

NORTH  
CAROLINA *wild flower* PRESERVATION  
SOCIETY



WINTER 2003  
VOLUME XV

# North Carolina Wild Flower Preservation Society, Inc.

## Aims and Objectives

The North Carolina Wild Flower Preservation Society was formed in 1951 by a group of individuals appreciative of native plants throughout the state and region. The purpose of the Society is to promote the conservation and enjoyment of native plants and their habitats through education, protection and propagation.

Quarterly meetings are held at “natural gardens” across the state. Members exchange seeds and propagated plants at these meetings. Other excursions are organized on a local basis throughout the year.

The Society newsletter is usually issued twice a year with articles and illustrations by professional and amateur contributors.

The Shinn Scholarship/Grant Fund sponsors research on native plants by undergraduate and graduate students. The fund is supported by member contributions and by gifts and memorials. Applications are made to the Scholarship/Grant Fund Committee for awards in May of each year.

The Society is a nonprofit organization under North Carolina and Internal Revenue Service regulations. Donations are tax deductible.

*Correspondence concerning the Society and its programs should be addressed to:*

North Carolina Wild Flower Preservation Society, Inc.  
C/o North Carolina Botanical Garden  
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JOURNAL  
OF  
NORTH CAROLINA WILD FLOWER PRESERVATION SOCIETY, INC.

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## President's Message

Alice Zawadzki

### *It's the little things in life that really make a difference*

While walking out of the Saint Mary's School Chapel on Founder's Day, I asked Pearl Johnson Hunt, one of our former housemothers and second wife of Governor Jim Hunt's Dad, whether she would like my hand as we walked down the three stairs; her face lit up. On my right hand behind me was my Mom and on my left Miss Pearl. It was a beautiful moment as Miss Pearl said: "Thank you. I am really afraid of stairs."

I was reminded that *it's the little things in life that really make a difference.*

At the Friends of State Parks meeting a few weeks ago, our longtime NCWFPS members were active in their continuing, committed ways: Lib & Bob Conner, Caroline & Bob Donnan, Margo & Ken Perkins taking minutes and pictures, baking cookies and a cake, making great suggestions, bringing their great apple cider, keeping up with the membership information, sharing family stories about work in the Garden, mentioning Benson Kirkman's service to the Raleigh community and his work on the Friends of State Parks publications. Friends of State Parks have made such a difference. I remembered how Bob and Lib Conner were so instrumental in organizing Conservation Council of North Carolina 30 years ago.

At the rejuvenated BW Wells Association meeting in October that included a visit to Rock Cliff Farms, Nancy Hillmer and Ken Moore shared Maude and BW memories, identified flowers, brought the wonderful white oak NCBG style bench to honor the four original BW tireless troopers: Bill

Ellis, John Lawrence, Ray Noggle, Ed Bradley. Marlene Kinney shared NCWFPS membership info with BWWells board members and guests and recruited Jayme Bednarczyk who chairs the group of volunteers caring for the grounds and who was a key player along with Ranger Brian Bockhahn and other interested neighbors and friends in breathing new life into the Wells organization. Benson Kirkman was honored as the ring-leader of the second wave. Julie Moore continues her connection and support from long-distance.

At the Golden Corral about a month ago, NCSU professor Jon Stucky by happenstance stood next to me in line. We had a great conversation over lunch where he offered to bring grasses, sedges, and rushes to our triangle plant study group. Mary Ann Brittain from the NC Museum of Natural Science brought some of her prairie grasses to our meeting at Gardner Hall along with her story of her 4-acre prairie in Franklin County. Next thing we knew we had a field trip for our November trip where Jon found some little blue stem which came up on its own. Mary Ann was thrilled! We will visit her Bluebird prairie next year when it is blooming.

After the grass class in the parking lot, Marlene Kinney and I talked about area coordinators and more events across the state. Marlene volunteered to chair the newly formed Triangle Chapter that is evolving from our study group and join Charlotte Patterson and me on the nominating committee. Please call her if you would like to join in the fun and fellowship. Katherine Schlosser, our terrific newsletter editor, has mentioned the Greensboro area plant study group may form the Triad area NCWFPS chapter.

At lunch last week at my house, NCPCP Cecil Frost, Marlene Kinney, USFWS Dale Suiter, new botanist at NC Natural Heritage Misty Franklin, and I shared ideas on greater col-

laboration between state agencies, utilities, community volunteers and professional botanists. Misty uncovered a proposal from 1983 about rare plant volunteers propably created by Rob Sutter, former NCPCP botanist. Perhaps we will be writing proposals. Dale talked about how important it was to document volunteer time since it can be counted toward matching funds for granting agencies. The light dawned regarding those requests for documentation. Keeping volunteer records helps bring matching funds.

Also within the last month, I met Linda & Sam Pearsall at the Save Our State honors event at NCMNS. I remembered how Sam's presentation at the first Rare Plant Initiative meeting at the zoo made such an impact on my land protection understanding. His analogy of the wedding night and the every day making of the lunches compared with the process of land conservation, which includes the thrill of purchasing the land followed by the years of stewardship to protect the treasure. Linda, head of NCNHP, is now on the 14<sup>th</sup> floor at DENR where the opportunity for everyday exchanges is enhanced by proximity. NCNHP now has an additional person organizing county inventories and additional contract botanists. Together we heard Amory Lovins talk about Natural Capitalism. How do we take the waste from one activity and make it into a resource for another. How do we make our loops of capitalism include people and resources as treasures that are 99.9 % useful rather than the one million pounds of waste per person per year in the USA? That's 20 times each person's body weight per day wasted!

On the way home from NCConNet's Huddle on clean water last weekend, Grady McCallie, wildflower enthusiast and NCConNet legislative liaison, thanked me for being so welcoming to people at gatherings. We talked about volunteer

(non-staffed) organizations. How can we help them grow in leadership and effectiveness? I mentioned the “drippy faucet” concept or the drop of water in the still pond idea. Welcome folks. Help them become part of the community. Offer opportunities that are small and do-able. As people get involved, offer another idea, another possibility to consider.

As a volunteer organization with people dedicated to enjoying and protecting native plants, we and the wildflowers thrive with each person’s doing a little bit. Whether we pull the microstegia as we walk along a trail, keep an eye on a rare plant population, open a child’s eyes to the exquisite beauty of a wildflower, talk to our legislator at the diner, fill out a matching gift form at work for our NCWFPS membership and support, pot a plant in the garden path to give away, or one of the myriad of other acts of kindness to the cosmos and its creations that we do, it all adds up to make a huge contribution of time, talent, and love.

*It’s the wonderful little things that we do that make such a difference.*

Many thanks and best wishes for a peaceful, blessed New Year.

Alice Zawadzki



## The Frosted Pane

One night came Winter noiselessly and leaned  
Against my window-pane.  
In the deep stillness of his heart convened  
The ghosts of all his slain.

Leaves, and ephemera, and stars of earth,  
And fugitives of grass,—  
While spirits loosed from bonds of mortal  
birth,  
He drew them on the glass.

Charles G. D. Roberts  
1901

# Lilium michauxii: North Carolina's State Wildflower

When is a wildflower a herb?

Katherine Schlosser



After two years of tinkering with a bill, the North Carolina legislature in July 2003 voted to adopt an act naming the Carolina lily (*Lilium michauxii*) the official State Wildflower. Identified and named by French botanist and explorer André Michaux in 1803, the Carolina lily is found in most counties of our state, from the coast to the mountains. Though not listed as threatened or rare, it is a rare treat to find this beauty in the wild.

Carolina lily looks much like it's far more common cousin, the Turk's Cap lily, which may have up to six blossoms along the last twelve inches or so of the stem. The Carolina lily can sport up to three or four blossoms at the very end of the stem, though they are usually seen with only one or two, nodding down to face the soft earth from which they grow. It is a smaller plant, usually growing only 2-3 feet tall. The whorled leaves of the Carolina lily are broader toward the tip than those of the Turk's Cap, which are broadest in the middle. If you peer into the flower, the Carolina lily lacks the green "star" formed by wedges of green at the base of each petal of the Turk's Cap. It has the bright orange petals fading to a deep yellow at the center, and the brownish purple freckles, concentrated toward the center of the blossom, typical of the Turk's

Cap. In both plants, the petals arch backwards, sometimes even overlapping at the stem and exposing long stamens with prominent anthers the same color as the freckles.

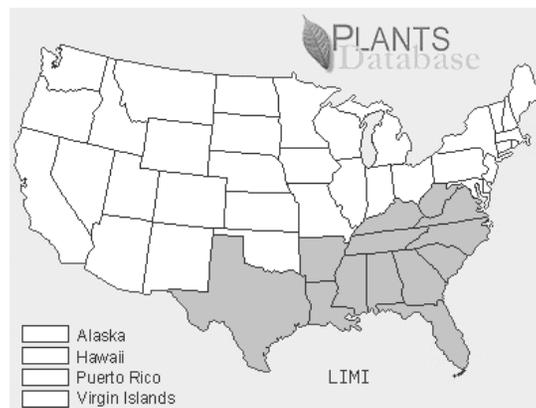
The Carolina lily is a good choice to serve as the state wildflower, as it can be found in most counties across the state. It grows best where it will receive a bit of sunlight during the day, often at wood's edge or in sparse woods. Blooming from late July and into August, it is a good foil for the greens of the forest, shining out like a beacon for those who slow down long enough to look.

So what makes a wildflower a herb? In this case, *Lilium michauxii* has been used as a food. The bulbs of several lily species have been used much like a potato, with a reported flavor similar to roasted chestnuts. They were sometimes used to thicken soups and stews, and can even today be found pickled in Asian markets.

The lilies, and the Carolina lilies especially, are so beautiful and usually so scarce that it would be folly to gather them for food. You might want to find a few to plant in your gardens, even your herb garden. At the moment, it is hard to find the true Carolina lily in nurseries. It takes patience to grow them from seed, which may require two to three years. I understand Tony Avent at Plant Delights has them in cultivation and they should be ready in the next year or so. Keep your eyes open.

*Katherine Schlosser is the Editor of the NC Wildflower Preservation Society, a member of the Herb Society of America, the Medicinal Plants Working Group of the Plant Conservation*

*Alliance, and serves on the National Herb Garden Committee in Washington D.C. A free-lance writer, she lives and gardens in Greensboro.*



Distribution map for *Lilium michauxii*. From USDA Plants Database.

# Basic Elements of Naturalistic Garden Design

Charlotte Patterson



I always find the most beautiful garden designs to be those that reflect a natural appearance. A naturalistic approach to designing a garden fits my love of native plants and my preference for relaxed garden styles. There are so many choices at native plant nurseries in our area, and at events such as the Cullowhee Native Plant Conference that it is easy to build a collection native plants.

When you buy first and plan later, you may find yourself with a hodge-podge of plants with no design. How can you tame your impulses and create a cohesive garden in the face of so much temptation? With some planning, you can incorporate natives into a suburban landscape, increase the naturalistic appearance of today's smaller spaces, and do it with an eye for continuity and balance.

Before making a plan, look at what you already have on your land. Spend some time observing the light patterns, the slope of the land, the water drainage patterns, the moisture or dryness of the soil, the temperature fluctuations, and the wind patterns. It is often helpful to spend a whole year observing your landscape to find out what happens to it during different seasons and under different amounts of rainfall. Determine what plants naturally occur on your land. Let it go for a while

and you may find some nice surprises. You can then start to “edit” out the undesirable volunteers. If the land is fairly disturbed by development, go to naturally wooded areas in your vicinity and observe which plants grow in combination.

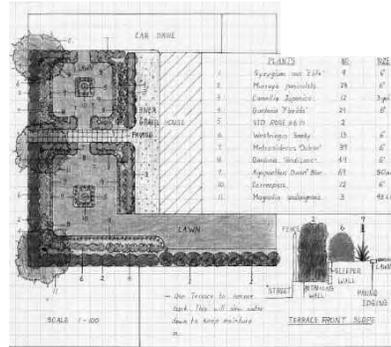
To plan your design, start with its “bones”. The trees and large shrubs you already have are the basic structure of your garden and the starting points for the rest of the design. Take into consideration the uses you intend for the spaces you want to design. Plan your paths, hard surfaces, seating areas, etc. The positions of trees and shrubs will affect the uses of your landscape for recreation, entertaining, seating, etc. Keep in mind the eventual size of mature trees and shrubs when considering whether any should be moved or removed. Deciding exactly where to plant large shrubs can be perplexing. Sometimes the result can turn out looking different from what we envisioned. I have heard some interesting suggestions as to how to assess your landscape and determine the most suitable places for shrubs, including placing cardboard cutouts in the yard, having a person stand in the spot, and viewing your landscape from the roof. I can’t say if these methods work, but if they sound good to you, try them.

Once you have established the locations of trees and large shrubs and determined any areas for specific uses, plan your design for smaller shrubs, plants, and groundcovers. Since trees are the natural bones (background) of the landscape, large and small shrubs, groundcovers and herbaceous plants should extend from them into the open areas of the design. Large shrubs and small trees become the mid-ground, adding shape, contrasting textures, and providing a canvas for the foreground of herbaceous plants. Although it is preferable to have reduced lawn, you may not want to get rid of it altogether, since lawn

areas provide valuable open space for human activities, help define the rest of your design and provide rest for the eye. Landscape designers actually look at gardens in terms of rooms with floors, walls and ceilings. Ceilings can be overhead branches and walls can be shrub barriers that help to define a secluded nook for reading or snoozing in a hammock.

When designing the garden, the design should become less formal and more naturalized as it moves away from the house. If your property is next to a naturally occurring wooded area or border, count yourself lucky, because your garden can become an extension of the existing natural area. In a natural landscape, understory trees, shrubs, and herbaceous plants flow from large trees into more open areas. By mimicking this arrangement, you can encourage wildlife to feel at home in your yard.

The areas immediately around the house should be the most formal. You can use a garden hose to determine the line of your beds, but I have found that they appear naturally to me as I rake the leaves in fall. Curved and diagonal lines look the most natural and help to connect different design elements in the landscape. Let your observations of shade and sunlight, dry and moist soil and wind patterns determine your choice of plants for various areas. If you have become familiar with the types of plants that grow in your area, you can begin to decide where to put the plants that need sun or shade, that need wetter soil, or that would stand up to winter wind patterns. Plants look more natural when planted in odd-numbered groups, such as 3 or 5, and repetition helps to unify the design when planting. I have heard designers say that you should have no more than five types of shrubs in a garden to maintain continuity of design. This rule seems a bit rigid to me, especially with so many won-



derful native plants to choose from. But repetition doesn't have to be limited to the type of shrub. You can unify a design by repeating the same color or different values (lightness/darkness) of the same color, the same leaf or flower shape, or the same shrub shape. You can see this

type of repetition or rhythm in nature when drifts of flowers that form repeating waves of color pull the eye along the landscape.

You can set the mood of a garden design by selecting specific colors, lines, textures, and shapes. Elements that produce a peaceful or restful garden include cooler colors (blue, green, violet), harmonious colors (those next to one another on the color wheel), horizontal lines, rounded shapes, and smooth/fine textures. You see these elements in Japanese gardens with their emphasis on green foliage and fine-textured, sculpted plants. An energizing garden would contain vertical lines, warm colors (red, yellow, orange), contrasting colors (those opposite one another on the color wheel), coarser textures, or columnar/pyramid shapes. Of course gardens look best when they contain a variety of these elements so that a sense of balance is conveyed. Too much sameness can become boring and too much contrast or variety can become chaotic and confusing.

You can make your garden more formal or informal based on the texture of the plants you choose. Fine textured plants, those with smaller leaves, glossy surfaces, widely spaced or lobed leaves, or long petioles, look more formal and are best viewed close up to appreciate their detail. Coarser tex-

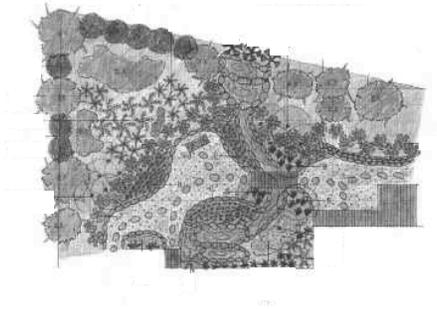
ured plants have larger, rougher, more closely spaced, or duller leaves that provide interesting contrast and are best seen in the mid-ground. These plants are more informal and can provide a more rustic appearance to the design.

Color and texture enhance the appearance of depth or distance in the garden. To extend a view and increase the appearance of distance, use cooler hues, darker color value, and lower intensity colors en masse. Cooler colors make objects look smaller and farther away. Finer and looser textures also extend a view because space is expanded as you see through branches and looser structured plants. To shorten a view, use masses of warmer hues, lighter or mid range color values, or high intensity colors. These colors decrease the distance between the eye and the object, making objects look larger and closer. Masses of warmer colors in the background make objects in the foreground appear larger in contrast. Coarser textures also advance an object closer to the eye.

In the end, your garden is an expression of you and your interests. In recent years, I have been happy to hear well-known garden designers say that what you want in your garden should influence your decisions more than the rules of color combination and structure. Let your instincts be your guide. When you find a place in nature or a garden design that really appeals to you, stop and think about what aspects of the place appeal to you most. Use your observations as your guide to your own distinctive style. Whether your style is formal and polished or

whether you take what nature provides and just “tweak” it a bit – happy gardening!

*Charlotte Patterson has been a NCWFPS member for more than ten years and has served as President of the organization. Currently serving as Historian and Recording Secretary, she also participates in Plant Rescue efforts, and enjoys spending her free time in her garden or walking on trails amidst nature's glory. She is employed by Guilford County schools*



## Landscaping With Native Plants: Bringing Natives To The Front Yard

Carole Madan

There is nothing more fun for a native plant enthusiast than using natives in the landscape. As Momma Nature, I have been saving natives for over forty years but have just begun using them in my client's landscapes in the last three years. Since I'll be preaching to the choir with regard to natives, this will be so much fun! With great joy I share with you some of my favorite plants.

I teach classes in Backyard Native Habitat and naturally love the concept of plants that not only provide food for animals and birds but also provide habitat covering for them. Little else rivals the sight of a mature Beautyberry bush (*Callicarpa Americana*) with a full weight of edible purple gems bearing so much fruit that the branches weep. The birds in my backyard go absolutely nuts over these. Admittedly, it takes a special person to value the concept of a food bearing bush in a front yard but as more and more of us spread the word of the value these plants bring as opposed to "green grass", the landscaping revolution will grow. Beautyberries can take full sun although where I live, in Georgia, I think they prefer part-shade, away the afternoon sun.

*Ilex glabra* or Inkberry is one bush I love to use in the rear landscape. This deciduous bush has wonderful purple to red stems that can get over 3" in diameter. Some landscapers use it in lieu of Nellie Bly Hollies but I fail to see the connection. My favorite use for them is far from homes because of the purple "ink" the berries have. Of course, this is why birds love

them so! They grow up to 10' in height. Personally, I wouldn't put it in a front yard unless the entire property was natural with no suburban aspects whatsoever.

Elderberry goes well in spaces that will let their naturally enormous form take over – they can get over 25' in diameter in time and as high as they are around. There are few bushes in nature as eye-catching as this one. During my last trip to the mountains, I found some huge specimens next to an old tobacco barn. The pictures are amazing - each bush was easily over 30 ft. high. Elderberry wine is said to be fine but I've never tasted it so let me know if you have. Heck, for that matter, if you ever make any, why not call this author and help me examine firsthand the fruits of your labor! Great excuse for another trip to NC!

Oak leaf hydrangeas start small but in 15 years can easily top out at 20' high and 10 – 15 wide. You may have even seen larger specimens. Their pendulous blossoms and incredible fall foliage make this a bush not to be missed. Penny McHenry, known as the Hydrangea Queen (and is founder of the American Hydrangea Society) has often been quoted as saying “the exfoliating bark is a thing of beauty in the winter landscape.” She has Oakleaf hydrangeas down her entire front drive and then more in her left rear gardens. Fabulous!



J.S. Peterson. USDA  
NRCS NPDC. USDA ARS  
National Arboretum,

Last fall, Penny invited my film crew and I into her gardens specifically to film the Oakleafs. Would you believe fall decided to wait until NOVEMBER to come? We cancelled filming four times before we finally had enough color. This Fall

I don't care when they turn and believe me, none of mine –not a single one – has begun turning Autumnal yet and it is November 5<sup>th</sup> as I type these words.

Some evergreen natives that you may enjoy using in the landscape are Dog hobble (*Leucothoe*); mountain laurel, and the native flame azalea. One of my clients has a flame azalea almost forty feet high and probably twenty-five feet in diameter. These are breathtaking when allowed to be their natural elegant form. The blooms range from flame orange to pink, white or red. These azaleas are amazing natives that everyone should have. Mountain Laurels do best in the cooler mountainous regions but I have seen them used in the landscape successfully if they have good drainage and are watered well. Dog hobbles are something of an acquired taste. I love them because I grew up with them but have clients that don't care for their rangy, almost viney growth habit.

Speaking of vines, Crossvine (*Bignonia*) is my favorite native evergreen vine. It grows to the top of three huge Leyland Cypress I have lining the back of my home and when in full bloom, the sight is beyond belief. My all time favorite vine is the Virginia Creeper (*Parathesis quinquefolia*) because of its wonderful fall foliage. Those reds and oranges take my breath away when I realize the vine has climbed to the top of a huge tulip poplar or hickory. I have this vine on almost every tree in my own backyard and have put it in many a client's yard – front, back and side. One vine I haven't used much because it grows so lushly down here in the native forest is Climbing Hydrangea (*Deucamaria barbara*). Another vine I like to use is the Red Honeysuckle (*Lonicera sem-*



©Don Kurz. Courtesy of Smithsonian Institution,

*pervirens*) because the hummingbirds love them. Although not a vine, I have to mention Red Cardinal Flower (*Lobelia cardinalis*) - one of Robyn Fletcher's favorites because it attracts hummingbirds too. I've found both the Cardinal Flower and the Red Honeysuckle appreciate ample water and high sunlight.

Pink Turtlehead (*Chelone lyonii*); Stokes Aster (*Stokesia laevis*); Blue Indigo (*Baptisia tinctoria*); Yellow Indigo (*Baptisia tinctoria*) and White Indigo (*Baptisia tinctoria*) are all favorites of both mine and Gardens of The Blue Ridge. You just cannot beat them for color at the height of their bloom time. Water for these plants is imperative although the Stokesia will take slight droughts without too much pouting. I personally grow two of the three indigos and the Pink Turtlehead although I must admit I've not kept the Turtlehead watered sufficiently and have made a commitment to it recently to be a better steward.

For Spring Ephemerals, I tend to use those plants I knew as a child: Trillium, Turk Caps lily (*Lilium superbum*) Jack In The Pulpit (*Arisema triphyllum*) Mayapple (*Podophyllum peltatum*) and the sweet little Dwarf Iris (*Iris cristata*) These all tend to like semi-shade and moist conditions as do most ferns.

A tree favored by Mr. Fletcher and many of us in the Southeast is the Sourwood. Native plant nurseries here in Georgia can almost always get me a supply of these should I want to use them in a landscape design. The fall colors cannot be beat and the spring blossom often stays on until next spring's bloom pushes them off.

My thanks to Robyn Fletcher of Gardens of the Blue Ridge Inc. - my favorite native plant nursery in all the U.S., for

his advice on the topic of Landscaping With Natives. Robyn's grandfather, Edward Robbins helped found the NC Wildflower Preservation Society along with Viola and Walter Braxton and others. The family is in its fourth generation as native plant specialists. Make a special effort to go there as soon as you can. Their website is [www.gardensoftheblueridge.com](http://www.gardensoftheblueridge.com).

*Carole Marschall Madan, "Momma Nature," graduated from UNC-G in 1973 and fondly remembers her roots in Greensboro. She is a published author and member of Garden Writers Association; Vice President of Atlanta Writers Club and founder of Alpharetta Writers Workshop. Billing herself as "a kinder, gentler Martha Stewart," her television show "Momma Nature's World," highlight native plant gardens throughout the world, will hopefully gain a sponsor and network support soon! Contact her at [madancm@mindspring.com](mailto:madancm@mindspring.com) or visit or the website at [www.mommanaturelandscaping.com](http://www.mommanaturelandscaping.com)*

## New life to the B.W. Wells Association

Brian Bockhahn



The B.W. Wells Association was formed in 1983 to assist the NC Division of Parks and Recreation and the US Army Corps of Engineers in developing, maintaining and interpreting the Rock Cliff Farm Historic Area, retirement site of the pioneer ecologist B.W. Wells. The Association has gone through some highs and lows but is now growing strong enough to persevere for years to come.

Early members of the Association were colleagues and friends of B.W. Wells who worked hard for years to preserve the farm and all of its trails. The bridges they built on those trails still remain as testament to their spirit and dedication. When the Association lost John Lawrence, a key member of the core group of volunteers that kept that spirit alive, the Association's numbers began to dwindle.

In 2002, motivated individuals of the Wake Forest Garden Club and some remaining life members wanted to see the Association rise again. Working with the staff of the NC Division of Parks and Recreation, and with public interest waiting to be tapped, the re-birth of the B.W. Wells Association began.

In November of 2003 an annual meeting and election was held. All board members and officers were elected, and the revised by-laws were accepted. The framework is laid for the Association to continue to grow. Many exciting projects are already started and many more are planned—the B.W. Wells Association is back!

New members coming in to the Association need only walk these trails, or hear the stories about B.W. Wells and the farm, to become enlightened to the special meaning of the site.

Guided tours are offered on a regular basis and many events occur throughout the year. Watch for information advertised in the newspaper, or check the calendar of events on the website below.

*Brian Bockhahn is the new B.W. Wells Association President  
You can visit the B.W. Wells Association web site at  
[www.geocities.com/falarangerbb/bwwells](http://www.geocities.com/falarangerbb/bwwells).  
[cbockhahn4@earthlink.net](mailto:cbockhahn4@earthlink.net)*

## ***B. W. Wells***

*...Pioneer Ecologist  
...Riverbend Botanist  
...Nature's Champion  
...Tarheel Ecologist*

## Recreating the Steps of B.W. Wells

Jayne Bednarczyk

There is a special unexplainable feeling as you drive up the road to Rock Cliff Farm -- former home of Burt and Maude Wells. One of a quieter time, without the hectic pace and stress that we all know today... a place which beckons thoughts and dreams.

B.W. was riding a train to Wilmington, NC when he noticed a wildflower meadow and began thinking of plant communities, which led him to his pioneering research to identify these various communal relationships between plants & ecosystem habitats.

Throughout Wake Forest there are signs to BW Wells State Park which led Members of the Wake Forest Garden Club for years to wonder: what lies beyond the paddle locked gates. Last year they arranged a tour. The members who attended the passionate tour lead by Ranger Brian Bockhahn, stepped back in time, began to think about the man who had walked these grounds, and began to dream of a way to share his legacy with others.

Our vision is big but not by today's standards. There will be visitors center and modern bathroom conveniences added to the park, but the dream is to provide for visitors a quiet sanctuary for contemplation, research & study, just as it was in the 1950's when the Well's retired there.

We are happy to have the NC Wild Flower Preservation Society's Chapter President, Alice Zawadzki, serve on our Board of Directors.

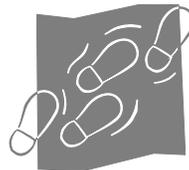
We have many projects, of which these are two (see below) which dovetail beautifully with the NC Wild Flower Preservation Society's Mission, ***Promoting the enjoyment and conservation of native plants ad their habitats through education, protection and propagation...***"

**Wild Flower Nature Walk and Wild Flower Meadow**

- ▾ 2003 - 2004 Organize & Identify surviving native plants
- ▾ 2004 - Controlled burn by park service and observation
- ▾ 2005 - Reintroduce native plants/wildflowers to woodland setting along nature trails

We are looking for thoughtful expertise to help us accomplish our dreams and lead us down the correct path. Whether you'd like to serve on the Steering Committee for these projects, or merely come for a one time hike and flag/id the wildflowers... we're happy to have you join our dream and make it your own. I look forward to hearing from you soon.

*Jayme Bednarczyk - Grounds Chair*  
*919-556-7162 or JaymeRanch@aol.com*  
*(kindly indicate Wells in subject)*



# Where Have All the Wildflowers Gone?

## Effects of Deer Grazing on Spring Wildflowers IN CROFT STATE PARK, SOUTH CAROLINA

Douglas A. Rayner, Ph.D.

### Introduction

Concern about the effects of deer browse have increased over the past 40 years as white-tailed deer populations have increased dramatically across most of their former range. Studies documenting the effects of over-abundant deer populations have addressed a great variety of issues, including site regeneration following timber harvest (e.g. Shafer 1965), regeneration of native communities (e.g. Frelich and Lorimer 1985, hemlock forests); reduction of species diversity (e.g. Stole and Anderson 1992), endangered and threatened vascular plants (e.g. Miller et al. 1992), the economic impact on botanic gardens and nurseries (Art 1993), forest understory birds (McShea and Rappole (1997), methodologies for assessing deer browse intensity using indicator species (e.g. Webster and Parker 2000), and severe impacts to natural communities (e.g. Witham and Jones 1989). Results presented here document in a stark and incontrovertible way the devastation deer browse has had on the spring wildflowers in Croft State Park, the largest state park in South Carolina and a Park that has seen only very limited timber harvest or recreational development in the past 50 years.



### Methods

### Study Site

Croft State Park is a suburban park located about 8 miles southeast of Spartanburg, South Carolina. The Park comprises 7054 acres and was once part of the 18,000+ acre Camp Croft, a World War II Army infantry-training base. According to Powell (1989) the Park is the former “backcountry” of the Army’s Camp Croft and during World War II mostly was used as a gunnery range, bivouac area and site of field exercises. The Park is in the Piedmont Physiographic Province and exhibits the rolling hills, broad valleys and other features typical of the piedmont. However, steep slopes and rocky streams are not uncommon; most of the Park is now in hardwoods or mixed pine-hardwoods.

### Exclosure and Control Plots; Other Sampling in the Park

With permission and encouragement from the S.C. Department of Parks, Recreation, and Tourism (SCPRT), a deer-proof exclosure, 12.1 m. wide, 8.3 m. long, 2.5 m. tall, and enclosing about 100m<sup>2</sup>, was constructed on a north-facing slope adjacent to a small rocky tributary of Kelsey Creek in the summer of 1991. Treated 4”X4”X 12’ posts and hog-wire with a 6” X 6” mesh were used in construction, and access to the exclosure is via a built-in ladder. Mesh size was chosen specifically so as to exclude deer but not to exclude rabbits, rodents, and other small herbivores. This site was selected for the exclosure because of the presence and abundance of Catesby’s trillium and bloodroot. This was intended to be the first of a total of 10 exclosures to be constructed in Croft State Park, but funding from SCPRT fell through, and no additional exclosures were constructed.

Twenty 0.5 X 1.0 m. permanent quadrats were established at regularly spaced intervals and forming a 4X5 grid within the exclosure and in an adjacent control plot. Percent cover was estimated for all species in the quadrats. As an indi-

cator of size/vigor, the longest leaf of all Catesby's trillium plants (henceforth referred to as trillium) within the 0.5m<sup>2</sup> quadrats was measured to the nearest mm and stage class was recorded for each individual. As per Rayner (1984) an individual represented by a single leaf was recorded in the **juvenile** stage class; an individual with three leaves but no evidence of flowering or fruiting was recorded in the **sterile** stage class; and an individual with three leaves and evidence of flowering or fruiting was recorded in the **reproductive** stage class. Sampling according to this protocol took place in 1991 and 1992.

In the summer of 1997 additional data were obtained on trillium stage class and size measurements were made to the nearest mm (for longest leaf) for each trillium within the entire 100m<sup>2</sup> enclosure, the 100m<sup>2</sup> control plot, and in another approximately 400m<sup>2</sup> surrounding the enclosure. In the summer of 1998 the same data were obtained from the same locations as in 1997 except that an additional area of about 1200m<sup>2</sup> surrounding the enclosure was surveyed. In the summer of 2000 the same data were obtained from the same places as in 1997 except an additional 3075m<sup>2</sup> surrounding the enclosure was surveyed, as well as an additional 34 sites in appropriate habitats throughout Croft State Park and comprising approximately 29,675m<sup>2</sup>. Careful and detailed surveys generally were not made at a site until an individual trillium or bloodroot plant had been found. Note also was made of additional wildflower species encountered, as well as evidence of flowering.

## **Results**

### Density of trillium, bloodroot and may-apple

Density of trillium stems per 100m<sup>2</sup> inside the enclosure dramatically increased between 1997 and 2000 (Table 1). It is unknown what proportion of this increase is due to 1) reproduction from seeds, 2) reproduction from a dormant seed bank, or 3)

continued recovery of plants from deer browsing. Trillium outside and surrounding the enclosure showed a significant decline over the same period. Trillium stems in the enclosure were 29 times more dense than in the area surrounding the enclosure and 68 times more dense than in other suitable habitats in the Park. Eighteen percent of the 918 trillium stems found in the Park in the year 2000 were found in the single 100m<sup>2</sup> enclosure.

Density of bloodroot stems inside the enclosure dramatically increased between 1998 and 2000 (Table 1), and density of bloodroot inside the enclosure was 15.5 times greater than in the area surrounding the deer enclosure and 36.5 times greater than in appropriate habitats the Park as a whole. Bloodroot stems surrounding the enclosure declined significantly in density between 1998 and 2000. Nine percent of all bloodroot stems found in the Park in the year 2000 were found in the single 100m<sup>2</sup> deer enclosure. Bloodroot was found in 33 of the 35 sites surveyed in the Park.

May-apple stems were found in 11 of the 35 sites surveyed in the Park in 2000, but a total of only 104 individuals were present. Most may-apple stems (53) were found in a single area of less than 50m<sup>2</sup>. No may-apple stems were in the enclosure and density of may-apple is significantly lower than either trillium or bloodroot (Table 1).

#### Stage class distribution of Catesby's trillium

All stage classes of trillium inside the enclosure showed dramatic and statistically significant changes between 1991 and 2000 (Figure 1). Juvenile stems showed a dramatic and significant decline between 1992 and 1997, but then showed an increase between 1997, 1998, and 2000. The initial dramatic decline in percent juveniles was likely a result of stems moving

up  
in-  
to

Location	Trillium/100 m <sup>2</sup>	Sanguinaria/100 m <sup>2</sup>	Podophyllum/100 m <sup>2</sup>
<b>Exclosure 2000</b>	<b>156.0</b>	<b>62.0</b>	-
<b>Exclosure 1998</b>	<b>109.0</b>	<b>36.0</b>	-
<b>Exclosure 1997</b>	<b>81.0</b>	-	-
<b>Around Exclosure 2000</b>	<b>5.3</b>	<b>4.0</b>	<b>0.1</b>
<b>Around Exclosure 1998</b>	<b>8.0</b>	<b>6.8</b>	-
<b>Around Exclosure 1997</b>	<b>11.6</b>	-	-
<b>Other Sites in the Park, 2000</b>	<b>2.0</b>	<b>1.7</b>	<b>0.3</b>

Table 1. Density of stems of *Trillium catesbaei*, *Sanguinaria canadensis*, and *Podophyllum peltatum* per 100 m<sup>2</sup> of appropriate habitat in Croft State Park between 1997 and 2000.

later stage classes, a shift made possible by protection from deer browse. Lubbers and Lechowicz (1989) have documented that browsing reduces total carbohydrate production and storage and thereby result in smaller re-sprouted individuals. The increase in the proportion of juveniles between 1997 and 2000 suggests recruitment either from a dormant seed bank or from newly produced seeds; however, it also could be due to stems reverting from sterile to juvenile stage class because of sub-par photosynthetic gains. The sterile stage class increased dramatically between 1992 and 1997 and then declined slightly between 1997, 1998, and 2000. The fact that the average blood-root stem also declined significantly in size in the exclosure between 1998 and 2000 (Figure 3) suggests that at least some reduction in sterile stems of trillium between 1997 and 2000 was due to the physical environment and not to deer browse. The reproductive stage class of trillium is slowly increasing,

with the first flowering stem noted in 1997. The proportion of trillium in the reproductive stage class is expected to continue to increase and eventually should fluctuate annually due to physical conditions of the environment. No trillium flowered outside the enclosure in the year 2000, and Powell (1989) found only two flowering stems in his detailed survey of the Park in 1989.

The predominance of the sterile stage class inside the deer enclosure (87.8%) is contrasted to the predominance of the juvenile stage class in the area surrounding the enclosure (84.5%) and outside the enclosure in the Park as a whole (77.0%). Areas naturally protected from deer browse should have stage class distributions more closely resembling the distribution found inside my 9-year-old deer enclosure. Population 7 shows a stage class distribution that closely resembles that of the deer enclosure; population 7 is in a small, eroded gully that is riddled with fallen trees.

#### Size/vigor of Catesby's trillium

The size/vigor of the three stage classes of trillium inside the deer enclosure have all changed between 1991 and 2000 (Figure 2). The juvenile stage class surrounding the enclosure shows a gradual decline which is highly statistically significant ( $p = < .001$ ); this suggests a continuing stress from deer browse and/or a worsening physical environment. The increase in average juvenile size inside the deer enclosure between 1991 and 1997 is not statistically significant, nor is decline in average size between 1997 and 2000. The smallest juvenile trillium in this study had a leaf length of 9.0 mm. In the life cycle of a typical trillium this would correspond to an age of about two years. Since the trilliums in the Park are declining in size and abundance due to over-browsing by deer, this 9 mm trillium may be tens or even hundreds of years old.



It is not known at what point decline turns into death; the final blow probably is not due to deer browse.

The sterile stage class of trillium (Figure 2) exhibited a statistically significant increase between 1991 and 1998 and a decline between 1998 and 2000 that was not statistically significant. Protection from deer browse apparently allows for increase in plant size up to a certain point, but eventually plant size fluctuates annually due to factors of the physical environment. Sterile trillium outside the enclosure showed a significant decline in average size from 51.3 mm in 1992 to 28.0 mm in 2000. An average leaf size of 28.0 mm corresponds to an adult trillium with a diameter of just over one inch. How many readers have ever seen a trillium that small?

Size/vigor of the reproductive stage class of trillium in the deer enclosure (Figure 2) fluctuated in a statistically non-significant way between 1997 and 2000, and so provides no insight into how physical features of the environment affect size/vigor on a year-to-year basis.

Five of the 19 populations in Croft State Park with at least one sterile stem had average leaf lengths of greater than 50 mm in the year 2000. One of these populations was within the enclosure, two were populations consisting of a single individual, and two were protected from deer browse by steep slopes and/or fallen trees. Similarly, one would expect greater browsing pressure on larger populations; the two largest populations outside the Park were two of the populations with the smallest average size (142 plants, average size 30.7; 144 plants, average size 38.2 mm)

### Size/vigor of Bloodroot

The size/vigor of bloodroot stems differed dramatically and significantly between the plants in the enclosure and plants surrounding the enclosure (Figure 3) in both 1998 and 2000. The small size of bloodroot plants outside the enclosure precludes any flowering. The six populations of bloodroot with the largest average plant size in 2000 all were found in habitats protected from deer browse. The significant decline of bloodroot plant size in the enclosure between 1998 and 2000 could result 1) if there were significant differences in the physical environment between the two years or 2) if 1999 had been a big year for flowering of bloodroot in the enclosure, a significant decline in average plant size would be expected the following year.



### Size/vigor of may-apple

Only 104 stems of may-apple were found in the entire Park in 2000 and no plants flowered. Average leaf width was only 68.9 mm for the 104 plants and only 46.5 mm in the ten smallest populations.

### Qualitative observations on other spring wildflowers

Casual observation of 35 sites in Croft State Park surveyed for trillium in 2000 indicated that, in addition to *Trillium catesbaei*, *Sanguinaria canadensis* and *Podophyllum peltatum*, most of the common spring wildflowers typical of mesic oak-hickory forests or beech forests in the piedmont of South Carolina are present in Croft State Park, including *Geranium maculatum*, *Thalictrum thalictroides*, *Uvularia perfoliata*, *Uvularia sessilifolia*, *Smilicina racemosa* (*Maianthemum racemosum*),

*Polygonatum biflorum*, *Tiarella cordifolia* var. *collina*, *Chamaelirion luteum*, *Arisaema triphyllum*, *Iris cristata*, *Medeola virginiana*, and *Cynoglossum virginianum*. Casual observations in 2000 also indicated that virtually all of these species have been severely impacted by deer browsing. The only species with any evidence of flowering in 2000 outside the enclosure were *Tiarella*, *Arisaema*, *Iris*, and *Cynoglossum*, and flowering in all four was rare, plant size was greatly stunted, and plant density was very low.

Several rare spring or summer wildflowers have been reported from Croft State Park (Powell 1989). *Cypripedium parviflorum* var. *pubescens* probably has been extirpated from the Park; Powell found no plants in his detailed survey in 1989 and I found none in 2000. Seven stems of *Hexaletris spicata* were discovered by the author in 1997, several of which had evidence of deer browsing; none could be relocated in 2000. Populations of *Orchis spectabilis* and *Liparis lilifolia* in 2000 consisted of one stem each. Three populations of *Malaxis unifolia* were discovered, but they comprised a total of only 20 plants.

## Discussion

Qualitative and quantitative data obtained from a nine-year-old deer enclosure and from 34 additional sites in the 7054-acre Croft State Park document the devastation of the herbaceous flora by the browsing of white-tailed deer. Qualitative data indicate that virtually all spring wildflowers have been severely impacted and that some rare or unusual piedmont species have either been extirpated from the Park or reduced to just a few stems. Quantitative data for *Trillium catesbaei*, *Sanguinaria canadensis*, and *Podophyllum peltatum* indicate the degree to which abundance, size, and stage class have been affected by

deer browse. Recovery of spring wildflowers apparently will be slow; nine years of complete protection from deer browse has not been enough time for complete recovery of trillium, as indicated by the very slow increase in the reproductive stage class (Figure 1).

The discovery of only 104 stems of may-apple in the entire Park is troubling, but more troubling still is the fact that in June of 2000 the author found absolutely no stems of trillium in 4000+ acres of mesic hardwoods on U. S. Forest Service property in nearby Union and Chester counties. This suggests that wildflower decline is not just a localized phenomenon in the eastern piedmont of South Carolina.

McShea and Rappole (1997) suggest that deer are over-abundant when their density “prevents the conservation of rarer species” and that “action should be taken at that time.” If that is true, then Croft State Park is way overdue for significant action to reduce the impact of deer browse. Although responsible individuals with the S.C. Department of Parks Recreation and Tourism (SCPRT) have not been unaware of or unresponsive to the problem of over-browsing in Croft State Park, their efforts have fallen way short of what is needed. The first ever deer hunts in any South Carolina state park were held in Croft State Park in 1997 and 1998. Unpublished summaries of these deer hunts (Moore 1997, 1998) suggest the presence of an enormous deer herd (one deer per 4-8 acres), and a deer herd that probably is beyond the carrying capacity of the environment. Moore (pers. comm. 2000) indicated that the annual harvest of 100+ deer on 5500 acres of overpopulated deer habitat is not nearly enough to begin controlling the deer population. Deer hunts were suspended in 1999 over concerns about unexploded munitions from WW II, and will remain suspended until SCPRT receives a visitors’ safety assessment from the U.S.

Army Corps of Engineers (Foley pers. comm. 2000).

Archery hunts probably will eventually return to Croft State Park, but it is uncertain if they alone will ever be able to reduce the deer population enough to allow for the recovery of the spring wildflowers. Although data presented here show the great potential for recovery of common spring wildflowers, with compelling quantitative data for trillium and bloodroot, there is real concern for the fate of rare species such as *Liparis lilifolia* and *Orchis spectabilis*. Moreover, the rate of wildflower recovery will undoubtedly be much slower in an environment with a reduced deer herd than in one in which deer are completely excluded. With the above factors in mind, and recognizing how politically and socially sensitive deer hunting issues can be, I am recommending that SCPRT immediately begin an immediate program to establish a series of 0.25 - 1.0 acre deer exclosures in 1) sites harboring rare spring wildflowers, 2) the 5-10 largest trillium populations, selected so as to include widely separate parts of the Park, and 3) a few sites with an impressive overstory but no trillium or rare wildflowers. These small exclosures will prevent the extirpation of additional rare species, provide for the recovery of a stock of common spring wildflowers, and bide time until the problem of the overpopulation of deer can be addressed in a significant way. This is a costly solution, but it is the one that makes sense considering how severely deer browse has impacted the spring wildflowers of Croft State Park.

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*Thanks to Charlie Williams for spotting this article, and for seeking permission to re-print it in our Journal. The original*

*article contains additional tables that we were unable to include.*

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# Places to Visit

Katherine Schlosser

## Tater Hill, Watauga County, NC

July 2003

The air was dry and the sky dusty blue as a small group of wildflower enthusiasts gathered to meet Doug Monroe at the foot of Tater Hill. By the time cars were parked and we were loaded into the back of Doug's half-ton truck, a mist filled the air but did not dampen any spirits. The bumpy ride to the starting point of our day's walk was filled with ooh's and aah's at brilliant displays of scarlet *Monarda dydima* and the clear golden yellow that only summer brings to coneflowers.

Doug comes to Tater Hill every seven weeks or so for road and trail maintenance. He also leads hikes over the 397 acres that have been preserved through the efforts of the Plant Conservation Program of the NC Department of Agriculture and Consumer Services, the NC Natural Heritage Trust Fund and the Trust for Public Land. Tater Hill sits atop the southern end of the Amphibolite Range, a formation dating back about 800 million years and stretching across central Ashe county and into northeastern Watauga county. The underlying mafic rock is resistant to erosion and produces nutrient rich, high pH, providing a perfect niche for rare plant species and keeping the area at the top of conservation concerns.

Forest and plant life vary with altitude, and include deciduous and hemlock forests. Walking through these areas we again saw great banks of Monarda, Green-headed coneflower (*Rudbeckia laciniata*), and tall larkspur (*Delphinium exaltatum*), a species on Federal lists as Threatened. Wood bet-

ony (*Pedicularis canadensis*), Nodding onion (*Allium cernuum*), Indian paint brush (*Castilleja coccinea*), False hellebore (*Veratrum viride*), Fringed polygala (*Polygala paucifolia*), Horse Balm (*Collinsonia canadensis*), White Snakeroot (*Eupatorium rugosum*), Teaberry (*Gaultheria procumbens*), *Clethera alnifolia*, Doll's eyes (*Actea pachypoda*) and *Clintonias* were in abundance as we walked along. In abundance were Turk's Cap lily (*Lilium superbum*) and we did see one small patch of our new State wildflower, Carolina lily (*Lilium michauxii*). One way to distinguish between these two lilies is to look down into the flower. The Turk's Cap has green wedges at the base of each petal, making a green star shape. The Carolina lily is a little smaller and lacks the green markings inside the flower. Doug made sure that we saw some of the older trees in the area, including a red maple estimated at 350+ years.

The high elevation wetland habitats of Tater Hill, at a little more than 5,100 feet, are among the rarest of biological communities in the southern Appalachians. These wetlands, which include a bog and an adjacent fen, are lake basin remnants at the headwaters of the New River. Federally threatened Long Stalked Holly (*Ilex collina*) and Gray's lily (*Lilium grayi*); and state threatened Linear-leaf Willow-herb (*Epilobium leptophyllum* Raf. ) and swamp saxifrage (*Saxifraga pensylvanica* L.) find a home in these permanent wetlands.



Swamp saxifrage  
Britton, N.L., and A. Brown. 1913.  
*Illustrated flora of the northern  
states and Canada*. Vol. 2: 219.

As our small group emerged from the forest onto the edge of the fen, where we were admiring Nodding Ladies

Tresses (*Spiranthes cernua*) and carefully stepping on rocks to keep from trampling the fragile flora, a crack of thunder and black clouds that seemed to roll up the side of the mountain and over our heads caught our attention. Doug suggested that we head immediately for the truck and down the mountain. The wildflowers on the roadside were no competition for the rolling black clouds as we bounced down the old logging road, hanging on to the edges of the truck and dodging tree branches.

Doug delivered us safely to our cars, the clouds parted, and the sun peaked through once more.

## **Bluff Mountain Nature Preserve**

July 2003

The same small group that hiked up Tater Hill met the following day for a trip up Bluff Mountain. We joined members of the Plant Conservation Program's Scientific Committee for this venture, and set off happily with Cecil Frost, Jerry Reece, Marj Boyer and others leading the way. We were able to drive a couple of cars nearly to the top of the mountain, disembarking at the edge of a grassy bald, where Carolina bluebells (*Campanula divaricata*) lined the edges of the roadways.

Bluff Mountain Nature Preserve is a 1,973 acre high elevation habitat that includes 25 endangered, rare or threatened plant species. The trees of the hardwood forests are stunted and twisted by the cold winds and ice of winter, creating an eerie Alice in Wonderland feeling to those venturing into the deep woods. Great blankets of Dodder (*Cuscuta rostrata*) were in flower and covered plants with abandon. An isolated area, with access only granted to those making specific arrangements, the

trails are difficult to distinguish in some spots, making this truly a home for the varied plant and animal life. There is a quiet and peace about the place that elicits hushed voices and soft footsteps.

Emerging from the forested areas, a large grassy bald studded with bright orange *Lilium philadelphicum* opened up to stunning views of valleys and surrounding mountains, taking one's breathe – what was left after the ascent. In this area the search was on for spreading avens (*Geum radiatum*) and a few other plants that favor such an environment.

A short way off and a little further up put us in the midst of a Carolina hemlock forest, also stunted by ice, wind and elevation. The walk was enchanting and led to another overlook that was framed by Obedient Plants (*Dracocephalum virginianum*) and coreopsis.

The walk around Bluff Mountain offered amazing variety of plant life, habitat, and geology. The incredible views along the way were extras. Bluff Mountain and Tater Hill both offer extraordinary opportunities to see exceptional and unusual natural areas. We are fortunate that these places have been saved.

Partial list of plants observed:

Angelica

Grass of Parnassus  
(*Parnassa grandiflora*)

Gooseberry (*Ribes rotundifolium*)



Coneflower (*Rudbeckia lacinata*)  
 Ground cedar (*Lycopodium tristachyum*)  
 Meadowsweet (*Spirea alba*)  
 Michaux's saxifrage (*Saxifraga michauxii*)  
 Liatris  
 Silverrod (*Solidago bicolor*)  
 Highbush blueberry (*Vaccinium sp.*)  
 Jack-in-the-pulpit (*Arisaema tryphyllum*)  
 Dwarf Rattlesnake plantain (*Goodyera repens*  
 var. *ophoides*)  
 Lily of the Valley (*Convallaria majalis* var.  
*montana*)  
 Round-leafed orchid (*Habenaria orbiculata*)  
 Dutchman's Pipe (*Aristolochia macrophylla*)  
 Dwarf dandelion (*Krigia montana*)  
 Sundrops (*Oenothera tetragona*)  
*Iris Cristate*  
 False Foxglove (*Aureolaria flava*, *A. laevigata*)  
 False Hellebore (*Veratrum parviflorum*)  
 Fire Pink (*Silene virginica*)  
 Flowering raspberry (*Rubus odoratum*)  
 Galax (*G. aphylla*)  
 Polygala (*P. curtisii*)  
 Bloodroot (*Sanguinaria canadensis*)  
 Fly poison (*Amianthium muscaetoxicum*)  
 Solomon's Seal (*Polygonatum pubescens*)  
 Spiderwort (*Tradscantia subaspera*)  
 Starry campion (*Silene stellata*)  
 Bluets (*Houstonia purpurea*)  
 Trailing arbutus (*Epigaea repens*)  
 Wild sarsaparilla (*Aralia nudicaulis*)  
 Yellow mandarin (*Disporum lanuginosum*)



*Delphinium exaltatum*  
 Britton, N.L., and A.  
 Brown. 1913. *Illustrated*  
*flora of the northern states*  
*and Canada*. Vol. 2: 94.

## Walnut Trees

*Now why do you flog the poor walnut tree so,  
That it's leaves and green branches lie scattered be-  
low?*

*Hark! It murmurs complaints to the whispering breeze,  
And shakes it's green head at hard blows such as these.*

*Oh dear little lady, you don't understand,  
I cannot pluck fruit at this height with my hand,  
Unless I'd long arms, reaching high as the tree;  
I should laugh in my sleeve, if that ever should be.*

*So, I take a long stick, the ripe walnuts to gain,  
Without it you'd have few to crack, it is plain;  
The tree bears the buffets, forgets and forgives,  
And still does it's duty each year that it lives.*

*Do you do the same, little lady, I pray,  
Lest when the tree whispers next time it should say,  
Whilst it shakes the green head in the way that you see,  
There goes a young girl with less sense than a tree!*

From Country Walk for Little Folks;  
Boston, J. Buffum, 1856.

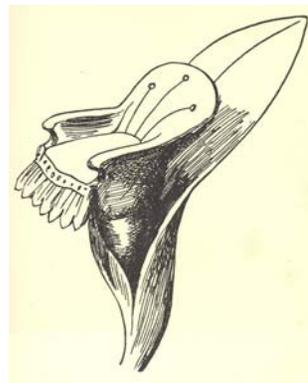


# Horticultural History In Old and Rare Books

Katherine K. Schlosser

There are treasures to be found in garden and woods at any time of year. Some winter days, however, freezing temperatures and howling winds keep us from donning layers of clothing and heading out the door.

Those are the times to settle into a cozy chair, log fire crackling and popping, a big mug of tea and a great book on your lap, and maybe a faithful dog at your feet. These are the days to “give ourselves to the rooms in which we live and the tools with which we work.” (Hamilton W. Mabie, *My Study Fire*, 1899).



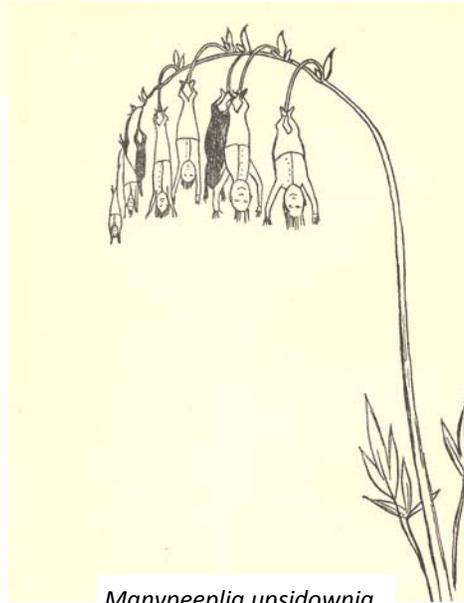
*Armchairia comfartabilis*

For some of us, those tools include the old and rare books which we are privileged to find and to have on our shelves. With Grandmother, vessel of much horticultural information, long since gone, it is to books that I turn for guidance. Old books, especially, are full of practical help, moral advice, and quaint sketches of life and landscape.

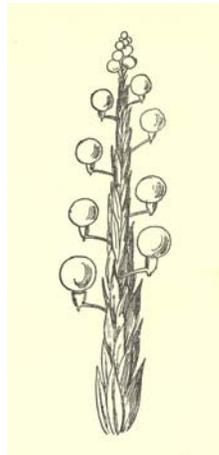
Just for fun, I thought I would share some of the illustrations from a book which happens to belong to a friend. The book, *Nonsense Botany and Nonsense Alphabets*, is by Edward Lear and was published by Frederick Warne & Co., London, in 1927. I believe there was an earlier edition, but this one is charming.



*Crabbia horrida*



*Manypeeplia upsidownia*



*Bubblia blowpipia*

## NCWFPS Calendar

NCWFPS Board Meeting Place: Reba & Roses, Hillsborough	Feb. 22, 2004
NCWFPS Board Meeting Place: Emily Allen's home	May 23, 2004
NCWFPS Board Meeting Place: TBA	Aug. 22, 2004
NCWFPS Board Meeting Place: TBA	Nov. 14, 2004
<b>Spring Trip</b> Max Patch	<b>May 2, 2004</b>
<b>Annual Picnic</b> Place: TBA	<b>June 12, 2004</b>
<b>Summer Trip</b> NW Mountains	<b>Aug. 7, 8, 2004</b>
<b>Fall Trip</b> Gamelands, Sanford	<b>Oct. 9,10, 2004</b>

*Details for all trips will be in the newsletters.  
Be sure to save the dates!*



# NCWFPS Membership Application

**Annual Dues:**

- Limited Income \$15.00
- Regular/Family \$25.00
- Life Membership \$1,000.00
- Scholarship Fund Donation \$ \_\_\_\_

Total Enclosed \$ \_\_\_\_

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North Carolina Wild Flower Preservation Society, Inc.  
813 Prologue Road  
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Contact the NCWFPS by calling 919-834-4172 or visit our web site at  
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## NCWFPS JOURNAL AND NEWSLETTER

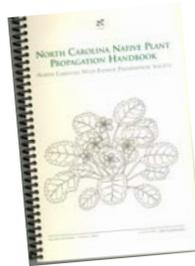
Editor ..... Katherine K. Schlosser

Articles on the native plants of North Carolina, the environment, conservation issues, persons of interest, or other related topics are welcome. Submit such articles to the editor electronically or by mail to 1402 Bearhollow Road, Greensboro, NC 27410.

Deadline for next Journal is October 15, 2004.

Newsletter deadlines are February 1, April 1, and August 1.

## **NORTH CAROLINA NATIVE PLANT PROPAGATION HANDBOOK**



### CONTENTS

Conservation of Native Plants  
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