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Back cover: The cover of the 1913-1914 edition of the Yokohama Nursery Company catalogue. The plant listed as Dicentra pusilla is today called D. peregrina.

Inside back cover: A leaf of Asarum magnificum, the magnificent ginger, surrounded by the leaves of Asarum europaeum, the European ginger. Photo by Peter Del Tredici.
The Larz Anderson Bonsai Collection

Peter Del Tredici

The history of these majestic plants goes back to the Tokugawa Period in Japan some 400 years ago.

The practice of growing plants in containers has a long history and is documented in the writing and painting of various ancient civilizations, including the Egyptian, the Hindu, the Greek and the Roman. But it was with the ancient Chinese that the idea of miniaturizing trees for ornamental purposes seems to have originated around A.D. 200. From China, the practice spread to Japan, probably during the Heian Period (782-1185).

During the peaceful and prosperous Tokugawa Period of Japanese history (1603-1867), which began when the seat of the Tokugawa shogunate was moved from Kyoto to Edo (Tokyo), the arts and crafts relating to landscape gardening reached new heights. Many of the great Japanese gardens that still exist today were established during this period, and the selection and cultivation of native Japanese plants, such as azaleas and maples, reached new heights (Harada, 1928).

Growing dwarf plants in containers was popular during the Tokugawa Period, but by modern bonsai standards such specimens would be considered too large and their containers too deep. The styles of the day were distinctive, with the so-called tako or “octopus” shape being particularly common. During the Tokugawa Period, the word hachi-no-ki, meaning a “tree in a pot,” was used to describe dwarf potted trees. The term bonsai, literally meaning “planted in a container,” does not seem to have come into wide use until the late 1800’s, during the Meiji Period (1867-1912).

In general, bonsai is considered an art form, with high aesthetic aspirations, while hachi-no-ki is considered primarily decorative in its function. Bonsai styles are characterized by miniaturized trees with natural shapes, growing in shallow trays. Bonsai masters derive their inspiration from nature, and the drastic training techniques they employ are intended to enhance the intrinsic beauty of the plant. Ultimately Japanese bonsai idealizes nature in order to achieve the philosophical goals of truth and beauty.

In common usage in the West, the word bonsai has been popularized to mean any ornamental plant that is dwarfed by means of pruning and by being grown in a small container. It is in this generalized, non-philosophical sense that bonsai will be used throughout the remainder of this article.

The Larz Anderson Collection

The dwarf trees that make up the Larz Anderson Collection were imported into the United States by the Honorable Larz Anderson in 1913, upon his return from serving as ambassador to Japan. While these plants are not the oldest bonsai in the United States, they have probably been under cultivation in North America longer than any other bonsai alive today. To be sure, Japanese bonsai had been imported into the United States prior to 1913,
“A rare specimen of dwarfed Thuja obtusa (400 years old). A relic of the Tokugawa Era.” Illustration from the 1905 catalogue of the Yokohama Nursery Company.

as evidenced by an auction catalogue from 1904, discovered in the library of the Arnold Arboretum. This sale, sponsored by the “S. M. Japanese Nursery Co.” of West Orange, New Jersey, put some 600 plants on the auction block in New York City over a three-day period (May 4, 5, and 6, 1904). Similar events were probably held in other major U.S. cities, such as Boston, with ports actively engaged in trade with the Orient [Long, 1971], but few, if any, of these auction plants seem to have survived the ravages of time.

It is particularly interesting to note that the S.M. Japanese Nursery display of bonsai antedates by five years an exhibit held in London in 1909, which is often described as the first bonsai exhibition outside the Orient [Yoshimura and Halford, 1957; Koreshoff, 1984]. Indeed, as far as the author could determine, the date of the first public bonsai display outside Japan occurred in Paris in 1878, during the famous Universal Exposition, thirty-one years before the London exhibition [Carrier, 1889; Maumené, 1902].

Anderson purchased his trees in 1913 from the Yokohama Nursery Company, which was started by the father and son, Uhei and Hamakichi Suzuki. The Yokohama Nursery Company catalogues from 1901 to 1922 are impressive documents, beautifully illustrated with colored plates, line drawings, and photographs. Under the section titled “Dwarf Trees Growing in Jardinieres,” the catalogues show pictures of ancient specimens of the hinoki cypress, Chamaecyparis obtusa, similar to those that are now part of the Larz Anderson Collection, captioned “Relics of the Tokugawa Era,” and provide lengthy instructions on how to care for the plants (see Appendix, p. 36). Exactly how much Anderson paid
for his plants is not known, but the 1913–14 edition of the catalogue lists the prices as ranging from one to fifty dollars ("in U.S. gold"). No doubt the older the plant, the greater the cost.

**Larz Anderson**

Larz Anderson was born in Paris in 1866, while his parents were visiting Europe. Originally from Cincinnati, Ohio, the Andersons traveled to Europe frequently and eventually moved to Washington, D.C. As a boy Larz attended a number of different schools and was tutored privately. Anderson enrolled in Harvard College and graduated in June 1888. Two months later, he set out on a trip around the world. The journey lasted two years and included his first visit to Japan.

After serving in the military and holding a variety of diplomatic posts in Europe, he returned to Japan in 1912 as "Ambassador extraordinary and plenipotentiary." Anderson held this post for only six months, resigning in March 1913, with the change from the Republican Taft administration to the Democratic Wilson administration. This was the last official diplomatic position that Anderson held.

Anderson married Isabel Perkins of Brookline, Massachusetts, in 1897. Isabel seemed to enjoy traveling as much as her diplomat husband did, writing no less than seven travelogues about her experiences. Isabel's family home in Brookline was called "Weld" (her mother's maiden name), and it served as the Anderson's country house during the summer months. As befits a diplomatic couple, the Andersons made Washington, D.C., their primary home.

The part of Brookline where "Weld" was located, in the vicinity of Jamaica Pond, was one of the centers of American horticultural
activity from the early 1800's up until the 1930's. The estates of Col. William Perkins, Thomas Lee, and Francis Parkman, the historian, were showpieces of their time. Later C. S. Sargent, H. H. Richardson, and F. L. Olmsted acquired property in the area, and the Arnold Arboretum was established nearby in 1872. In the now classic 1841 edition of *The Theory and Practice of Landscape Gardening*, Andrew Jackson Downing described the area this way:

The whole of this neighborhood of Brookline is a kind of landscape garden, and there is nothing in America of the sort, so inexpressibly charming as the lanes which lead from one cottage, or villa, to another. No animals are allowed to run at large, and the open gates, with tempting vistas and glimpses under the pendent boughs, give it quite an Arcadian air of rural freedom and enjoyment. These lanes are clothed with a profusion of trees and wild shrubbery, often almost to the carriage tracks, and curve and wind about, in a manner quite bewildering to the stranger who attempts to thread them alone, and there are more hints here for the lover of the pic-
turesque in lanes than we ever saw assembled together in so small a compass. (pp. 40–41)

“Weld” was famous in horticultural circles long before Anderson became involved in Japanese horticulture. The gardens, designed by Charles A. Platt, were featured in the March 12, 1904, issue of Town and Country. The accompanying photographs show a lavishly ornate series of terraces laid out in a formal European style. Following Isabel’s death in 1949, “Weld” was donated to the Town of Brookline and is now called Larz Anderson Park, best known for its collection of antique cars. Very little remains of the once glorious gardens.

The Japanese Connection
Larz Anderson’s interest in things Japanese predated his assignment as ambassador to that country. In 1907, he built a Japanese garden at “Weld,” and before that, in 1889, he

“The bosquet at the end of the garden, the pergola, flower draped, the marble balustrade, the wall fountain and the great Ludovisi jars.” Note the parrot in the center of the picture. Illustration from the article on the gardens at Anderson’s estate, “Weld,” in the March 12, 1904, issue of Town and Country.
brought two dwarf maples back from his first trip to Japan. But it was in 1913 that he became enchanted with bonsai. His journal entry for February 1, 1913, shows this clearly:

About us were dwarf trees of fantastic shape and stunted plum in fragrant bloom, white and pink, and gnarled trees hundreds of years old with branches blossoming out of seemingly dead trunks in pots of beautiful form and color. Isabel and I stopped so long in this little fairy place that we had to drive like the dickens through the congested streets of endless villages to Yokohama, which we reached without disaster in a little over an hour, in time for one o'clock luncheon. (p. 384)

Anderson must have purchased at least forty plants from the Yokohama Nursery Company shortly after this experience, since he returned to the United States a little more than a month later, on March 6. The purchase of these bonsai marked the start of Anderson’s serious commitment to Japanese horticulture. Not only were the plants themselves expensive to import but, once in the United States, they had to be maintained by gardeners knowledgeable in the techniques of bonsai. Given the total lack of such knowledge among Americans of the time, Anderson was forced to hire a succession of Japanese gardeners to take care of the plants. The most famous of them was Rainosuke Awano, who maintained the collection while studying for his doctorate in philosophy at Columbia University.

On at least two occasions, Larz Anderson put his collection on public display: at the 1916 spring flower show of the Massachusetts Horticultural Society, and again in November 1933 when the M.H.S. sponsored a show of chrysanthemums and Japanese dwarf trees. A popular article about the Larz Anderson bonsai collection appeared in the June 1933 edition of House Beautiful, featuring photographs of the plants and an interview with Awano. The author’s anthropomorphic approach to her subject matter is obvious:
It seems unholy to move such venerable patriarchs from the land where they have lived so long in meditation and repose. But they are here, nevertheless, in this country which was a wilderness when they and their art had reached a high degree of elegance and culture. And on the wide green terrace before the stately Brookline home of Mr. Larz Anderson, noted statesman and scholar, these noble trees, samurai of their realm, seem quite at home. That may be because adaptability is a quality of the nobly born.

Following Anderson’s death in April 1937, Isabel Anderson donated the major portion of the collection (thirty plants) to the Arnold Arboretum, along with the funds necessary to build a shade house for their display. This was situated on the grounds of the old Bussey Institution, now occupied by the Massachusetts State Testing Laboratories on the southeastern boundary of the Arboretum.

In 1949, following Isabel Anderson’s death, the remaining nine plants in the collection were donated to the Arboretum, including one that the Andersons considered the most special of all, an eighty-year-old hinoki cypress that had been given to them by “The Imperial Household” shortly before they left Japan.

**Bonsai at the Arnold Arboretum**

Unfortunately, the Larz Anderson Collection did not continue to get the attention of knowledgeable Japanese gardeners following its donation to the Arboretum. The staff did the best it could with its limited knowledge of how to take care of bonsai and the limited financial resources of the Depression era. Additional stress was put on the collection by the practice of periodically forcing it into early growth for the spring flower show of the Mas-
sachusetts Horticultural Society. While this made for a spectacular display, it seriously weakened the collection and contributed to its general decline [Wyman, 1964]. As a result of these factors, the collection shrunk from the original thirty-nine plants to twenty-seven in 1962. Included among the casualties was the hinoki that had been the Japanese emperor's gift to the Andersons.

Things began looking up for the collection in 1962 when work on the Charles Stratton Dana Greenhouses of the Arnold Arboretum was completed. This new facility included an attractive hexagonal redwood lath house for displaying the collection during the growing season and a concrete-block cold-storage unit for winter protection. The construction of this building, which maintains temperatures between 33 and 35 degrees Fahrenheit, brought an end to the practice of “plunging” the pots in the ground for the winter. Not only was this practice dangerous to the health of the plants, but the consequent freezing of the root ball cracked many of the original Japanese containers.

Another positive turn of events for the collection occurred in 1969 when Constance Derderian of Watertown, Massachusetts, was made curator. Connie had been teaching courses in bonsai at the Arboretum for several years prior to her appointment, and was well known to the greenhouse staff. Her own words describe how she became involved with the plants:

Perhaps because I was the only Bostonian who, for almost ten years, had steadily pursued the study of bonsai in the United States and in Japan, in 1969, through the efforts of Mr. Alfred Fordham, Dr. Donald Wyman asked me to repot the Anderson collection of bonsai. I did and began a program to renew the vigor and beauty of these venerable trees. Dr. Richard A. Howard, director, pleased with the initial effort, had me appointed Honorary Curator of the Bonsai Collection.

Working patiently and with a clear sense of purpose, Connie began the long process of revitalizing the collection after years of neglect. She continued to care for the collection until 1984 when her failing health forced her to resign the curatorship. The author, having worked as her apprentice since 1979, became the new curator the year she resigned.

Over the Columbus Day weekend in 1986, a break-in occurred at the bonsai house, and six plants were stolen, including three Japanese maples that were part of the original Larz Anderson Collection. Spurred on by this disaster, the Arnold Arboretum Associates decided to finance a renovation of the deteriorating bonsai house in the spring of 1987, replacing the rotting redwood planks with the more structurally substantial, vertical-grain Douglas fir. New doors were designed that allowed visitors an unobstructed view of the collection. Most importantly, a new security system was installed. The renovations were completed in time for the 1987

Constance Derderian and Hank Goodell repotting one of the Larz Anderson bonsai in 1969. Photo by P. Burns, from the Archives of the Arnold Arboretum.
season, and in June of that year, a ceremony was held dedicating the structure to Mrs. Der-derian. She died a year later on September 20, 1988.

As of August 1989, fifteen plants still remain of the original thirty-nine plants in the collection. These include seven hinoki cypresses (Chamaecyparis obtusa), four Japanese maples (Acer palmatum), one trident maple (Acer buergerianum), one higan cherry (Prunus subhirtella), one sawara cypress (Chamaecyparis pisifera ‘Squarrosa’), and one Japanese white pine (Pinus parviflora). There can be little doubt that in any list of “ironclad” bonsai, these species ought to be included. The hinokis seem to be the toughest of all in that seven of ten original plants are still alive and healthy. They are also the most ancient and most beautiful plants in the collection. Technically they should probably be consi-dered hachi-no-ki rather than true bonsai. According to Anderson’s records, the oldest hinoki specimen was started in 1737, making it 252 years old in 1989.

Nomenclature
The one question concerning the Larz Anderson bonsai that has dogged the author for years is the correct identity of the specimens of Chamaecyparis obtusa, which make up the major portion of the collection. Are they normal hinokis that have developed their peculiar shape simply as a result of hundreds of years of pruning, or are they a horticultural selection that is genetically dwarf to begin with? Fortunately, the 1901 Yokohama Nursery cata-logue contains an absolutely stunning wood-block print of its potted hinoki cypresses, identical to those in the Larz Anderson Col-lection, captioned “Thuja obtusa var. Chabo-
hiba." In this same catalogue, golden and silver variegated varieties of *Chabo-hiba* are offered, which undoubtedly originated as sports of the typical green variety.

Since the name *Chabo-hiba* is not in common use in Japan today, it took some work to uncover its exact meaning. By itself, the word *hiba* means hatchet-shaped (in reference to the foliage) and is the common name for the low-growing conifer *Thujaopsis dolobrata* (Kurata, 1971) as well as for various horticultural varieties of *Chamaecyparis obtusa* and *pisifera* (Yoshio and Motoyoshi, 1891; Yoshimura and Halford, 1957). The word *chabo* literally means bantam chicken. In combination, *Chabo-hiba* is best translated as "compact or bantam cypress."

Compounding the problem of the identity of the Larz Anderson hinokis is the fact that they were rigorously pruned for their entire lives. Based on an experiment at the Arnold Arboretum, such cultural practices seem to have affected both the character of their foliage and the orientation of their branches. In 1971 a few cuttings of the Larz Anderson hinokis were rooted in the Arboretum greenhouses. They were grown in the nursery for several years, unpruned, where they retained their dwarf habit, congested foliage, and twisted branches. In 1981, the author planted one of these specimens, which was about 20 centimeters tall and 20 centimeters wide (7 inches x 7 inches), in the Arboretum's dwarf conifer area—to see how it would develop if left unpruned. The plant continued to grow in a manner similar to the old specimens from which it had been taken until 1984, when it suddenly produced an upright leader with looser, less congested foliage. At eighteen years of age in 1989, this unpruned plant is completely upright, a meter and a half tall by a meter wide (60 inches x 39 inches), and has set an abundant crop of “normal” sized cones.3

That this is typical behavior for unpruned *Chabo-hiba* is attested to by the fact that in the 1913 edition of the Yokohama Nursery catalogue the listings under *Chabo-hiba* were changed to read, “Thuja obtusa compacta or Chabo-hiba.” On a nearby page there is a photo of a narrowly pyramidal evergreen, five to six meters tall (15 to 20 feet) and neatly trimmed, captioned “Thuja obtusa compacta.” This confluence of the historical evidence from 1913 and the experimental data from 1989 makes it certain that the appearance of the Larz Anderson hinokis is the result of continual pruning of the genetically compact, pyramidal variety, *Chabo-hiba.*

The earliest use of the name *Chabo-hiba* that this author could uncover is from the three-volume book *Somoku Kihin Kagami,* published in 1827 and reprinted in 1976 with modern Japanese characters and Latin plant names (Kintaro, 1827; Tsukamoto, 1976). This

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Chamaecyparis obtusa ‘Chabo-hiba’ #1100-71. This plant originated as a cutting from one of the old bonsai plants, but was left unpruned. At eighteen years of age, it is a meter and a half tall by a meter wide (60 in x 39 in).
work covers hundreds of plants considered highly unusual or very rare. While Chabo-hiba itself is not covered, a Chamaecyparis cultivar listed as Chaboyadori, meaning “bantam’s nest,” is described. The accompanying illustration shows a plant with two types of foliage, the loose, feathery growth (“Cryptomeria-like”) rising out of a “nest” of tight, congested growth (“Chabo-hiba-like”). In the text, the author states that he first noticed the plant as an unusual branch (or sport) on a specimen of Chabo-hiba, and propagated it specially.

As this reference in Somoku Kihin Kagami indicates, the name Chabo-hiba has a long tradition of use in Japan that predates any possible description of the plant by Western botanists. With such priority, ‘Chabo-hiba’ can be considered a proper cultivar name according to the guidelines laid out in the International Code of Nomenclature for Cultivated Plants—1980.

Over the years, three Latin names have been proposed to replace ‘Chabo-hiba’: breviramea, nana, and compacta. Of the three, only the last describes the plant accurately. Published in 1875 by George Gordon, his description of compacta reads: “The leaves and branches of this variety resemble those of the species in every way, except that they are much smaller, and the plant has a very dense and compact habit.” However accurate the name compacta may be, it suffers from the same drawback that affects all the Latinized botanical names for cultivated plants, namely that it can be and has been legitimately applied to a variety of plants other than the specimen originally described (Hornibrook, 1938). This lack of precision provides a second reason, priority being the first, for favoring ‘Chabo-hiba’ as a cultivar name over ‘Compacta.’

The historical record leaves little doubt that the Larz Anderson hinokis are best referred to as Chamaecyparis obtusa ‘Chabo-hiba,’ defined here as a compact, slow-growing cultivar with dark green foliage that develops a pyramidal shape over time. Often grown in containers and intensively pruned, it responds to such treatment by producing congested, planar foliage and contorted, horizontal branches. By restoring the Japanese name ‘Chabo-hiba’ to the Larz Anderson hinokis, one not only eliminates confusion but also achieves a better sense of their rich history.

Bonsai Maintenance at the Arnold Arboretum

What follows is a general outline of the various procedures used by the staff of the Arnold Arboretum to maintain the Larz Anderson bonsai collection in a healthy condition.

REPORTING: The smaller the pot, the more frequently the plant needs repotting. This procedure is best done in early spring, mid-to late March, before the plant shows any
signs of growth. The plant is removed from its container, and approximately two to three centimeters (one inch, more or less) of roots, plus their attached soil, are removed all around the sides and bottom of the root ball. Any roots thicker than a pencil are cut away to encourage the development of small feeder roots. This process effectively rejuvenates the root system of the plant and prevents lethal "girdling" roots from forming. After the root ball is trimmed, the plant is returned to its original container surrounded by fresh soil. The large hinokis are repotted every four to five years, while the smaller plants are repotted every two to three years.

SOIL MIXES: Plant roots are so intimately involved with soil particles that it is best to think of the soil as part of the plant itself. As such, a great deal of time and care needs to go into its preparation. In general, the potting mix should provide the plant with a balance of water retention and air circulation. Our repotting mixes consist of coarse sand (particle size 1-3 mm), peat moss or leaf mold, and screened loam in various proportions depending upon the plant being grown. In general, we use a mix that is one-half sand, one-quarter loam, and one-quarter peat for the conifers; and one-third sand, one-third peat, and one-third loam for deciduous trees. In either case, small amounts of superphosphate and organic nitrogen fertilizer are added to the soil mix.

PRUNING: There are no universal rules about how much to prune a bonsai; the techniques vary according to the species being worked with. In general the best time to prune is when the plants are producing new growth—in early spring for deciduous plants, such as the cherries and Japanese maples, in mid-spring for pines and spruces, and in early to mid-summer for the junipers and the hinokis. Generally, at least 50 percent of the new growth is removed at the time of pruning. If the plant produces a second flush of leaves later in the growing season, these also require pruning.

- With pines, the number of candles is thinned out by one-half to two-thirds, and those that remain are shortened.
- With spruces and firs, the newly flushing shoots are pinched back to half their length, inducing replacement buds to form at the base of the new growth rather than at the tip.
- With maples, the new shoots are pinched back to a maximum of two pairs of leaves and sometimes only one pair. Any vertical-growing shoots are removed or are wired into a horizontal position.
- With hinokis and junipers, which produce new growth over an extended portion of the growing season rather than in a single flush, the new growth is pinched back several times. If the new growth is not rigorously thinned, it becomes excessively congested and subject to death by self-shading.

WIRING: In young vigorous bonsai, wiring the branches into pendant or horizontal positions with copper or aluminum wire is an extremely important part of the training process. On plants as old as the hinoki cypresses in the Larz Anderson Collection, reorienting their twisted branches with wire is very difficult. These branches thicken so slowly that it may take two or three years for them to produce enough wood to overcome their old orientation. We have found that tying them down with nylon fishing line is more effective than wiring.

For the other plants in the collection, we generally wire young vigorous branches into a horizontal position in order to achieve the effect of age. It is important to remember that wire should not be left on the tree more than a year, since the branch can easily be girdled by the wire.

WATERING: Because the Larz Anderson Collection consists of such large plants in such small pots, their water requirements are quite high. During the period of spring growth, they need watering at least once a day. During the summer, one daily watering is a minimum on days when no rain has fallen, and often they
require more than this. Extending this need for daily watering back into the past some two hundred years, one begins to appreciate the magnitude of continuity and commitment that has gone into maintaining these venerable specimens.

To determine if a plant needs water, place the palm of the hand on the soil surface. If any feeling of moisture is detectable, the plant should not be watered. When the root ball is dry to the touch, the plant is watered. It is best to use the palm of the hand to make this determination because it is less heavily calloused, and hence more sensitive, than the fingertips. The root ball of a healthy bonsai behaves like a sponge, that is, water is uniformly distributed throughout its mass at all times, so the moisture content of the surface is essentially the same as that of the base.

When the plants are watered, care is taken not to get the foliage wet, particularly on sunny days when water drops can magnify the energy of the sun sufficiently to produce burn spots on the leaves. At watering time, the pot is filled to the top, and the water is allowed to drain through; the pot is then filled up a second time. This “double dousing” insures that sufficient water is provided to wet the
entire root ball and to percolate out the drainage holes. If only the top part of the root ball is moistened, the bottom part will become excessively dry and the plant could be seriously injured. Less frequent, thorough watering is always preferable to frequent light watering for any containerized plant.

FERTILIZING: While the instructions provided by the Yokohama Nursery call for fertilizing the plants with powdered oil cake (consisting of soybean or rapeseed, after the oil has been pressed out) or bone meal, we use a chemical fertilizer solution diluted to a concentration of approximately 0.01 percent

Item #340 from the 1904 auction catalogue of the S.M. Japanese Nursery Company. The description reads: “Chabo-hiba. One of the most imposing-looking specimens in this collection. This grand tree once belonged to the famous temple Hongauji, Kyoto, the ancient Capitol of the Japanese Empire. It has been said that owing to its most attractive shape, this specimen was admired by almost a million people, who made the pilgrimage to this noted temple of Buddha. It was trained by the several master gardeners who gave their services to the temple. Trained in the standard jikka style. Note: its most graceful branches extended into both sides. About 100 years old; height, 2 feet, 6 inches. With Chinese pottery pot on stand.”
nitrogen, phosphorus, and potassium. When growth commences in the spring, we water the plants with this dilute fertilizer every one to two weeks until mid-July, at which point we fertilize only once every two to three weeks through October. From this point on, the plants are going dormant, and we stop fertilizing them altogether.

**WINTER STORAGE:** In the milder parts of the United States, as in much of Japan, bonsai can be left out-of-doors all winter with only minimal protection from the elements. In New England, however, with our more severe winter weather, the plants need to be protected from the cold. A plant that is perfectly hardy growing in the ground is not as hardy when grown in a container above ground. This is due to the fact that the soil, which has great insulating power, never gets as cold as the air, which has no insulating value.

The Arboretum bonsai are stored in a concrete-block structure for the winter. The temperature in the building is maintained between 33 and 36 degrees Fahrenheit, and the plants are checked for water once a week. In general, they need watering about once a

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**THE LARZ ANDERSON BONSAI COLLECTION INVENTORY**

Plants living in 1989, and year started as bonsai:

<table>
<thead>
<tr>
<th>Number</th>
<th>Species</th>
<th>Year</th>
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<tbody>
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<tr>
<td>872-37</td>
<td>Acer palmatum</td>
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<tr>
<td>877-37</td>
<td>Chamaecyparis obtusa 'Chabo-hiba'</td>
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<td>Prunus subhirtella</td>
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<td>Chamaecyparis pisifera 'Squarrosa'</td>
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<td>Japanese White Pine</td>
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<td>Compact Hinoki Cypress</td>
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Plants dead or stolen (numbers of individuals of each species in parentheses):

- Acer palmatum (5)
- Acer palmatum 'Dissectum' (1)
- Chamaecyparis obtusa 'Chabo-hiba' (3)
- Chamaecyparis pisifera 'Squarrosa' (1)
- Cryptomeria japonica (1)
- Euonymous fortunei 'Kewensis' (1)
- Juniperus rigida (1)
- Photinia villosa (2)
- Prunus mume (2)
- Prunus subhirtella (2)
- Punica granatum (1)
- Spiraea thunbergii (1)
- Thujaopsis dolobrata 'Variegata' (1)
- Zelkova serrata (2)
month. One must be extremely careful that the plants do not get overly dry during storage as they can become extremely difficult to rewet come spring. On the other hand, if the plants are kept too wet during storage, they become susceptible to fungal infections.

As long as the temperatures remain below 36 degrees, the plants seem to survive, even in total darkness. Such dark storage will not work at higher temperatures. The key to successful winter storage is to make sure that the plants are fully dormant before they go in and that they come out before they show any signs of growth. Generally speaking, our plants go into cold storage on Armistice day (November 11) and come out on Patriots' Day (April 19), although a week either way makes little difference.

Endnotes

1 The Suzukis were employed by the Louis Boehmer Company while it was run by Boehmer himself, but in 1889 Alfred Unger became Boehmer's partner and the Suzukis went out on their own to establish the Yokohama Gardeners' Association, and, in 1890, the Yokohama Nursery Company (Unger, 1930, Yokohama Catalogue, 1908).

2 The genus Chamaecyparis was established by E. S. Spach in 1842, but it was not universally accepted, and in the older literature it is often treated as Thuja or Retinispora. Fortunately the species name for the hinoki cypress, obtusa, has remained relatively stable since its description by Siebold and Zuccarini in 1844.

3 The horticultural forms of Chamaecyparis obtusa are notoriously unstable in their morphology. Specimens of many of the widely grown dwarfs, such as 'Nana Gracilis,' sport out continually, the sport producing foliage much looser than that found on the rest of the plant. When one of these dwarfs produces seeds, the seedlings show a wide range of variability in size, rate of growth, and foliage characteristics (Spgarn, 1978). In the author's own work with seedlings of 'Graciosa,' 'Nana Gracilis,' and 'Verdoon,' they all pass through the developmental process that is normal for the species, first producing a few needle leaves (the juvenile foliage) and then, in their axils, branches consisting of scale leaves (the adult foliage). However, these scale leaves are much smaller and their "internodes" much shorter than is typical for the species, and a congested cone- or bun-shaped plant develops. The length of time that these plants retain their dwarf habit varies greatly, but I suspect that eventually all of them will produce a leader and foliage that are more or less "normal." To put it another way, many of the dwarf forms of Chamaecyparis obtusa seem to possess mutations in the genes that regulate the rate of development rather than in the genes that control specific morphological characters.

4 A second Latin name that is often listed as synonymous with 'Chabo-hiba' is var. breviramea (Yoshimura and Halford, 1957, Walker, 1976). This curious name was originally published by Maximowicz in 1866 to describe a supposed wild species from southern Japan. Later authors (Masters, 1881, Carrner, 1889, Beissner, 1900) reduced the name to a variety of obtusa, but still considered it a wild-growing plant that was cultivated as an ornamental. Rehder (1914) describes breviramea as a "tree of narrow pyramidal habit, with short branches' branchlets crowded, glossy green on both sides." More recent authors have reduced breviramea to synonymy with the species (Ohwi, 1984). To use this essentially botanical name to describe the bonsai hinokis is inappropriate since 'Chabo-hiba' is clearly a horticultural variety that has been in cultivation in Japan since the 1700's.

5 The name nana was first published by E. A. Carrier in 1867 as, "much smaller than the species, this variety is distinguished mostly by its branches, branchlets and twigs which are very slender and very short." In the 1904 S. M. Nursery Company auction catalogue, 'Chabo-hiba' is listed as synonymous with Thuja obtusa nanus. In 1918, E.H. Wilson of the Arnold Arboretum visited the Yokohama Nursery Company and photographed its specimens of 'Chabo-hiba,' which he labeled Chamaecyparis obtusa var. nana. Since this name does not accurately describe 'Chabo-hiba,' it should be rejected.

Acknowledgments

The author would like to thank Dr. John Creech, former Director of the U.S. National Arboretum, for information concerning Unger and Boehmer; Mr. Barry Yinger, Head of the Horticulture Department, Somerset County Park Commission, for providing the author with a copy of Somoku Kihin Kagami; Mr. Hitoshi Kanegae of New England Bonsai Gardens for his help with the Japanese language; Istvan Racz for taking the pictures of the Larz Anderson Collection, and the Library of the Arnold Arboretum for keeping the Yokohama Nursery catalogues for all those years. A generous grant from the Arnold Arboretum Associates was helpful in funding the publication of this work.

Peter Del Tredici is Acting Editor of Arnoldia and Curator of the Larz Anderson Collection of Dwarf Plants.
References


Portraits
of the
Larz Anderson Collection
1913–1989
Acer buergerianum, Trident Maple (#870-37), started in 1852. Top left, the plant c. 1913, 58 cm high (23 in). Bottom left, the plant in 1933. Above, the plant in 1989, 70 cm high (28 in). Photo by Rácz and Debreczy. Note how the plant has remained in the same container for over 75 years.
Chamaecyparis obtusa 'Chabo-hiba,' Compact Hinoki Cypress (#892-49), started in 1787. \textbf{Left,} the plant in 1952. Notice how the branches are tied to bamboo sticks to hold them in a horizontal position. \textbf{Above,} the plant in 1989, 160 cm wide (63 in). Photo by Rácz and Debreczy.
Chamaecyparis obtusa 'Chabo-hiba,' Compact Hinoki Cypress (#880-37), started in 1832. **Top left,** the plant in 1954. **Bottom left,** the plant in 1963. **Above,** the plant in 1989, 70 cm high (28 in). Photo by Rácz and Debreczy. This unusual boat-shaped container is original and may well have been a gift to the Andersons, a “travelling bonsai,” when they left Japan in 1913.
Prunus subhirtella, Higan Cherry (#889-37), started in 1852. **Bottom left**, the plant c. 1913, 61 cm high (24 in). **Top left**, the plant in 1965. Note the same pot as in 1913. **Above**, the plant in 1989, 50 cm high (20 in). Photo by Rácz and Debreczy.
Chamaecyparis obtusa ‘Chabo-hiba’ Compact Hinoki Cypress. (#879-37), started in 1802. Top left, the plant in 1963. Above, the final result of a successful operation performed by Connie Derderian in 1969. As she describes it, “A lower branch had split away from the main trunk of 879-37. Rather than cut it off and lose it, a wedge-shaped piece of soil was cut away from the root ball to create a new plant. It was put into the container on the right.” Bottom left, the lower branch (#101-69) in 1989, 60 cm wide (24 in). Photo by Rác and Debreczy.
*Pinus parviflora*, Japanese White Pine [#893-49], started in 1887. Left, the plant in 1952. Note how bamboo sticks were used in training the branches. Above, the plant in 1989, 100 cm high [39 in]. Photo by Rácz and Debreczy.
Chamaecyparis obtusa ‘Chabo-hiba,’ Compact Hinoki Cypress (#878-37), started in 1787. Top left, the plant in 1938. Bottom left, the plant in 1954. Above, the plant in 1989, 120 cm high (47 in). Photo by Rácz and Debreczy. Note how the curved branch to the lower left of the plant has remained a constant feature over time.
APPENDIX

Bonsai Maintenance at Yokohama Nursery

The Arnold Arboretum is fortunate to have in its library the catalogues issued by the Yokohama Nursery Company between the years 1901 and 1922. Interestingly they all contain exactly the same instructions for how to take care of the dwarf plants that the nursery sold. This information has great historical significance since it is one of the earliest English descriptions of how to maintain the health of bonsai plants. The instructions are reprinted below in their entirety. According to Dr. John Creech, these instructions could well have been written by Alfred Unger's American wife, Mary, who published two books on Japanese plants around 1898.

Dwarfed Trees Growing in Jardinieres and Their Cultural Direction

Treatment of *Thuja obtusa* [= *Chamaecyparis obtusa*]. During spring and summer, by preference keep this plant in a sunny airy situation where the wind will pass freely through the branches; water once a day giving just enough to make the soil moist; in dry hot weather it may be necessary to give water twice a day. Care however should be taken not to have the soil wet and never water unless the plant needs it. Watering overhead in dry weather is bad but rain is always beneficial. During winter keep the tree in a cold greenhouse partially shaded, or in an unheated orangery, giving water about once in 10 days, the soil however must never be allowed to get dry. (The science of successful culture of all plants in pots consists in judicious watering, giving too much or too little is equally bad.)

Treated as above this plant is very ornamental on balconies, terraces, etc. If this plant is kept indoors, it should always be placed out-of-doors at night and as often as it is not wanted for decoration. Indoors it should never be exposed to the dry heat from a stove or open fireplace, otherwise the leaves will drop off and the plant perish.

*Pinus pentaphylla* [= *Pinus parviflora*] and pine trees in general growing in jardinieres require the same attention in watering and general treatment as *Thuja obtusa* but are not so much influenced by atmospheric conditions; nevertheless sun and air are necessary to maintain health, therefore keep the plants out-of-doors as much as possible.

Maples and other deciduous trees take the same treatment as *Thuja obtusa* as regards watering, but are much more accommodating than evergreens; in fairly mild climates the maples may remain out-of-doors all winter, but where the frost is very severe they should be kept in a cool cellar after the leaves have fallen in autumn; the soil must always be kept moist but not wet; early in spring put the plants out-of-doors and fully exposed to all weathers and when in full leaf use for decoration indoors as needed.

**MANURING:** When the trees commence growing in spring, we give manure twice a month, say March, April, May and June, again September and October. In the hot days of July and August, we give no manure and the same in winter and early spring, the plants then being at rest; the best manure is finely powdered oil cake or bone meal. To a jardiniere one foot in diameter we give 3 or 4 large teaspoonfuls not heaped of this dry manure spread evenly around the edge of the jardiniere; a larger or smaller jardiniere will require more or less. For a small jardiniere, say three inches by six inches, half a teaspoonful will be ample each time.

**REPOTTING:** This is done by us once in two or three years as follows; lift the plant out of the jardiniere and with a sharp pointed stick remove about one-third of the old soil around the edges and bottom, cutting away a portion of the old fine roots but none of the strong roots, then replace the plant in the same jardiniere first looking to the drainage; for a small shallow jardiniere we use a flat piece of tin or a flat crock over each hole; over this spread some rich fresh soil; neatly balance the plant and fill up with the same rich fresh soil to within one-half an inch of the rim; this holds the water and prevents the manure being washed over the sides of the jardiniere; also the soil should be made sufficiently tight round the edges of the jardiniere to prevent the escape of water, it being of the first importance that the entire ball of soil around the plant be moistened at each watering. Should the watering of the plant at any time be neglected and the soil has become quite dry, put the jardiniere in a tub of water for 10 or 15 minutes, *not longer*, and if the injury is not too serious, the plant will recover. In the case of large plants, we use hollow
crock for drainage, the same as is used by growers of specimen plants. After several repottings, the plant having increased in size, shift into a larger pot, but as dwarffness is the thing aimed at, the smaller the shift the better. Repotting should be done in February or March just before spring growth commences.

We advise when it is possible to get the above work done by a good gardener who has been accustomed to the handling of heaths, New Holland plants, etc. In the case of very shallow jardinieres we find it desirable annually to replace a portion of the old soil to maintain a healthy growth.

PRUNING: To maintain dwarffness in the trees, pinch back the young growth; this we usually do from April to the middle of June and always with the finger and thumb, a practice followed by the late Mr. Thomas Rivers of Sawbridgeworth, England, when preparing his dwarfed fruit trees fruiting in pots. In Thuja obtusa we pinch out the points of the young growth all over the plant to maintain the form; this practice we also apply to Cryptomeria and all other conifers except Pinus. Pinus: we pinch out the points of the irregular growth simply to maintain the shape of the plant. Pomegranate, Lagerstroemia indica, flowering peach, flowering cherry, etc.: we pinch back the nonflowering shoots either before or after blooming. Wisteria: in July and August we pinch back all the young growth leaving only four or five leaves on each shoot. Maple and other deciduous trees are pinched back at the same time as Thuja obtusa leaving two to four leaves as may be necessary to maintain the desired shape of the plants. Should a second growth be made, the same rule is followed of pinching out the points.
Lowbush Blueberries: Out of the Barrens and into the Garden

Ann Crichton-Harris

This neglected native has great potential as a landscape groundcover.

Busloads of fall color-watchers spend countless hours traveling the roads of New England—north into New Hampshire and Vermont, west to the Berkshires, and northeast into the southwestern parts of Maine. These visitors get a wonderful show. The fall blaze of the New England maples is world famous and justly so.

The color, of course, is evanescent. You have to watch the weather and the newspaper reports to catch it as it peaks, and it may be that you miss the best of the show because of a change in the weather. Under the best of conditions, the peak foliage color lasts only a week or two.

There is a less well-known show that is equally brilliant in color but is even better in one respect—it lasts much longer. The rare autumn visitor to downeast Maine cannot fail to be amazed by the show of color of the thousands of acres of open barrens, as the local blueberry fields are called. Washington and Hancock counties are the places to go to see one of the most remarkable color shows anywhere. Starting around the first of September and running through the end of November, or whenever snow starts to fall, most tourists miss a display of astonishing beauty. While much of the color is visible from Route 1, it is better if you strike inland a few miles off the main road. *Vaccinium angustifolium*, the lowbush blueberry that carpets the area, has an exquisite palette. Punctuated by rocks and by groups of red pine (*Pinus resinosa*) and other native plants, this part of Maine resembles an old French tapestry throughout the year.

A Multi-Season Display

The blueberry is a plant for all seasons. In early spring the leaves range from bright yellow to dark green; in May the flowers may be either white or white tinged with pink. In July the berries are beginning to turn deep blue. In the fall the colors of the leaves run from greens to deep wine red, bright red, orange red, and even a rare bright yellow. The different types have different color sequences. They compete with one another for living space, one patch pushing against another, yet each managing to keep its more or less circular shape. By mid-October the leaves are gone but the dramatic effect continues. Most of the plants have bright red, or even bright green, stems.

Very little attention has been paid to the use of these plants in ornamental horticulture. As a landscape designer in the downeast Maine area, I found this out when my clients asked me to produce a natural-looking landscape, low in maintenance, thriving on our peaty, acid soils, and having the potential to attract wildlife. Meeting all these requirements, lowbush blueberries seemed to be the answer. To my surprise, I found that local nurseries seldom, if ever, sell the lowbush blueberry, and
when they do, it is inevitably a variety selected for its fruit production rather than its ornamental characteristics. The wild blueberries are an important cash crop in the area, the bulk of the crop being processed for the commercial food industry. Most people who have tasted lowbush blueberries consider their flavor superior to the larger fruit of the highbush blueberry, *V. corymbosum*, generally the only fresh blueberry sold in grocery stores.

The lowbush blueberry is called "wild" by virtue of its heterogeneous genetic background. If you wanted to design a field that would copy nature, and if you wanted to do it without waiting twenty years for the effect to take shape, it would be almost impossible. Although different clones (as the mother plant and her rhizomatous progeny are called) often have very different properties, you cannot at this time purchase fifty plants with, say, a deep red fall color that will retain their leaves a long time, and another hundred in bright yellow, and so on. Those that you see in the fields have been there for a long time, often hundreds of years, and if you dig a few here and there from the side of the road and plant them in your own garden, you will inevitably end up with a tweedy effect. If you had in mind drifts of color, rather like bulbs planted for naturalization, then you have to be able to buy quantities of plants that have specified characteristics. It should be possible to design an "earth tapestry" that will imitate nature, and possibly improve on it, showing broad brush strokes of color as from a Jacobean palette.

**Blueberries Are Low-Maintenance**

As landscape plants, lowbush blueberries initially take some work, primarily weeding and attention to soil pH and texture, but as time goes on, they can definitely be classified as low-maintenance for landscape purposes. Once established, they need to be burned or mowed closely every second or third year. This results in more vigorous spreading and a much better harvest in the intervening years. The severe pruning also has the effect of keeping the plants lower and more manageable, and helps in controlling disease and weeds.

In the wild, blueberries grow happily in full sun and in nutrient-poor, sandy soil. This means that if you plant them in rich garden soil the weeds will benefit more than the blueberries. In general, blueberries are remarkably stress tolerant, but too much stress, such as lack of water or even a truck backing over the plants, will result in premature color change in the fall.

If a harvest of berries is desired, it is better to plant a number of different clones for increased cross-pollination. The fruit is ready to be picked towards the end of July and will continue to ripen almost until the end of August. By the end of October, the leaves will have dropped, leaving the stems to shine in the sunlight, many of them shimmering green or red against the first snows, rather in the manner of the red osier or the yellow-twig dogwood. I think this effect, when seen in sunlight, is just as dramatic as that of the leaves.

Hardy from U.S.D.A. Zones 7 to 3, lowbush blueberries are well adapted to an acid soil,
preferably pH 4.3 to 5.0, with low nutrient content. Although small plots of earth can be adjusted for acidity by incorporating peat, sawdust, pine needles, or bark, larger plantings might better be restricted to the acidic, coarse-textured soils of the northeastern United States and Canada where they flourish naturally. With this in mind, companion plants such as *Rhododendron*, *Comptonia*, *Kalmia angustifolia*, *Juniperus*, both *horizontalis* and *procumbens* 'Nana', and the heaths and heathers would be good choices for a wild or woodsly garden. Spacing for the blueberry plants is largely a matter of how long you want to wait. They propagate by subsurface, woody rhizomes and are not rapid growers, so one might start with plants fifteen inches on center for a residential area.

The Future
For the past two years, I've been collecting information on leaf and stem color, leaf retention, height, and, lastly, fruit yield of ten clones chosen initially for their striking autumnal color. This project began in September, 1987, at the Maine Agricultural Experimental Station in Jonesboro, Maine. My goal was to find clones worth propagating in quantity and eventually to make them available to both commercial horticulturists and home gardeners. I am looking forward to having named varieties with specific characteristics available in the next few years. Thus cottagers and homeowners interested in enjoying the look of the landscape—with just an occasional foray into picking enough berries for a pie or for morning cereal—will be able to realize their ambitions. Although my research has leaned particularly towards the visual aspect, I also harvested and weighed the yield from one square yard of each clone that I tagged. Yield ran from just two ounces to slightly over two pounds! Fortunately some of the highest producers in both quantity and flavor were the same ones that developed the best fall and winter colors.

Ann Crichton-Harris is a landscape designer who lives in Columbia Falls, Maine 04623.
The Magnificent Ginger

Gary L. Koller

Introduced into North America only ten years ago, *Asarum magnificum* has already attracted attention.

Horticultural and botanical aficionados who travel abroad often discover unfamiliar plants that look as though they might have garden application in their home countries. During May and June of 1978, Dr. Richard Howard, then Director of the Arnold Arboretum, visited the People's Republic of China on a tour sponsored by the Botanical Society of America and hosted by the Chinese Academy of Sciences. The delegates' travels were extensive and included a visit to the Wuhan Institute of Botany. It was here that Dr. Howard noticed an unusual *Asarum* (commonly called wild ginger) under cultivation. He immediately recognized it as "very handsome and very different" from anything he had seen before. He was given a small division only after promising not to write a description of the plant in the botanical literature, since the Chinese scientists who had discovered it in Hunan Province had not yet done so. Indeed, a full description of *Asarum magnificum* was not published until five years later, in 1983, by C.-Y. Cheng and C.-S. Yang in, fittingly, *The Journal of the Arnold Arboretum*. According to the authors, the plant grows over a wide geographical range, having been found in Jiangxi, Zhejiang, Hubei, and Guangdong provinces as well as Hunan. We believe that Dr. Howard's delivery of this plant to the Arnold Arboretum in 1978 was its original introduction into North America.

Stunning Foliage

The largest plant of *Asarum magnificum* known to this author forms a clump approximately thirty to forty centimeters (twelve to fifteen inches) tall. This large stature is one of the features that makes the plant handsome and different. Another is the large, heart-shaped leaves, with two prominent lobes, that project back from the point where the petiole is attached. The upper leaf surface is a rich dark-green color with silvery markings. These silver patches form a continuous, but irregular, band aligned parallel to the leaf lobes. Between this band and the edges of the leaf there are numerous small flecks of silver. In fanciful terms, the magnificent ginger seems to combine the elegant foliage of some of the more familiar *Asarums* with the image and presence of a variegated *Hosta*.

The flowers of the magnificent ginger are relatively large in comparison to the other species in the genus. They are about five centimeters across (two inches) and purple-brown in color. Unfortunately, they hug the surface of the ground and are often obscured from view by the foliage.

Cultivation

What have we learned about this plant during its first ten years in North America? For one thing it has the potential to become extremely popular in light of the fact that the original plant at the Arnold Arboretum greenhouses was stolen after a single division was put up for sale at the Arboretum's annual rare plant auction in 1985. Fortunately, the division had been purchased by Allen Haskell of New Bedford, Massachusetts, who generously donated a piece back to the Arboretum after the theft of our plant. Subsequently his plants and those growing in another nursery were
stolen. At this point, a decision was made to divide and distribute the remaining stock to various locations. This experience provides a clear example of the merit of sharing rare plants so that losses can be recouped by the exchange of surviving materials.

We have determined that *Asarum magnificum* is hardy out-of-doors in Massachusetts. This is somewhat surprising since the large leaves are fully evergreen. Allen Haskell reports that one year he set out five plants in his garden in New Bedford in November, a time which is less than ideal, and that all five survived. This success may have been because they were growing in a location that was partially shaded. Because the rhizomes and roots are shallow, Haskell recommends that the plant be grown in a moist, organic soil and that it be well watered prior to the freezing of the soil. In addition, plants should be sheltered from both the summer and winter sun and strong winds, which might dessicate the foliage. One plant, growing at the Garden in the Woods in Framingham, Massachusetts, which is a good five to ten degrees colder than New Bedford, failed to survive the winter. At the edges of its northern border of hardiness, it might be wise to protect the plant with an antidessicant.

Richard Weaver, former staff member of the Arnold Arboretum and now co-owner of We-Du Nursery in Marion, North Carolina, also sent us a report based on his six years' experience growing the magnificent ginger. He states that the plant sends out rhizomes up to a foot in length, which, instead of forming a clump, will produce a leaf here and there, forming a diffuse and open plant. This open character makes the plant somewhat less beautiful in the ground than it is in a pot, and suggests that perhaps the plant needs to be confined in order to look its best. The plant is fully evergreen at his location in North Carolina where temperatures have fallen as low as minus six degrees Fahrenheit.

Weaver also reports that late spring frosts have sometimes damaged the new growth on his plants and reduced their overall vigor. Last summer he moved one plant to a relatively wet site, which turned out to be a mistake. He has since moved it back to a location with better drainage. Experience has taught him that the magnificent ginger is easy to transplant at almost any time during the growing season.

**Propagation**

Propagation of *Asarum magnificum* is relatively easy, a feature that, along with its ornamental foliage, should help the plant to catch on quickly. Haskell has discovered that when he lifts and divides a plant, all of the remaining root pieces will produce new plants. When he divides a plant, he lays every root scrap horizontally in a mixture of leaf mold and sand, and covers them to a depth of

![Asarum magnificum. Illustration from the Journal of the Arnold Arboretum, 1985, volume 64, page 594. One half natural size.](image_url)
about one centimeter (one-half inch). Once the small plantlets emerge, he transplants them into peat pots. These he places in a flat that contains a shallow layer of compost. As the plants root through the peat pots into this underlayer of compost, he can harvest these roots to propagate the next generation. According to Haskell, an individual root piece can produce plantlets for up to two years.

In the garden the magnificent ginger looks good either as a specimen or in a mass planting, similar to a large grouping of hostas. As a garden combination, the bold cordate leaves of the magnificent ginger contrast beautifully with the delicate foliage of the Japanese painted fern *Athyrium goeringianum 'Pictum'*. It is also attractive when planted in islands carved within a bed of *Vinca minor*. The green of both foliages is the same shade, and visually the contrast in form and texture is elegant and appealing.

As gardeners, we owe a debt of gratitude both to Dr. Howard for recognizing a plant of distinction and bringing it home so that we could discover its beauty and its uses in the garden and to the staff of the Wuhan Institute of Botany for generously sharing this plant with us.

References


Gary L. Koller is Managing Horticulturist at the Arnold Arboretum and teaches in the Landscape Architecture Department at the Graduate School of Design, Harvard University.
BOOKS

Dr. Richard Evans Schultes


The plethora of publications on environmental conservation has produced a number of outstanding studies. The present volume, however, stands far above most of the run-of-the-mill publications. It is superb.

The author was "one of the environmental revolutionaries of the early post-war years." The main thrust of this volume can be summed up adequately by a statement found in the introduction: "It is one thing to be conscious of the damage we are doing; it is quite another matter to come to understand how to repair the damage already done and how to limit further damage in the future."


The most cogent of these nine chapters are numbers 3, 4, 8, and 9, although much of inestimable value is presented in the other chapters. The whole book is outstandingly pertinent and deserves to be read and taken to heart by all interested in environmental protection and its significance to the future of the human race.


A most charming book on a neglected aspect of horticulture, this contribution—beautifully illustrated in color and superbly published—is a magnificent credit to the authors and to the publishers.

When Mark, one of my former students at Harvard, and his wife Terry, formerly art director of the Atlantic Monthly and author of A Small Farm in Maine, decided to live in the peace and quiet of Maine, they began to investigate and cultivate "everlasting" plants—those whose beauty is preserved, and in some cases enhanced, by drying. What started out as a hobby has become a full-time effort. For the authors it is not only a financially profitable occupation but also an artistic endeavor of the most unusual nature. The book contains very detailed data on how to collect and grow, preserve, prepare, and display many everlasting species.

The book is divided into several sections: Introduction; From Seed to Harvest; Annuals; Perennials; Picking in the Wild; Designing with Everlastings. There is a selected bibliography and common-name and botanical-name indices. In the pages of The Complete Book of Everlastings, enthusiasts will find all that they need to know about this fascinating aspect of horticulture.

Prof. Richard Evans Schultes is the former director of the Botanical Museum of Harvard University, a position he held for many years.
PLANTS, GARDENS, AND LANDSCAPES AT THE ARNOLD ARBORETUM

An unparalleled array of unusual plants at the Annual Plant Sale on September 17, a major design exhibition, and a series of special lectures and symposiums on gardens and landscapes are all part of activities at the Arnold Arboretum this Fall.

PLANTS, PLANTS, PLANTS (THIS YEAR MORE THAN 5000!)

The opportunity to obtain the rare, the unusual, and the recently introduced is key to the yearly popularity of the Arnold Arboretum's Annual Plant Giveaway and Rare Plant Auction (Sunday, September 17, at the Case Estates, beginning for members at 9:00 a.m.). The Arboretum has a long-standing reputation for its plant introductions (more than two thousand over the years), and this year’s plant sale will include some first-time offerings to North American plant enthusiasts. Plants collected by staff members in China and Japan; herbaceous perennials from shy to rampant; trees, shrubs, vines, conifers, and a few house plants - all will be waiting in the Barn at the Case Estates (no telephone orders, no advance sales!) Also on the program are the Arnold Arboretum Associates competitive Silent Auction of specially donated plants and the Rare Plant Auction at 1:00 p.m. when the “best of the best” go on the block.

Beginning in 1885, English garden designer Gertrude Jekyll photographed gardens. This exhibit shows the evolution of her own garden, her fascination with the rural Surrey landscape, and her wide range of interests in the decorative arts. As her own eyesight deteriorated, she used the accurate vision of the camera to capture landscape images that she could no longer clearly see. Included in the exhibit are previously unpublished photographs of architecture and plant combinations as well as records of her design work at Millmead. A sequence, “The Seasons of Munstead Wood,” presents 48 pictures of her own garden over several decades.

“Gertrude Jekyll: A Vision of Garden and Wood” will be on display in the Hunnewell Visitor Center of the Arnold Arboretum seven days a week from October 14 to December 1.

In association with the exhibit architectural historian Judith Tankard, co-curator with Michael Van Valkenburgh and co-author of the book “A Vision of Garden and Wood,” will present a slide-lecture on Gertrude Jekyll: on Tuesday, October 31 at 7:00 p.m. in the Hunnewell Visitor Center.
What southern plants should northern gardeners be growing today? Which of our native southern shrubs and vines are not only hardy in the northeast but provide new interest in a familiar palette of plants? Is the southeastern United States indeed becoming “the hub” when it comes to new plants and gardening techniques?


Opinionated, outspoken, and immensely knowledgeable, Michael Dirr will make a rare appearance in Boston when he takes “A Fresh Look at Southern Plants for the Northern Garden” in the first of the Arboretum’s three Thursday evening lectures, October 19 at 7:00 p.m. This program will be held in the Frechette Conference Center of the State Laboratory Building, 305 South Street, Jamaica Plain. The auditorium is immediately adjacent to the Forest Hills “T” station. On-site parking is available for this lecture.

The long career of Fletcher Steele, who made his first garden in 1915, his last in 1970 a year before his death, is a landmark in the history of American gardens. The designer of Miss Choate’s garden at Naumkeag (the Blue Steps, the Afternoon Garden), Steele called himself a “landscape sculptor.” He created more than 700 gardens, and wrote over a hundred articles and two books on subjects from history to horticulture. His work is considered an important link between 19th-century Beaux Arts formalism and modern landscape design. Throughout his career his gardens had historical references, though in his later works color and the shaping of abstract space were of increasing importance. “In the spring,” he wrote, “one can have sheets of flat daring color that leave the frantic cubist painter speechless.”

Robin Karson, a Contributing Editor of Garden Design and Landscape Architecture, has written the first critical biography of Fletcher Steele. She will lecture at the Hunnewell Visitor Center at 7:00 p.m. on Thursday, October 26, on “The Garden-making of Fletcher Steele.”

When virtually any aspect of the plants and gardens of Ireland is considered, the name of Charles Nelson comes to mind. Taxonomist to the National Botanic Gardens at Glasnevin, Dublin, Dr. Nelson is also a garden historian, writer, lecturer, television gardening “guru,” and plant collector.

Foundation chairman of the Irish Garden Plant Society, he is well known for his many books and articles on the history of gardening and garden plants (see Arnoldia Winter 1982-83, “Augustine Henry and the Exploration of the Chinese Flora”) and has collaborated with botanical artist Wendy Walsh on a series of books about Irish garden plants including, “An Irish Flower Garden” (1984) and two volumes of “An Irish Florilegium.” The Arnold Arboretum has joined with The Trustees of Reservations to co-sponsor a lecture by Charles Nelson, “Irish Gardens and their Plants, A Heritage of Beauty” on Thursday, November 2, at 7:00 p.m. at the Hunnewell Visitor Center. An informal reception with Dr. Nelson will follow the lecture.
Other plants and gardens lectures at the Arboretum this Fall include Italianate Gardens in the New Hampshire Landscape, a survey of the elegant formal gardens near Cornish, New Hampshire, and the designs of Charles Platt, Rose Standish Nichols, and Ellen Shipman, as well as the gardens of Stephen and Maxfield Parrish and Augustus Saint-Gaudens (Wednesday, October 25, 2:30 p.m. HVC) and a continuation of the Home and Garden series in Great Gardens of Britain in the 20th Century. Three lectures will explore public gardens and the role of conservation; garden design and modern literature (the gardens of the "Bloomsbury" literary set); contemporary plantspeople and their private gardens: Christopher Lloyd, Penelope Hobhouse, Rosemary Verey, and Marjorie Fish. (3 Thursdays, November 2, 9, and 16/ 10:30 a.m.-12:30 p.m. HVC). ●

Two all-day garden design symposiums will be offered by the Arboretum this fall. Landscaping with Perennials: the Cultivated Choice on October 14 and European Garden Style: A Contemporary Interpretation on November 11. Perennials this year considers the many benefits of combining herbaceous perennials, bulbs, and annuals in the garden. Experts from London’s Chelsea Physic Garden, New England, and the Southeast are among the speakers. A new symposium topic, European Garden Style examines the influence of classical stylistic elements and discusses their applications for the contemporary American garden designer. For further information on lectures and symposiums contact the Education Registrar at the Arnold Arboretum. ●

This year’s summer interns included students from California, Iowa, Virginia, Washington, and Nova Scotia, Canada. During their time at the Arboretum, trainees worked alongside the staff in the greenhouse, on mapping and labelling, and in grounds maintenance. They attended classes in Horticultural Maintenance, Woody Plant Identification, and Landscape Design Principles as well as field trips to private and public gardens. Recent trainees have come from Australia, New Zealand, Germany, and England as well as all regions of the United States. Applications for 1990 will be available in October and are due by February 1, 1990.

A 100-year-old penjing specimen of Gingko biloba recently purchased from Mr. Hu Yun-hua of Shanghai Gardening Service, China. Photo by Racz and Debresczy.

BONSAI AUCTION TO BENEFIT ARBORETUM

New England Bonsai Gardens, Inc. in South Natick will auction three specimen-quality bonsai trees on Saturday, October 14th, at 4:30 P.M. Twenty-five percent of the proceeds from these sales will be donated to the Arnold Arboretum to benefit the Arboretum’s Larz Anderson Bonsai Collection. The auction is one of several events featured during New England Bonsai’s weekend-long fall celebration. For further information call 508-653-6330 or 617-237-5111.

Woody Plant Identification class at the Arnold Arboretum
HOW DOES YOUR GAURA GROW?

As some of you know, this year’s Plant Dividend mailing was not a complete success. Approximately 10% of the plants did not arrive in good condition. We improved our packaging and sent replacement plants, but even some of those were beyond salvage, and many of you remain disappointed. We have learned the hard way that mailing perennials requires special packaging. Rather than send more plants in a third mailing attempt, we have offered the two following options to members who have reported problems with their Gaura.

1. Three Scilla pratensis, “Meadow Squill” bulbs will be mailed to you in mid-September. Although not a newcomer, this late-flowering bulb is still unfamiliar to most gardeners and will bear brilliant, mildly fragrant, veronica-violet flowers on an 8 inch stalk in late May and early June. (2) You may pick up a live and healthy Gaura lindheimeri, or any other yellow-tag plant, at the annual Plant Sale on September 17. When you arrive at the Plant Sale, pick up a coupon at the Membership Sign-Up desk before entering the Plant Sales area.

Members who sent back the pink response card enclosed with the Gaura, notifying us of their plant’s demise, will automatically receive bulbs unless they call to notify us otherwise.

If you received a badly damaged Gaura which did not survive, but have not yet notified us, and want to receive bulbs or a replacement, please call or write Jeanne Christianson, 524-1718, as soon as possible.

Again, we apologize for any inconvenience and disappointment and promise that next spring will bring you a dormant, but healthy, Actinidia kolomikta.

THE CONTRIBUTORY PORTION OF YOUR MEMBERSHIP

On July 1, 1989, the Arnold Arboretum, in anticipation of Internal Revenue Service requirements, began identifying for Harvard University the contributory portion of membership dues paid, i.e. that amount in excess of the actual cost of benefits offered.

Some of you have already received gift acknowledgements from Harvard, thanking you only for the contributory portion of your membership dues. These acknowledgements are intended for your use as a tax receipt. Gifts over and above your membership dues are 100% tax deductible and will be acknowledged as such. These include gifts to the Spring and Fall Appeals.

Following is a list of the Contributory portion of dues paid for each category of Friends Membership.

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ATTENTION ARNOLDIA SUBSCRIBERS

Why not become a member of the friends of the Arnold Arboretum and receive additional benefits? A recent evaluation of the costs associated with publishing Arnoldia has forced us to realize that we cannot continue to offer subscriptions to non-members at the previous rate. Therefore, as of January 1990, the subscription rate for Arnoldia will be $20 for domestic subscribers and $25 for foreign.

As an individual member of the Friends of the Arnold Arboretum ($35), you would receive a number of exciting benefits in addition to Arnoldia: an Annual Rare Plant Dividend each spring, a free plant at the Fall Plant Sale, members-only Rare Plant Purchase Opportunities, discounts on courses and in our Shop, access to the Plant Information Hot Line, the Library, and the Plant Identification Service, a free Arnold Arboretum window decal, and a map of the grounds.

Watch for the membership application form enclosed with your Arnoldia subscription renewal notice in November, or request a membership application form right now by calling 524-1718.
1913-1914
Bulbs, plants, Seeds, etc.

DESCRIPTIVE CATALOGUE
OF
The Yokohama Nursery Co., Limited.

1. Kirengeshoma palmata.
2. Shortia uniflora.
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