overnight stays in the Woods.*

Because of their obvious and unusual farsightedness, the Commissioners saw themselves as playing an important role in the forest-preservation movement:

> The preservation of forests is becoming a question of vital interest to the whole country. The destruction of timber in the mountainous regions that make the watershed of our great rivers, has aroused the public mind to consider the consequences. In our small field we may show a public spirit, and bestow a care upon the forest around us, that may be a healthful example.[18]

**The Lynn Woods Today—And Tomorrow**

And so the great forest tract of Lynn Woods was established. I wish I could report that the initial support received by the Park Commission had continued unabated. Alas, as in the case of most public spaces, support diminished as the years went by, despite heavy use by the public and valiant efforts on the part of the Park Commission and Park Department to maintain the forest through the years. Eventually, this valuable tract of public open space reached the state of degradation it has come to today. It is fortunate that the Olmsted Historic Landscape Preservation Program chose Lynn Woods among its projects. All of the elements that made this Reservation such a treasure in the past still exist.

The restoration project is a fine beginning, but maintenance and—more importantly—a resurgence of interest from the public will be required to reinvigorate the site and bring it

back to the position of prominence it deserves. As the Boston area becomes more and more populated, the words of the 1890 Park Commissioners' report will become even more prophetic. It is time that the Reservation again be a place of "inestimable value to the large population which will seek relaxation and rest in Lynn Woods."

**If You Visit**

It is important to realize that the present condition of the Lynn Woods Reservation bears little resemblance to that of its heyday in the nineteenth and early twentieth centuries. Budget cuts and a general lack of interest have created the inevitable problems of overgrown vegetation, trash, and neglect. Vandalism and neglect are among the many issues that the City of Lynn and the Department of Environmental Management are working to eliminate so that the work of restoring the park to its original beauty, and the process of building an enthusiastic and committed constituency can begin. Even in its present condition the Lynn Woods Reservation is an unusually lovely place in which to walk (cars are not allowed because the roads are badly washed out in several places), but, as with any large tract of unsupervised land, it is wise to visit with a friend or small group.

**Endnotes**

1 Alonzo Lewis and James R. Newhall, *History of Lynn: 1629–1864*. Lynn: George C. Herbert, 1890, page 70.

2 Charles O. Stickney, "'Pirates Home' in Lynn Woods: A Maine Man Gets Reminiscent." *Daily Evening Item*, 22 July 1905, page 5.

3 *Ibid.*

4 Kip Whitson, editor, *Massachusetts 100 Years Ago*. Albuquerque: Sun Books, 1976, page 12.

5 Ennesee [Nanette Snow Emerson], *The History of Dungeon Rock*. Boston: Bela Marsh, 1856, page 67.

6 John Wallace Hutchinson, *The Story of the Hutchinsons*. Volume 2, Boston: Lee and Shepard, 1896, page 273.

7 Cyrus Mason Tracy, *Studies of the Essex Flora*. Lynn: Stevenson & Nichols, 1858, pages 5 and 6.

8 *Third Annual Report of the Park Commissioners of the City of Lynn, 1891*. Lynn: Whitten & Cass, 1892, page 16.

9 *Ibid.*

10 *Lynn Transcript*, 22 June 1880, page 2.

11 "Records of the Trustees of the Free Public Forest," 12 January 1882, page 7. The "Records" are located at the Lynn Historical Society.

12 "The Forest Movement," *Lynn Transcript*, 21 January 1882, page 2.

13 *First Annual Report of the Park Commissioners of the City of Lynn 1889*. Lynn: Whittier & Cass, 1890, page 6.

14 "Our Public Park," *Lynn Transcript*, 7 June 1889, page 2

15 "The Lynn Free Park," *Lynn Transcript*, 28 June 1889, page 2.

16 Asa T. Newhall, "Mayor's Address." *City Documents for the City of Lynn 1889*. Lynn: Whitten & Cass, 1890, page 8.

17 *Second Annual Report of the Park Commissioners of the City of Lynn 1890*. Lynn: Whitten & Cass, 1891, page 7.

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**CORRECTION**

The second sentence of the third paragraph of Mark Primack's article, "Twenty Years After: The Revival of Boston's Parks and Open Spaces," in the Summer 1988 issue of *Arnoldia* (Volume 48, Number 3, page 10, text lines 25 and 26), should read: "Now, a century later, some sixty-eight percent of Boston's housing units are rented; most have no backyards. Twenty percent of the city's population lives in public or subsidized housing."

# The Introduction of Black Locust (*Robinia pseudoacacia* L.) to Massachusetts

*David C. Michener*

**Though it is a firmly entrenched member of the Commonwealth's flora, the black locust is not native to Massachusetts**

Our common black locust (*Robinia pseudoacacia L.*) is not native to Massachusetts but is an escaped and naturalized tree native to the central and southern Appalachian Mountains. Nonetheless, many people believe that it was present in the original forests of the state. When was black locust introduced to Massachusetts? How did it become such a common tree in a region far to the north of its original range? The answers to these deceptively simple questions are shrouded in myth and obscured by the inaccuracies and incompleteness of the historical record. Indeed, the ubiquity of black locust in such areas as Cape Cod reflects significant aspects of our region's history. My questions thus shift for their answers to the cultural forces that led to the black locust's introduction to Massachusetts and its subsequent spread throughout our area. I hope here to clarify the historical record and to correct several commonly held misconceptions about the species' introduction and spread.

*Robinia pseudoacacia* is one of the few arboreal species of the Pea Family (Fabaceae) found in Massachusetts. Here it grows to be a tree of medium height, usually less than fifty feet (15 m) tall; I have seen trees over eighty feet (25 m) high in its native range in the Great Smoky Mountains of North Carolina and Tennessee. Its leaves are compound, usually consisting of seven to nineteen leaflets. Its flowers, borne in June in the Boston area, are heavily fragrant. The woody pods mature by late summer and remove any doubt a nonbotanist might have that this species is indeed a member of the Pea Family.

The black locust is noted not only for its vigorous growth—young trees can reach twenty feet in just a few years—but also for its aggressive suckering. Early travelers and naturalists found this vegetative fecundity astounding. Jean Hector Saint-Jean de Crève Cœur's account of his travels in North America (1786) typifies the impression made by suckering black locusts: "An acacia [*Robinia*], that was planted twenty feet from the parsonage house . . . sent a root across the cellar of the house, which penetrated the side of a well 17 feet beyond, and to the depth of 15 feet below the surface of the ground, insinuating itself among the stones of the well. . . . [I]t then . . . threw up a small tree." Lest his contemporary readers should find this incredible, Saint-Jean de Crève Cœur provided his own observation from a small church along the Hudson River in New York:

> On the 17th of June, 1769, I attended the service at this church, and being obliged to remain for a short time in the neighborhood, it so occurred that two Sundays afterwards I again repaired to this place of worship; and I never was more astonished, than when, on opening the door, I perceived a young acacia [*Robinia*], which, in this short interval, had forced its way through the floor and had grown to the height of four feet. This tree was the sucker from a root . . . 49 feet long.

Modern black locusts are no less vigorous; the asphalt sidewalk in front of my Arboretum residence is plagued by *Robinia* suckers from a tree situated a good thirty feet away.

**Resistance to Decay**

Of great importance to colonists to the south of Massachusetts was the soon-discovered resistance of *Robinia pseudoacacia* wood to decay. The naturalist Mark Catesby (1767), as well as Saint-Jean de Crève Cœur (1786), comments on the high esteem in which the wood was held by Americans farmers for this reason. *Robinia* wood was prized for fence-posts and construction timber in contact with the ground. It was also noticed that *Robinia* plants would colonize poor, dry soils, thus giving farmers marketable timber from otherwise marginal land. [This is due in part to the nitrogen-fixing ability of symbiotic bacteria in the root nodules of *Robinia*, a symbiosis common in the Pea family.] The value of *Robinia* wood in the early 1800s was demonstrated by Michaux, who noted (quoted in Withers, 1842) that "[*Robinia* is] allowed to remain standing in the newly cleared lands, because the inhabitants can never have enough of the wood. . . ."

Agricultural use turned out to be only one facet in the development of a market for *Robinia* wood. Withers' friend Joseph Harrison, in a letter of 1782 (printed in Withers, 1842), recalled from firsthand experience the trials of *Robinia* in American shipbuilding "about 1733." *Robinia* wood was used for trenails (pegs used to fasten planks to a ship's frame), instead of iron, with great success. "When unloaded she [the ship] was hauled ashore upon the bank in order to be searched both outside and inside, when, on the strictest examination, it was found the locust tree-nails, that had been substituted instead of iron bolts, seemed, to all appearance, to have effectually answered the purpose intended. ..." This development did not, according to Harrison, spread quickly in shipbuilding. "I frequently recommended it [*Robinia* trenails] . . . but all to no purpose, till about 20 years ago [the 1760s] when I was settled in trade at Rhode Island, I persuaded some ship-builders to try the experiment: but, notwithstanding all my endeavours, the use of locust tree-nails still continued to be little practiced or known, till it happened to be adopted by a builder of some eminence at New York, and of late years has been introduced into general use there, and in some parts of New England: but, as yet, the use of the locust-tree in ship-building is confined to the article of tree-nails on account of its scarcity. . . ." The major use

Robinia pseudoacacia *in winter. This tree (growing in Czechoslovakia) was sixty-three feet tall; its trunk was nearly fifteen feet in circumference. Photograph (dating from 1905) from the Archives of the Arnold Arboretum.*

of *Robinia* trenails in shipbuilding produced a significant market. By 1819, Philadelphia alone annually exported over one hundred thousand *Robinia* trenails for ship construction.

Several clues have about the introduction and naturalization of *Robinia pseudoacacia* in New England have come to light: durable wood useful in shipbuilding and agriculture, rapid growth of young trees even on poor soils, and clonal growth of groves from initial plantings. Include the the aesthetic attraction of fragrant blooms and one has the makings of a tree popular in a rural, maritime economy.

The first myth (and an entrenched one at that) concerns the initial source of *Robinia pseudoacacia*. Linnaeus, the great Swedish botanist, named the genus *Robinia* in honor of Jean Robin (1550–1629), a major botanist at the Jardin des Plantes in Paris. Robin is usually credited with introducing seeds of *Robinia* to France from Canada in 1600 or 1601. A Canadian seed source at this time would certainly imply that *Robinia* could well have been native in New England, too. However, Charles Sprague Sargent (1892) reiterated the claim that it was the son of Jean Robin, the botanist Vespasian Robin (1579–1662), who introduced the plant to Paris in 1636, and this without a definite source. In this case, which I take to be correct (remember that Linnaeus was writing over a century after the latter date), the error in citing a Canadian source for the original French introduction has little bearing on our quest.

Early American records can be divided into two groups: those that note a peculiar new tree that can be identified as *Robinia* and those that make no note of a tree with any combination of its distinguishing characteristics (floral fragrance, woody pods, durable lumber, rapid growth, and clonal habit). William Strachey (quoted in Sargent, 1892) saw during his journey into Virginia in 1610 "a kynd of low tree, which beares a cod like to the peas, but nothing so big," and he observed that the Indians used it to make bows. Strachey's observation has been taken to be one of the earliest records of black locust (Sargent, 1892), but it could also refer to the redbud, *Cercis canadensis* L. While *Robinia* was found at the time of the establishment of the southern colonies, what of Massachusetts? Here we come to the second myth.

**Apparent Source of the Error**

A statement in the seventh edition of Philip Miller's authoritative *Gardeners Dictionary* (1756–1759) appears to be the original incorrect citation of the "fact" that Robinia wood was used in the first buildings of Boston, a "fact" that quickly found its way into the European botanical literature. (See, for example, the citation of José Quer, 1762, in Austrich, 1987.) The statement in the *Gardener's Dictionary* is:

> This Sort grows to a very large Size in America, where the Wood is much valued for its Duration; moſt of the Houſes which were built in Boſton in New England, upon the firſt Settling of the Engliſh, was with this Timber, which continues very ſound at this Time.

As this in the only reference I have found to an original presence of *Robinia* in Massachusetts at the time of settlement (other than the possibility that it could have been here if the species had been introduced from Canada around 1601), the veracity of this "fact" (written over a century after the settlement of Boston) must be evaluated critically. I have found no evidence to support the statement but have found numerous cases that cast severe doubt upon it.

Massachusetts is fortunate that its early settlers were literate and left written records, including notes of new plants. John Josselyn's *New England's Rarities Discovered in Birds, Beasts, Fishes, Serpents, and Plants of that Country* (1672) has sections on "Plants as are proper to the Country" and "Of such plants as are proper to the country, and have no name."

Here, for many pages, are featured such novelties as pitcher-plants under the name of "Hollow Leaved Lavender," Indian beans, squashes, sumach, hemlock trees, pitch trees (here meaning *Abies*), larch trees, "cran berry," pyrola, a "hellibore" with the note "the whole plant scents as strong as a fox" (skunk cabbage to us), plus a weirdly fanciful sketch that seems to have more to do with Ezekiel's vision of wheels-in-wheels than anything truly terrestrial. Nothing like a *Robinia* is mentioned, figured, or described. Josselyn also authored his *Voyages*, or accounts of his sea voyages to and adventures in New England. Published in 1675, it has only one possible reference to an unknown tree that might be a *Robinia*: "The Line-tree with long nuts, the other kind I could never find." William Wood's propagandistic *New-England's Prospect* (1634) also lacks any reference to a tree with the characteristics of a *Robinia*.

The botanical explorers and writers of the late 1700s and early to mid-1800s leave little room to believe that Robi*nia pseudoacacia* was ever native to Massachusetts. The Rev. Manasseh Cutler's *Account* (1785) described the species as native to "southern states—only cultivated here." François Michaux (cited in Withers, 1842) categorically states that the tree did not grow naturally in any state east of the Delaware River, trees in those areas having been planted. Daniel Browne (1832) reiterated Michaux's statement and noted that the wood was not much used in construction except to support the sills—further evidence that Miller's source was incorrect. Torrey's *Flora of the State of New York* (1843) described the tree as "not indigenous in any part of the State . . . . [A]lmost naturalized in many places." Finally, George B. Emerson's *Report on the Trees and Shrubs Growing Naturally in the Forests of Massachusetts* (1846) concisely claimed that "[*Robinia*] is not known to be, nor is it generally considered, a native of the State or of New England; and it is doubtful whether it grew naturally in the northern part of the Middle States. . . . It does not grow spontaneously near the sea-coast, even in the Southern States."

**Escape and Naturalization**

Note the gap in time from the earliest colonial records of New England, in which black locust is not mentioned, to the botanical writings of the late 1700s and early to mid-1800s, in which *Robinia pseudoacacia* is described as naturalized. A major development in the *Robinia* story occurred in this period. First was the destruction of the original forests in Massachusetts (and the other colonies) as the colonists changed the forested territory to settled farm and pasturelands. New England is probably more forested at present (the 1980s) than at any time since the arrival of the colonists, thus it is easy for us to forget that much of the arable land of the state was practically clearcut. In addition, grazing was a component of agricultural settlement and much additional land, including parts of Cape Cod and the islands, was further stressed by this factor. Second, various attempts were made to reforest some of the abused land and exotic species were certainly tried. Evidence of more recent trials can be seen in the early ecological literature, as where an old private reforestation at Woods Hole was evaluated (Chrysler, 1905). The condition of this property in 1850—essentially deforested—was undoubtedly a widespread condition and was anything but new.

The reforestation of New England occurred primarily through the natural forces of forest succession on abandoned farms and pastures. Black locust probably became locally common by escaping from cultivation once it had been planted. Saint-Jean de Crève Cœur's account (1786) of the rapid spread of *Robinia pseudoacacia* in the colonies focuses on all the critical points of human interest for growing the tree: the fragrance of its flowers, the durability of its wood, and the rapidity with which it grew vegetatively, even on poor

*Specimen of* Robinia pseudoacacia *in the Royal Botanical Gardens, Kew, planted in 1762 by Princess Augusta of Wales. Photograph by and courtesy of István Rácz.*

soils. Saint-Jean de Crève Cœur recounts the development of nurseries for the production of robinias, and the establishment of robinias on Long Island, New York, on a major scale. He does not overlook New England:

> It has been already observed, that the Americans plant the acacia [*Robinia*], with the view of meliorating such poor and defective soils, as they intend to put under crop, for a series of years; and, as the woods annually diminish in the inhabited parts of the country, it is no uncommon thing to see the old forests replaced by plantations of acacias. It is in Long Island, New Jersey, Providence, and in the vicinity of Boston, that I have particularly noticed the good effects of these plantations. In several places there were formerly moveable sands [that] by means of inclosures of acacias, and by planting a great number of trees in different ways, these moveable sands have been fixed.

He also notes the tendency of Americans to use black locusts as shade trees near watering spots, and to hold firm eroding river banks.

Black locust must have been introduced to Massachusetts by the mid-1700s (Catesby, 1767, recorded it as "very numerous in most

of our northern colonies"), the introduction having been driven by the overlapping forces of strong demand for the wood in both agricultural and marine markets, by the then-ongoing destruction of the original forests, and by the consequent need for a fast-growing tree capable of tolerating marginal agricultural land. *Robinia pseudoacacia* fit all these needs. Since the species is semi-weedy, once it was established within a region it was only a matter of time before naturalized populations became permanent and the species spread as a part of the secondary woodlands on disturbed and abandoned sites.

The *Robinia* craze in the United States witnessed by Saint-Jean de Crève Cœur was ultimately thwarted by the presence of a native insect borer. The borers stunt individual trees, and greatly reduce the commercial quality of the wood. Sargent (1892) considered only the borers to prevent *Robinia pseudoacacia* from being one of the most important timber trees in North America. A significant *Robinia* craze swept Europe in the early 1800s, aided in good part to the horticultural phenomenon in the person of one Mr. William Cobbett. Between 1817 and 1819 he managed a farm on Long Island, New York. He became enthralled with "especially the Flowering Locust, or Acacia, which, in my opinion, surpasses all other trees, and some of which, in this Island, are of very great height and beauty" (Cobbett, 1828). Upon his return to Europe, he established a nursery and is supposed to have sold more than one million *Robinia* seeds and trees; that leads to another chapter in horticultural history.

There is an irony here. One Robin*ia* craze fed another, and both ended with *Robinia pseudoacacia* permanently naturalized far beyond its homeland in the central and southern Appalachian Mountains. Robinia's naturalization has been so convincing that I have been assured—incorrectly—that the extensive groves of *Robinia* on Cape Cod most certainly are *not* artifacts of European settlement.

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# BOOKS

*Encyclopædia of Ferns: An Introduction to Ferns, Their Structure, Biology, Economic Importance, Cultivation and Propagation,* by David L. Jones. Portland, Oregon: Timber Press, 1987. *xvii* + 433 pages. 250 color plates, 150 black and white photographs, and numerous line drawings. Introduction by A. Clove Jermy. $50.00 hardbound. (Exclusive distributor: ISBS Inc.)

MIRIAM Z. EZUST

When a new fern book comes to my attention I am always eager to read it and learn more about my favorite plants. David L. Jones' *Encyclopædia of Ferns* had more than justified my initial enthusiasm. In addition to being a prized reference work for amateur and professional fern-growers, this book will also be of considerable interest to anyone who grows indoor, greenhouse, or outdoor plants and is looking for something different, exotic, and interesting to grow. Jones' book is so broad in scope and yet so rich in detail that it can be appreciated instantly for the beauty of its illustrations and drawings and it also can be studied carefully as an instruction manual for the successful growing of these fascinating plants. The book is divided into seven parts, each in several chapter. The seventh part consist of appendices.

Jones presents his material with depth, logic, and common sense. His readers will quickly become familiar with the many forms, shapes, colors, sizes, and other decorative features of hundreds of species of ferns and fern allies.

The first two chapters, "Introduction to Ferns and Fern Allies" and "The Economic Importance of Ferns," while not the strongest chapters in the book, give a good overview of the subjects to be covered later. In Chapters 3 through 6 Jones presents his botanical basics: the structure, reproduction, life cycle, and classification of ferns and fern allies (*Psilotum, Lycopodium, Selaginella, Isoetes, Equisetum,* and others). The text of these chapters is very clear, and terminology is explained as it is used. There is also an excellent glossary. Unfortunately there are no figure numbers to accompany the author's line drawings so that a great deal of page-flipping is required to match illustrations with text. Moreover, captions do not indicate sizes of the illustrated subjects so, to a naive reader, a leaflet could appear as large as a sporangium. The thirty-two gorgeous color photographs by E. R. Rotherham illustrating some of the many variations of soral patterns on fertile leaves (pages 17 to 20) are consistently mislabeled "economic importance" and belong more properly on page 32 in the chapter on structure.

These three criticisms are the only complaints I have, and as minor flaws they are certainly overpowered by the strength of the rest of the work.

Jones discusses and carefully illustrates not one, but thirteen representative classes of ferns and allied plants in his chapters on structure, reproduction and life cycles. These chapters will be of inestimable help to the fern grower in deciding which spores will be likely to germinate readily and which would be especially difficult or impossible for the home grower to start. Part One ends with a brief but highly informative chapter on cultivars (of special interest to growers) and a chart

of terminology usually associated with these botanical oddities.

Part Two, the "Cultural Requirements of Ferns," and Part Three, "Pest, Diseases and other Ailments of Ferns," are essential to have on hand whenever disaster strikes. The descriptions of problems and their effects on ferns are vivid and detailed and will enable even a novice grower to make rapid diagnoses, employ effective remedies, and reduce the likelihood of future difficulties.

Part Four is the part that every amateur and professional fern grower will want to read most carefully. It deals with propagation and hybridization of ferns, and includes the simplest vegetative propagation techniques, complete directions with illustrations for the more sophisticated home techniques, and an excellent article on tissue culture. In Chapter 17, "Propagation from Spores," Jones lists fourteen steps to follow to ensure good results in spore germination. There are sound reasons given for each step. Even if you have never before attempted to raise ferns from spore, and even if you have accepted the myth that it is too difficult, I am sure that you, too, will have success following the excellent instructions in this chapter. It is also worth mentioning the Jones provides a list of fern societies and study groups from whom it is possible to obtain spores. Indeed, you might become too successful and wind up with dozens of diminutive gametophytes demanding to be nurtured.

Part Five gives many suggestions about the general needs for your window-sill-sitters or greenhouse inhabitants, and how to show them off to their best advantage, whether they spread, climb, or cascade. Moreover, eleven of the twelve appendices list material pertinent to this sections. Eight will be of particular interest to gardeners in New England: there are more than one hundred species listed which are cold-hardy, and quite a few, though not native to that area, can withstand frost and snow.

Jones has placed the most beautiful and fascinating portion of his book last. In Part Six, "Ferns to Grow," a worldwide selection of more than seven hundred species of ferns, fern allies, and cultivars are discussed. Brief but comprehensive information about each one is provided. Their grouping is not strictly by genus, but by the consideration of their cultural requirements, making it more convenient for growers to use. The use here of line drawings, black and white photographs and color plates give the reader a real sense of the habits and most distinguishing visual characteristics of most of the ferns under discussion.

All in all, this a a delightful and practical book for any horticulturist to own and enjoy. It may also serve as a valuable bridge between the more popular (but less technical) fern books and the more sophisticated and specialized fern literature.

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*The Garden and Farm Books of Thomas Jefferson*, edited by Robert C. Baron. Golden, Colorado: Fulcrum, Inc., 1987. 528 pages.

MARION D. CAHAN

> The greatest service which can be rendered any country is to add a useful plant to its culture.
>
> —Thomas Jefferson

The major portion of this book contains a printed copy of Thomas Jefferson's "Garden Book" and his "Farm Book." In addition, there is a section of selected letters to friends and family members in this country and abroad on the subjects of gardening and farming. These poetically written letters provide great insight into the inner life of Thomas Jefferson—his character, his warmth and

enthusiasm, and above all his obsession and fascination with gardening. Thomas Jefferson was by nature a gardener. The following excerpt provides the reader with a personal aspect of the writer:

> I never before knew the full value of trees. My house is entirely embosomed in high plain trees, with good grass below and under them I breakfast, dine, write, read and receive my company. What would I not give that the trees planted nearest round the house at Monticello were full grown.
>
> —Letter to Anne Cary Randolph (his grand daughter), November 6, 1807

Jefferson's "Garden Book," written over a period of almost sixty years (from 1766 to 1824), is a detailed account of every aspect of what he planted—the dates, the development, the transplanting, the observations of temperature and weather conditions, the failures and successes.

What with his keen observation of nature, Jefferson constantly experimented with new varieties of plants while exchanging ideas, seeds, and cuttings with gardeners in America and all over the world. He succeeded in making Monticello a truly *botanical* garden.

The "Farm Book" was written from 1774 until a few weeks before his death in 1826. In it Jefferson recorded not only detailed information on all farm operations—the tools, machinery, planting, animals, and buildings—but also extensive information about the slaves (he had more than two hundred)—their names, locations, life spans, and what material possessions, primarily clothing and bed supplies, that Jefferson afforded them. The reader becomes drawn into the daily life of Monticello. Jefferson's systematic attention to accuracy and detail is fascinating and sometimes amusing.

As an eminent agriculturist, Jefferson believed that agriculture was a science of prime importance and strongly recommended that agriculture be included in the curriculum of every college and university.

A significant inclusion in this book is an essay by the renowned historian Henry Steele Commager, entitled "Thomas Jefferson and the Character of America." Professor Commager presents an absorbing account of historical events in Jefferson's time, simultaneously weaving facts about Jefferson's activities, accomplishments, ideas, and ideals. As an ardent proponent of "Enlightenment" throughout his life, Jefferson's social, political, and moral concepts of Man are brought forth and interlaced into the entire essay.

Jefferson's attitude toward slavery provides information about his character. He expended much energy and thought to the eradication of slavery, even though he himself was a large slaveholder. His success was limited to ameliorating slavery, not ending it, but his influence was far reaching and significant.

Much of Jefferson's writing took the form of a crusade against ignorance. He worked endlessly to establish and improve the laws for educating the common people. While in his seventies he wrote, "Enlighten the people generally, and tyranny and oppression of body and mind will vanish like spirits at the dawn of day."

Commager's essay provides a penetrating background to Jefferson not only as a political figure but as a unique human being. The Garden Book and Farm Book sections of this volume would be incomplete without this rich information that emphasizes and expands Jefferson's human side.

The excellent quality of the paper used is enhanced by the beautiful color photographs of Monticello and the truly arresting black and white portrait of Thomas Jefferson by Rembrandt Peale.

This book would not interest the casual reader but rather the historian, the horticulturist, the farmer, and—with the aid of the included horticultural bibliography—gardeners who would create their personal Monticellos.

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*Marion D. Cahan serves as volunteer editorial assistant for* Arnoldia.

# Index to Volume 48 (1988)

*(Numbers is parentheses refer to issues, those in* ***boldface*** *to illustrations of the entries.)*

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