



# Highstead Log

Spring  
News 2003

## Highstead Arboretum

### mountain laurel: Kalm sees

*"The Kalmia latifolia was also in blossom. It rivals the preceding one in the beauty of its color; yet though it is conspicuous in regard to the color and shape of its flowers, it is in no way remarkable for smell, such as the magnolia is, for it has little or no smell at all. So equally and justly does nature distribute her gifts; no part of the creation has them all, each has its own, and none is absolutely without a share of them."*<sup>1</sup>

So eloquently did Peter Kalm describe in his diary the beauty of the mountain laurel in flower, and also the fairness of Nature. These gifts are not always given an apparent form for us to smell or view. Many times a second look is required to uncover the generosity of Nature. So it is with mountain laurel.

Mountain laurel (*Kalmia latifolia*) is a shrub which is native to the east coast of North America. As a broad-leaved evergreen, it maintains year-round interest in the landscape, only calling attention to itself in late May as the flower buds swell, and early June as the flowers expand to their full glory.

In nature, one will encounter a color range in bud and flower from a pure white to a deep, rich pink. When seen en masse, this sweep of color is breathtaking, and shows the subtlety and richness of Nature's gift. Over the years, many a keen eye has found greater variation in bud and flower color, and form. Through selection, cultivation, and hybridization, these variations have been extended to us through the nursery trade. The color of bud and flower certainly were a starting point, but it is also the unusual banded flowers (a botanical form), leaf size and shape, and growth characteristics that have inspired plant breeders.

In the wild, mountain laurel can be found growing in a variety of locations, but all are typically sited on well-drained, acidic soil. This is typical of plants in the heath family (Ericaceae). At the Arboretum, mountain laurel can be found growing within inches of standing water in the swamp habitat, and also at the top of a dry escarpment. The most fascinating aspect of these site differences is the resulting growth variation. Shade or sun, dry or moist, each change in environment has an effect on growth and flowering pattern. The mountain laurel found growing on dry, nutrient-diminished, fast-draining soils will suffer heavily in times of drought. But because these areas typically do not offer much of a canopy, these

same laurels will flower more prolifically due to the increased sunlight. On the other side of this are the laurels found in moister soils with an overhead canopy. The resulting shade not only prevents flower formation, but results in an upright, strong-stemmed growth which can be exaggerated in appearance as the plants reach towards the light. These stands can be the most magical and enchanting to come upon, achieving the true splendor of mountain laurel in a woodland setting. In between these two extremes, are the stands of mountain laurel found in good soils and full sun, creating thickets referred to as laurel hells, for their dense growth is nearly impenetrable.

### anther the question

Look closely at the flower of a mountain laurel and you will notice the five petals of the flower are fused together, forming this five-lobed cup. The ten stamens arch outward with their tips neatly tucked in tailor-made pouches. It was originally thought that the anthers would fling their pollen toward the pistil in an attempt at self-fertilization, but it was discovered that mountain laurel do not often set seed if self-fertilized.

Closer inspection reveals Nature's greater plan. The weight and proboscis (nose) of a visiting pollinator (in this case a bumblebee) is sufficient to spring the anther and filament, launching a shower of pollen on the bee, which then proceeds to transfer pollen to the pistils it contacts as it moves along to the next flower. This cross-pollination allows for an increased chance for natural variation, one of Nature's hidden gifts.

### burl lives

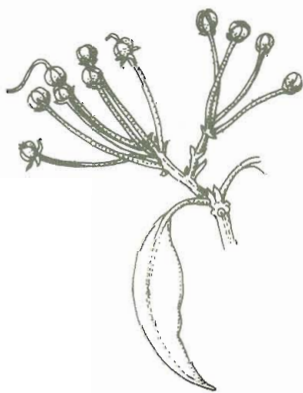
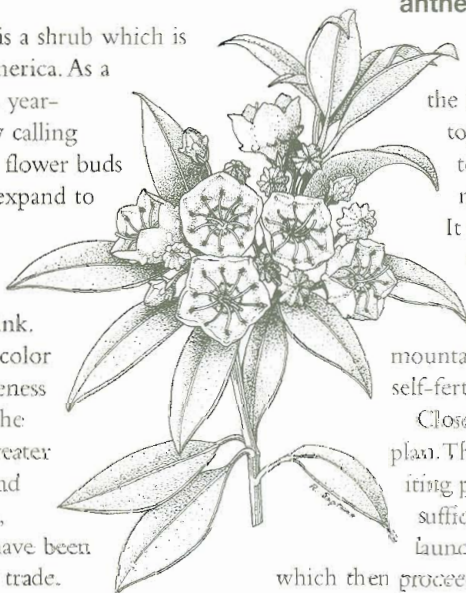
Another of Nature's gifts given to mountain laurel can be observed year round. This structure, referred to as a *lignobur* but most often called a *burl*, requires a look at, or just below, ground level. This modified stem tissue is *Kalmia latifolia*'s secret survival tool in times of drought, mechanical injury, and even fire. Tucked within this tissue are dormant buds. Areas with stands of mountain laurel that have been swept by fire or clear-cut will re-sprout with vigorous, multi-stemmed growth in the years following injury. Recently, research has been undertaken by Peter Del Tredici of the Arnold Arboretum in Jamaica Plain, Massachusetts. An interesting



the typical bud form  
of a mountain laurel flower



a flower of mountain laurel  
showing the anthers tucked back  
into the pouches on the  
fused petals



the truss of a  
fertilized mountain laurel  
inflorescence showing the  
resulting seed capsules



## mountain laurel: burl lives

finding of Dr. Del Tredici's research (some of which occurred at Highstead), is the diminished formation of burls on tissue-cultured plants. With this structure missing from many of the plants propagated for the nursery trade, the question arises as to the ability of these cultivated plants to survive traumatic injury. Dr. Del Tredici's research continues in this area.

The illustration in the center of this page offers a view of this structure, its formation and physical attributes, as well as the re-sprouting or regeneration that occurs after traumatic injury (typically fire, drought, or hard pruning).

### cultivated tastes

#### Soil & Site Preparation

The first step in the decision to introduce mountain laurel into the landscape is site selection. Often found growing beneath a light tree canopy or along a woodland edge, it apparently does best with some degree of shade. A protected location can also extend its bloom time. Mountain laurel will also grow well in full sun, as long as it is well-mulched and protected from wind.

A well prepared planting site is the key to success with any planting. Acidic and well-drained soils are the preferences of ericaceous plants. The optimal pH level is below 5.6, which, if not present, can be achieved through the introduction of peat moss or sulfates (use great caution when working with sulfate, especially if not in the pelletized form).

There is an important point to keep in mind: amended soils will revert to their original pH over time, so continued monitoring and amending will be necessary. If you are planting a single specimen, amending the soil to include an area one foot beyond the drip-line of the shrub should be sufficient.

With the exception of the densest of clays, where the cost of amending may prove prohibitive, drainage can be improved with the introduction of organic material and larger particles such as sand. Your local Cooperative Extension Service can be of great assistance if you require a soil test. In the case of very poor drainage, many opt to create beds on top of the existing soil, mulching well to control temperature extremes and erosion.

#### Transplanting

Mountain laurel can be moved at any time of year the ground is not frozen, but early spring or autumn are the best. As with most woody plants, early autumn is

preferred, since the above-ground portion of the plant is not as active at this time, and the plant will concentrate on root growth. As long as the site is well-drained, and the plant is well-mulched, heaving during the ensuing winter months should not be a problem. During any extended winter dry spell the transplants should be watered. As much harm as good can be done through watering. When watering during dry spells, be sure to check the soil near the root mass to avoid over-watering.

As *Kalmia latifolia* is very accustomed to the climate in which it has been grown, try to determine the provenance of any plant purchased from a nursery. Freshly dug and locally grown are the best if you can find them. If the plants are container grown, be sure to tease out any roots that have begun a circular or spiralled growth around the root mass before setting the plant in the ground. This step, which is often overlooked, will prevent the roots from girdling the plant.

#### Fertilizer

With mountain laurel, a little fertilizer can go a long way. Though mountain laurel can be found growing in some of the most infertile locations in the wild, a little fertilizer can help it to thrive in the cultivated landscape. Again, a soil test is a good starting point for determining what amendments, if any, are necessary.

At Highstead, the *Kalmia* Collection is fed once each year in early

December with an organic fertilizer (5-4-4 mix). Organic fertilizers require a few months to break down into a useable form. By applying this in December, it will be available to the plant during the season of active growth.

#### Mulching

When mulching, take your example from Nature. In the wild, mountain laurel is most often found surrounded by leaf litter. This natural mulch helps to preserve moisture and maintain a more uniform soil temperature. In the home landscape it will do the same, and reduce the need to weed!

The material chosen is mostly a matter of personal preference. Wood chips, bark nuggets, buckwheat hulls, or shredded leaves are all good, as long as they are applied to a thickness of two to four inches (no more than two inches as you get close to the stem). All mulch will break down over time, so continued additions will be necessary. How often these additions are made will depend on the material chosen.

Mountain laurel (*Kalmia latifolia*), the State Flower of Connecticut, grows extensively and naturally at Highstead Arboretum. This led to the decision to devote a section of the grounds to a concentrated display of laurel species, forms and cultivars.

Set on a previously disturbed site, the *Kalmia* Collection at Highstead was begun in 1989.

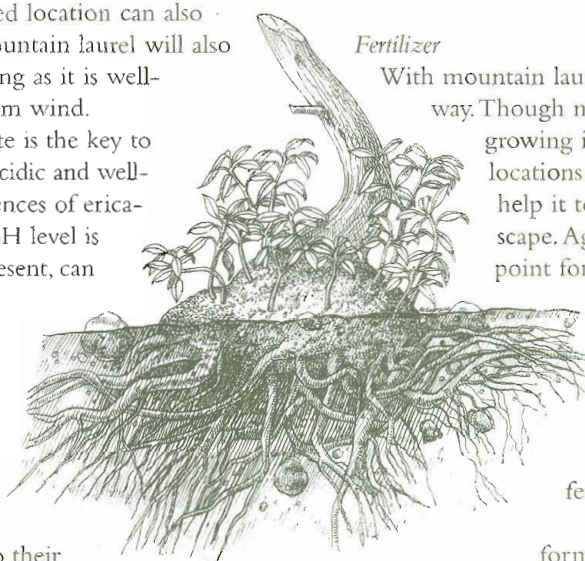
This collection is part of the North American Plant Collection Consortium (NAPCC). This consortium was formed in the early 1990's to ensure the future biodiversity of plants in North America.

Highstead's collection is included, due to the depth of naturally occurring mountain laurel on the property, and the number of cultivars and forms represented in the planted area (72 at last count).

Much of the breeding and cultivation of mountain laurel was and continues to be done by Richard A. Jaynes, whose book,

"*Kalmia, Mountain Laurel and Related Species*," is recommended reading for additional information.

The Arboretum is grateful to Dr. Jaynes, his staff at Broken Arrow Nursery in Hamden, CT, and the Mezzitt family's Weston Nurseries in Hopkinton, MA, for their assistance in keeping this collection as complete as possible.





# *Kalmia latifolia*

## cultivars



*Of the seventy-two cultivars and forms of mountain laurel in the collection at Highstead Arboretum, the seventeen pictured on this page represent some of the cultivars available in the nursery trade and are recommended by the staff at the Arboretum.*

1. 'Bay State' 2. 'Bullseye' 3. 'Carousel' 4. 'Comet' 5. 'Galaxy' 6. 'Kaleidoscope' 7. 'Minuet' 8. 'Nathan Hale' 9. 'Olympic Wedding' 10. 'Peppermint' 11. 'Pink Surprise' 12. 'Raspberry Glow' 13. 'Sarah' 14. 'Sharon Rose' 15. 'Silver Dollar' 16. 'Tiddlywinks' 17. 'Tightwad Too'

# MOUNTAIN LAUREL *Kalmia latifolia*

Cultivar/Form	Qualities		
'Alpine Pink'	pink flower with white center	'Olympic Fire'	deep red bud, pink flower
'Angel'	pure white flower	'Olympic Wedding'	pink bud, pink flower with maroon band
<i>f. apetala</i>	flowers lacking petals	'Ostbo Red'	bright red bud, pink flower
'Bay State'	coral-colored flower	'Paul Bosley'	rich pink bud, medium to strong pink flower
'Big Boy'	large leaves, pink flower	'Peppermint'	white flower with candy stripe
'Bravo'	buds and blossoms dark pink	'Pequot'	red bud, light pink flower
'Bridesmaid'	deep pink flower with white center	'Pink Ball'	light pink flower; tight, round truss
'Bristol'	broad cinnamon-maroon band	'Pink Charm'	red bud, rich pink flower with red ring
'Bullseye'	white flower with cinnamon band	'Pink Frost'	rich pink bud, pink flower
'Candy'	dark pink bud, dark pink flower	'Pink Globe'	reddish-pink flower, globular
'Carol'	deep red bud, white flower	'Pink Surprise'	deep pink bud, pink flower
'Carousel'	white flower with cinnamon band	'Pinwheel'	white flower with cinnamon band
'Claydian Pink'	pink bud, clear pink flower	<i>f. polypetala</i>	flower with feathery petals
'Comet'	white flowers and a more dense plant habit	'Pristine'	compact habit, white flower
'Compacta'	very compact, dense globe	'Quinnipiac'	red bud, soft pink flower
'Elf'	semi-dwarf habit, light pink-white flower	'Raspberry Glow'	deep red bud, deep pink flower
'Emerald Sheen'	thick, rounded, dark green, glossy foliage	'Richard Jaynes'	red bud, dark pink flower
'Firecracker'	bright red bud opens to pink	'Sarah'	red bud, pink-red flower
'Freckles'	pink bud, white flower w/ ten cinnamon spots	'Sharon Rose'	buds bright red, fading to pink when open
'Fresca'	white flower with burgundy band	'Shooting Star'	white flower, distinctly lobed
'Galaxy'	cinnamon-maroon pigment on inside	'Silver Dollar'	pinkish bud, large white flower
'Goodrich'	cinnamon-purple flower with white border	'Snowdrift'	white flower
'Good Show'	deep pink in bud, rich pink when open	'Star Cluster'	white flower with maroon band
'Heart of Fire'	red bud, pink flower	'Stillwood'	white bud, white flower
'Hearts Desire'	red bud, cinnamon-red flower	'Sunset'	bright red bud, opening to strong pink
'Hoffman's Pink'	medium pink in bud, light pink when open	'Tiddlywinks'	semi-dwarf habit, pink flower
'Kaleidoscope'	cinnamon flower edged in white	'Tightwad'	large pink buds, which never open
'Keepsake'	cinnamon maroon flower inside w/ white edge	'Tightwad Too'	medium pink buds; resists leafspot
'Keystone'	light pink bud, near white when open	'Tinkerbell'	semi-dwarf habit, deep pink flower
'Little Linda'	semi-dwarf habit, red bud, pink flower	'Twenty'	dark pink bud, medium pink flower
'Madeline'	only double-flowered cultivar known	'White Mountain'	white in bud and flower
'Meteor'	new 'Shooting Star' type, lavender-pink	'Willowood'	willow-leaved, flowers light pink to white
'Minuet'	semi-dwarf habit, flower w/ broad maroon band	'Window'	large, light-pink flowers, darkening with age
<i>f. myrtifolia</i>	semi-dwarf habit, variable flower	'Yankee Doodle'	red bud, white flower with maroon band
'Nancy'	bright red bud, clear pink flower		
'Nathan Hale'	red bud, pink flower		
'Nipmuck'	intense red bud, pink flower		

All cultivars listed above are represented in the *Kalmia Collection* at Highstead Arboretum, 127 Lonetown Road, Redding, Connecticut 06896 website: [pages.prodigy.net/highsteadarboretum](http://pages.prodigy.net/highsteadarboretum)



## mountain laurel: cultivated tastes



Maps showing the distribution range for *Kalmia latifolia* in the United States and Connecticut as indicated by the shading.

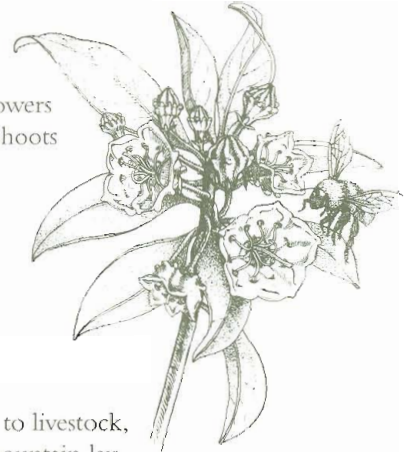
### Pruning and Dead-heading

Most often found in the wild at a height of 8-12 feet, mountain laurel can grow to 25 feet or more. Many of the cultivars are of a more compact form, or managed in the landscape. Pruning can be done to maintain shape, control size, or rejuvenate old leggy growth. It is best done in early spring before flowering. Many people prefer to wait until just after flowering so as not to miss out on the current year's bloom.

When lightly pruning to maintain shape and control size, cuts should occur at a point where lateral growth, however small, still exists and will give rise to continued growth. If a severe pruning is required to rejuvenate an older, leggy plant, cutting the mountain laurel close to the ground (6") will stimulate the dormant growth buds found in the burl. The resulting shrub will be multi-stemmed and have a denser growth habit, but this also means a few years will pass without flower. This type of severe pruning is effective on seed-grown, native mountain laurel, which has a well-developed burl. It is also most effective on those plants receiving full sun. Plants which have been propagated through tissue culture, as

most of the named cultivars, have a reduced burl structure. For this reason, hard pruning of this type of plant is not recommended.

To stimulate flower production, dead-heading is recommended. By late summer, next year's flower is already in place on the mountain laurel. The flower buds are only set on the current year's growth. Therefore, by increasing the current year's growth, one can potentially increase next year's bloom. The easiest way to accomplish this is by dead-heading this year's spent flowers as soon as possible. One or two new leaf shoots should appear, increasing the chances for flower sets to form. This process will also control growth, creating a denser plant overall. At the Arboretum, dead-heading usually takes place during the last week of June.



A bumblebee, the chief pollinator of mountain laurel, about to receive a shower of pollen.

### Deerspray

Though the leaves of this native are toxic to livestock, the native deer population will feed on mountain laurel in the winter when their digestive system changes and food is in short supply. In the interest of protecting our collection, Highstead uses the services of a local commercial spraying company for those plants we feel are too valuable to lose. This spray, unpleasant in taste to the deer, is applied in late fall, with a noticeable coating to the leaves. Though not entirely attractive, this coating will eventually break down and wash away.

1. from *Peter Kalm's Travels in North America* as edited by Adolph B. Benson, Wilson-Erickson, Inc., 1937

## A New Leaf Arboretum News

### Plants and People

After an extended period without a horticulturist, we welcome our new staff member, Kathleen Kitka. Joining us last June, Kathleen becomes our first full-time horticulturist, and we look forward to the continuous care our collections (including the mountain laurel) will be receiving.

### The Yankees Are Coming

A spring outing with the members of the fourth grade class from Brookfield brought forth an interesting observation. The group was studying a rock ledge habitat and was shown the lichen commonly known as British soldiers (or redcoats), *Cladonia cristatella*. A discussion ensued on our Revolutionary War, until a young man shot up

his hand with a burning question: When, he wanted to know, would we see some Yankee lichen? Such are the joys of educating our youth!

### A Pat on the Back

Highstead has always been proud of the publications produced in-house at the Arboretum, and their reception by members and visitors. This year our work has been recognized by the American Association of Botanical Gardens and Arboreta (AABGA) as the 2002 recipient of the *Dorothy E. Hansell Award* for Highstead's *Visitor's Guide*. Judges were impressed with both the design and content.

All illustrations of mountain laurel appearing in this newsletter are by Redenta Sopiano

"To our fathers the tree was a member of the ground.  
To our children it will be one of the most valuable of assets."  
Edmund Spenser



Highstead Arboretum  
127 Lonetown Road  
P.O. Box 1097  
Redding, CT 06873

## Highstead Programs

For outdoor programs, come dressed to walk and plan to stay one to two hours. Reservations are requested: call ahead for weather-related rescheduling. For further information, call Highstead Arboretum at 203 938 8809, 9am-4pm Mon.-Fri. There is a non-member fee of \$5 per program, unless otherwise noted.

## Spring 2003

### Wall Flowers

Saturday, March 8, 10am

Quietly blooming at winter's end, many native plants offer a bouquet for those who look twice. Observe the transformation, as these less than showy blossoms become full-blown show-stoppers as we peer through the microscope and take a magnified look at Nature's intricate hand.

### Hurry, Hurry

Saturday, April 19, 10am

As buds unfurl and daffodils bloom, we can easily overlook the smaller, fleeting beauties of our wood and swamp habitats. Join us on this guided walk as we seek the temporal joys of the woodland floor.

### Early Birds

Sunday, May 11, 6am

The early bird gets the tour on Mother's Day. Please don't miss the chance to tour the Arboretum with ornithologist, Victor Emmanuel as your guide. Reservations will be required. Invitations will be mailed in late April.

### Azalea Walk

Saturday, May 17, 10am

This guided tour of the Arboretum will focus on the beauty of the azalea collection at Highstead. Enjoy the color and fragrance of this woodland planting, while learning about deer fencing and cultural requirements.

### Garden Conservancy

Sundays, May 18, June 1, August 10

In conjunction with the Garden Conservancy's Open Days program, we will offer tours of the Arboretum focusing on the North American native azaleas in May, the mountain laurel in June, and the sweet pepperbush in August. Tours offered at 10am, 12pm, and 2pm.

### Connecticut Botanical Society (CBS)

CBS welcomes members and friends to join them on Saturday, March 15th for a lecture and tour of their herbarium at the Environmental Science Center at Yale University, 21 Sachem Street, New Haven. For more information, visit their website [www.ct-botanical-society.org](http://www.ct-botanical-society.org)



Bayberry  
*Myrica pensylvanica*  
by Carol E. Hamilton

### Botanical Art Exhibit

May 5 - June 27, 2003

Artist's Reception, Sunday, May 18, 1-4pm

The term 'wetland habitat' often brings to mind a swamp. It can be applied to other habitats, including bogs, marshes, ponds, and wet meadows. This year, the Greater New York Chapter of the Guild of Natural Science Illustrators will take a closer look at these similar yet distinct habitats and the plants each supports. The exhibit will be on view during normal Arboretum hours. A reception invitations will be mailed in May.

### save the dates

June 7th and 8th  
for Highstead's  
Members' Day  
programs

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