



Improvement Projects



Tree Labels

A new collection of labels have been installed on selected trees. The black labels clearly identify the tree's common name, scientific name, area of origin, and scientific family. Larger specimen trees have trunk labels and smaller trees were installed with limb tags. The spring assembly, pictured behind the bottom of the label, prevents the growing trunk from absorbing the bolt. This attractive Paperbark Maple, (*Acer griseum*) is from the Aceraceae family and originates from Western China. See this issue's insert, "Winter Beauty Treasure Hunt", and test your plant identification skills when visiting this winter at the Acton Arboretum.

The Friends of the Acton Arboretum have donated \$11,800 in trail improvements to the Town of Acton. Over the past spring and fall, the main loop in the formal area by the butterfly garden and herb garden has been widened to five feet, stone dust applied up to a depth of six inches and cobblestones installed to edge the trail. Dan Lenox's landscaping firm did the construction. The trail was redesigned to be handicapped accessible. The cobblestones provide a physical boundary for the visually handicapped.



Trail Resurfacing

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Red Leaves of Autumn —Window-dressing or parasol?

When autumn comes in Massachusetts and other northern states, we expect to see our trees bathed in brilliant reds and yellows. Why do trees put on a light show just when the growing season is ending? We know that chlorophyll, a green pigment in leaves, gathers light energy and turns it into food energy to fuel growth. For plant scientists, yellow colors of autumn are far easier to understand than brilliant reds. In fact, the yellow color has been there all along. When summer is over, chlorophyll begins to break down, and the yellow color that has been hidden shines through. Reds, however, don't hang around all summer. A leaf is coming to the end of its life in the fall, and yet it calls out the reserves to go into a burst of manufacturing to produce the pigments that give us spectacular displays of red autumn leaves.

But... why? Why get all gussied up when you've got nowhere to go? Early plant biologists thought perhaps red pigments were being manufactured as a sunscreen to

protect remaining green pigments from sunburn. Because they couldn't figure out how this actually happened, their sunscreen idea faded and was discarded. Later scientists learned that these red pigments don't absorb ultraviolet radiation well and are not an effective sunscreen in the usual sense.

However, one scientist, David Lee, now at Harvard University, thought there might be some truth to the sunscreen idea and set out to learn just what benefit such costly red coloration might have for the tree. After trying various ideas, he and a fellow scientist, Kevin Gould, learned one thing: aging leaves of autumn are better at capturing sunlight than they are at using that sunlight to make food. In fact, when more sunlight is absorbed than the leaf can use, food production drops. Chilly fall temperatures slow these chemical reactions, increasing the imbalance. Rather than protecting the leaf from sunburn, red pigments make its failing food production mechanisms more efficient.

Why should a tree need a burst of energy as it begins to enter winter sleep? Energy is sorely needed to pull nutrients like nitrogen and phosphorous out of aging leaves into the part of the tree that can withstand winter temperatures. Evidence continues to build that the flush of red autumn color in colder climates is a safety measure against light overdose in leaves nearing the end of their growing season. Scientists are still discovering benefits that red pigments bestow, such as acting as a leaf antifreeze on frosty fall nights and signaling that a tree has good defenses against fall-active predatory insects like aphids. The question remains: if red pigments are so great, why don't all leaves turn red?

Source: "Why Turn Red?" by Susan Milius. *Science News*, October 26, 2002, vol. 162, pp. 264-265.

Gift of New Benches

The Friends of the Acton Arboretum acquired five new wooden benches for the Arboretum. Two were donated, as noted below, and the others funded by the Friends of the Acton Arboretum. They were placed in the following locations:

- ◆ To the right of the butterfly garden
- ◆ Near the top of the rise by the apple grid in the main lawn area, donated by Sid Levin in memory of his wife, Ilene Atkins Levin
- ◆ Along the left side of the main lawn loop, parallel to Taylor Road
- ◆ Across from the sun pond, donated by the Acton-Boxborough High School Class of 1960
- ◆ At the end of the footbridge, looking toward the hosta garden

Tribute to Dr. Richard A. Howard

Dick Howard, fondly remembered by other founders of the Acton Arboretum, passed away on September 18, 2003. He was a Director of the Arnold Arboretum, professor of Botany at Harvard, a prolific author and recognized expert of plants of the West Indies. Sandy Bayne recently recalled how he became involved with the Acton Arboretum. Sandy agreed that it was serendipity when she and Bev LaFoley, Radcliffe Landscape Design students, contacted the Arnold Arboretum for help with founding the Acton Arboretum. Director Peter Ashford told her that Dick had recently retired and moved to Acton and suggested asking him for help. Dick responded with characteristic generosity and set off to do a plant survey of the land. He developed a catalogue of dried specimens, which Sandy noted are in the collection of the Harvard Herbarium today. In an ex-

ample of his botanically based humor, Sandy told how he entered a sample of duckweed, the tiny green plant that dominates the surface of the farm ponds in the summer, as an horticultural exhibit to a Massachusetts Horticultural Society Show for judging.

Not only a man of letters, he did a great deal of physical labor to tame the property, which had poison ivy vines with trunks of enormous girth choking the grid of apple trees. Many observed an elderly gentleman in uniform weed whacking in the July heat. This was perhaps not so incongruous, if they knew of Dick's field work in the West Indies. In fact, he received a Legion of Merit for developing survival manuals for GIs in the island jungles of the South Pacific. During his Navy career, he set up a kitchen and gave cooking sessions to generals who were taught how to eat taro, palm cabbages and lobsters.

As director of the Arnold Arboretum, he resided at the Case Estates in Weston, surrounded by beautiful and choice trees and shrubs. When the Case Estates was closed after his retirement, he arranged to have many trees brought into the collection of the Acton Arboretum's original nursery. A prominent example of his generous plant contributions is the crabapple allée. This walkway leads you by the daylily collection to the hosta garden to the left and swale plantings of shrubs and roses to the right. He was generous in other ways to the community of Acton, giving lectures to the Senior Center from his collection of 65,000 slides. To honor his enormous contributions, the Friends of the Acton Arboretum are dedicating the new tree identification labels to Dr. Richard A. Howard. It seems a fitting tribute to the man who helped acquire the tree collection years ago.

----- Share with friends and neighbors -----

Membership Application

Name _____

Address _____

Telephone _____

Type of Membership _____

___ \$15 Individual

___ \$25 Family

___ \$40 Supporting

___ \$100 Corporate

___ **New**

___ **Renewal (Check mailing label for last renewal date)**

Please mail to:

Friends of the Acton Arboretum

P.O. Box 2607

Acton, MA 01720

Commemorative gifts, honoring marriages, births, deaths or other special dates are gratefully accepted and recorded in a commemorative listing.

Membership Benefits for Friends

- **A Spring and Fall newsletter**
- **Seasonal walks, talks and workshops**
- **Civic pride in a special gift of land used for enjoyment and education**

The Acton Arboretum is town conservation land managed by the Acton Natural Resources Department and the Acton Conservation Commission.

Friends of the Acton Arboretum, Inc.
P. O. Box 2607, Acton, MA 01720

Board of Directors

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Our Mission

To raise and donate funds, materials and services to the Town of Acton for the development and maintenance of the Acton Arboretum; to educate the community about the unique environmental, horticultural, geological and historical qualities of the Arboretum property, about the process of wetland and field succession, and, in an era of decreasing public funds and natural resources, about conservation, effective horticultural practice; and generally to do all the things permitted to non-profit organizations under the provisions of Chapter 180 of the General Laws of Massachusetts and Section 501(c)(3) of the Internal Revenue Code of 1984, as from time to time they are amended.

Arboretum Notes produced by Cathy Fochtmann and Joan Yatteau

