

Native Plant News

NEWSLETTER OF THE NORTH CAROLINA NATIVE PLANT SOCIETY

Native Plant News
Katherine Schlosser, editor

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Herbivore Defenses in *Passiflora incarnata*

I am one of the 2011 recipients of the Tom and Bruce Shinn grant, and wanted to provide an update on my research from this summer. The grant was a great assistance in enabling me to carry out pilot experiments for my dissertation research.

My research focuses on *Passiflora incarnata*, commonly called 'may-pop'. This vine is native to the southeast U.S. and commonly occurs in disturbed areas like roadsides and field margins. It produces dramatic blue to purple flowers and edible, tart fruit.

I'm interested in this plant because of its defenses against insect herbivores. *P. incarnata* produces extrafloral nectaries at the base of each leaf (as shown in the picture --the pair of oval bumps on the stem) and below flower buds. Extrafloral nectaries (EFN) are small glands that secrete sugary nectar, similar to the nectar found in flowers. Nectar in flowers serves to reward and attract pollinators, and these extrafloral nectaries serve a similar purpose—to reward and attract defenders, in this case, ants. Foraging ants are attracted by the nectar reward and provide defense in exchange, patrolling the leaves and attacking insect herbivores that try to eat the plant. Extrafloral nectaries occur in many plant families, but are uncommon in temperate environments—they are much more common in the tropics. A few other North American plants that produce EFN are some cotton varieties, *Chamaecrista fasciculata* 'partridge pea', the tree *Catalpa bignonioides* 'catalpa', several small invasive legumes (*Vicia sativa*), some peach tree varieties (Prunus), Senna shrubs, and several cacti.

In addition to producing EFN, *P. incarnata* also produces chemical compounds for protection that make the plant toxic or unappealing (flavonoids, alkaloids, and a cyanogenic glycoside). My research concerns why plants produce both these chemical defense compounds and EFN—are these multiple defenses needed to defend against particular herbivores? Is it



somehow cheaper to produce multiple defenses instead of higher amounts of only one defense? Does producing multiple

defenses actually benefit the plant, or are these defenses redundant?

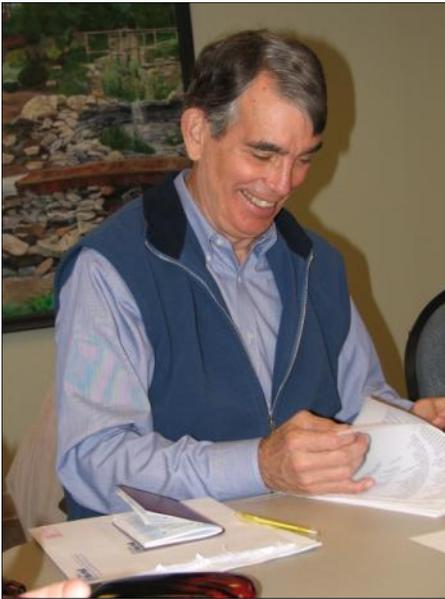
To answer these questions, I needed measurable variation in plant defense production. My work this summer concerned two goals: collecting plants from various populations to work with, and measuring their defense production. I utilized North Carolina and central Florida as the two regions for study. These were chosen based on the likely variation in herbivore defenses expressed by plants from the two regions, as they represent northern and southern ends of *P. incarnata*'s range, feature varied herbivore pressures, and also have varying ant communities.

The gulf fritillary caterpillar (*Agraulis vanillae*) is a specialist herbivore on *P. incarnata* and other *Passiflora* that is found year-round in Florida. In North Carolina, the caterpillars are

Continued on page 3



President's Message



Isn't our natural world a thrill-a-minute! This past spring (wet) all my ferns and spring ephemerals really got going, and then the summer (dry) laid them down way too soon for my likes.

Late summer & early fall (wet) gave new life to some of my ferns but most had already gone to bed until next spring. I don't water as a general rule unless there are new plantings. It should go without saying that with new plants, you need to keep them watered for the first year.

I have quite a number of *Hexastylis* and *Asarum* in my yard and it is almost fun to watch them rise and wilt with the changes in the moisture supply. Of course I would prefer the constant 1" per week so everything could reach its peak but I haven't figured out how to control the weather.

Oh! I did have a major casualty this year. My beautiful *Cypripedium parviflorum*, yellow lady slipper, which was actually increasing in size, just didn't come back. I couldn't find any sign of voles or fungus or any obvious damage and I did take care to keep her watered. It was a plant that I rescued from the house site behind me and it was much like losing an old friend. But as one beauty goes away, others come into your life. A friend gave me *Rudbeckia heliopsidis* and I really like it. The flowers are much like other *Rudbeckia* but it is more compact and I love the foliage.

Another is *Veronicastrum virginicum*, Culver's root. I have two plants in their fourth year and they are starting to increase. I had four stems on one plant and 6 on the other. I bought four more plants so I hope that in a few years I'll have a nice white spiked mass in my border. I had another exciting event this year.

In 1997, I bought three *Lilium superbum*, Turk's cap lilies. They have put up 1-2' stems each year but I have never seen a hint of a bloom. This year one of them shot up to nearly 4' and a bud started forming. The drought didn't help and the bud never matured and all of a sudden the plant turned tan and went away, but it was such a thrill to watch this "old" plant shoot up and even if it didn't bloom this year – there's always next year!

Man, I love to watch these plants grow. There's always a memory of that last great bloom, or looking at this year's beauty or anticipating what next year will bring. I hope all of you enjoy our beautiful natives like I do.

See you in the woods,
Tom





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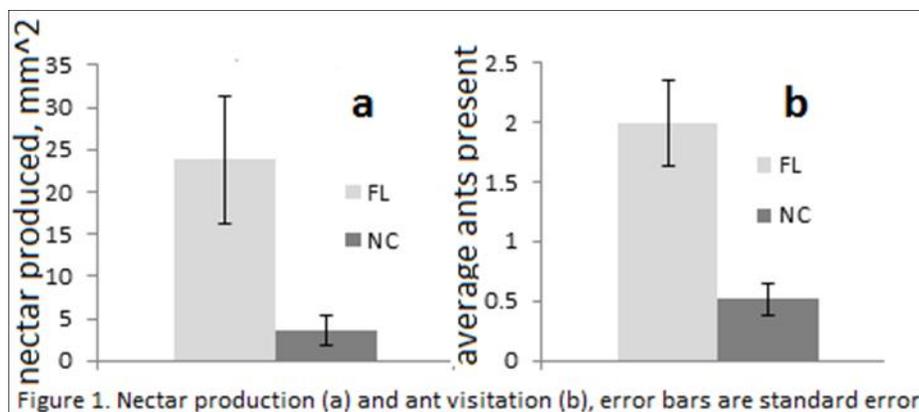
RITA MERCER

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Herbivore Defenses continued...

found on the plant for only a portion of the year, as the adult butterflies migrate seasonally. In North Carolina, generalist Chrysomelid beetles appear to be the most common herbivores. As specialists, the gulf fritillary caterpillars are likely to be highly adapted to the chemical defenses produced by the plant. However, these slow-moving caterpillars may be vulnerable to the aggressive ants lured by EFN. Chemical defenses may still be effective for generalist herbivores, requiring the plant to retain both defenses. This variation in herbivores may have led to selection favoring differing investment in EFN versus chemical defenses in the two regions.

To collect plants, I went on several collecting trips this summer, stretching from Durham to the southeast coast of North Carolina, where *P. incarnata* was more prevalent (along with a separate trip to Florida). I primarily combed roadsides, overgrown field margins, and anything abandoned and overgrown. I then grew these plants in Durham, North Carolina in a common garden experiment. As plants are trapped in the environment they grow in, they tend to demonstrate large amounts of phenotypic plasticity—that is, they can adjust some of their traits in response to their local environment. Thus, it is hard to tell if a given trait of a plant is due to the plant genotype or due to phenotypic plasticity. One way to see what



traits are genetically determined is to grow plants from several areas in a common environment. Plants from Florida produced higher mean nectar volumes (figure 1a) and received higher mean ant visitation (figure 1b) indicating likely variation in EFN defense between the populations.

I also investigated the chemical defense production of the plants from the two regions. I utilized both spectrophotometry (where light is used to measure the transmittance or reflectance of a prepared solution to quantify chemical compounds) and a chemical indicator paper (Feigl-Anger paper) to detect cyanogenic glycosides in the plants. However, neither method was sensitive enough to reliably detect the cyanogenic glycosides in the plant. Instead, I used an herbivore bioassay—essentially, offering different leaf material to an herbivore and noting their choice and the amount of material consumed, as herbivores can respond to the amounts of defense chemicals present in the leaves.

In laboratory feeding trials, naïve gulf fritillary caterpillars from a commercial colony offered leaves from North Carolina or Florida plants in choice feeding trials repeatedly selected Florida plants (selected Florida in 18 of 26 trials, $p < 0.05$, $X^2 = 3.85$, $df = 1$), indicating

Continued on page 4



Herbivore Defenses continued...



possible variation in the chemical defenses produced by plants from the two regions. While these results indicate variation in the chemical defenses produced, they do not make it possible to determine which region has higher production. As a specialist herbivore, *A. vanilla* may prefer plants with higher chemical defenses (which may act as an attractant or feeding stimulant) or plants with lower defenses. Additional feeding tests with a non-adapted generalist herbivore will reveal this distinction.

My next steps are to use these collected plants in reciprocal transplant experiments—plant will be grown in both their local and non-local environment. I will monitor plant defense production, ant and herbivore visitation, and herbivore visitation for plants from each region. This will allow me to consider the consequences of producing different levels of defense and how the local environment, ants, and herbivore impact the effectiveness of producing these defenses. This research has broader impact beyond improved understanding of an intriguing plant. How multiple plant defenses interact is poorly understood, especially for indirect defenses such as EFN. My research can also provide insight for research on environmentally-friendly pest control and improve targets for plant breeding. Extracts from *P. incarnata* fruit are utilized in cosmetic products (such as Burt's Bees sun protection lipbalm) and herbal medicine.

Aline Waguespack Claytor



History of the Deer-tongue plant in North Carolina

A.J. Bullard

Deer-tongue, also called dog-tongue and vanilla plant (*Carphephorus odoratissimus*), is native to the coastal plain from North Carolina to Florida. It is characterized by basal clusters of dog- or deer-tongue shaped leaves followed by a 3 to 5 foot central flower stalk with purple flowers in late summer. In its habits the poor sandy soil near Carolina Bays, or pocosins, and flat pine lands is found as far inland as Sampson and Wayne counties. I once found a snow white flowered plant in Duplin county and propagated it.

The deciduous leaves of this perennial herb were the focus of its value to man. These leaves were harvested by native pickers from June to frost, sun dried on blankets, and in turn sold to buyers who baled the dry leaves and sold them to large buying centers. Two of the largest were in Brunswick, GA and Richmond, VA. At Kelly, NC I witnessed the Beatty family harvesting and sun drying the leaves and saw a truck load of the dried leaves at the home of Bill Northrup (He was a buyer of Venus flytrap fame in Wilmington in the late 1960s.)

The bulk of these dried leaves was then sold to tobacco companies, who ground them and used them in tobacco products to give a pleasant vanilla-like aroma. This practice was not made public by these tobacco companies but it persisted until at least the 1970s when supplies began dwindling and substitute ingredients were found.

The deer-tongue gatherers were paid up to 30 cents a pound of clean, dried leaves with no more than a 20% moisture content.

Local merchants sometimes purchased the leaves. One such merchant was W. I. McLamb of Clear Run,, NC in Sampson County. A poster still hangs from the wall of his now closed store from the 1950s which reads, "Wanted To Buy, Deer Tongue, thoroughly dried, well cured and free from straw. Highest cash price paid. Samuel Bear Sr. and Sons, Wilmington, NC."



Mr. McLamb used his cotton press to press and bale the leaves before resale. IN this era, NC contributed 1/2 to 3/4 of a million pounds annually of the 5 million produced nationwide. When dried, about 5/6 of the green weight is lost.

Deer-tongue use has paralleled the tobacco industry in several ways. The earliest colonists of eastern Caroline observed Indians mixing deer tongue with the native bitter tobacco to make a more pleasant smoke.

Later, with commercial tobacco farming, deer-tongue found another use. Tobacco buyers frowned on moldy dried tobacco, so occasionally a less than honest farmer would place a few deer-tongue leaves in the middle of wrapped bundles of moldy tobacco to mask the moldy smell from the buyers. Snuff was also used for this shady purpose.

The pleasant odor of the leaves comes from its abundance of coumarin—a vanilla-like agent.

Around earlier homesteads, the leaves were placed in bureaus to impart a pleasant smell to clothing or was hung in room to pleasantly freshen the air.

Deer-tongue also has medicinal properties. The earliest colonists, who learned from Native Americans, made a tea which

Photos courtesy of Jeffery S. Phippen, Jeff's Plants Page: <http://www.duke.edu/~jspippen/plants/plants.htm>

Wanted To Buy
Deer Tongue
Thoroughly dried, well cured and
free from straw.
Highest Cash Price Paid.
Samuel Bear Sr. and Sons,
Wilmington, NC



Deer Tongue continued



was believed to be an all purpose cure and tonic. Deer-tongue concoctions were also used as stimulants and sweat-inducing agents.

Today, this humble plant with the storied history can still be found, sparingly over its natural range, however, the populations have decreased due to over harvest and environmental factors such as lowered water tables, land development, and pollution.

A.J. Bullard
Mt. Olive, NC

References:

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Montgomery, Frank A. "Deer Tongue: Unique Carolina Product," Sept. 18, 1966, *The News and Observer*, Raleigh, NC.

Nichells, J. C. *Botanical Ready Reference* (Trinity Center Press, Ceautomont, CA) 275 p.

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NCNPS Walk and Collection Guidelines

Sec. II, A. Plants on the NC Plant Conservation Program's list of Endangered, Threatened and Special Concern plants and the N. C. Natural Heritage Program's List of Rare Plant Species of North Carolina should not be collected except under special circumstances, such as:

- imminent destruction of habitat (salvage operations),
- scientific research contributing to long-term conservation of the species,
- or reestablishment of extirpated populations.

When such circumstances exist, collection should be carried out only when the collector has the necessary permits and permission.



NCNPS Donations June 1, 2010 – May 31, 2011

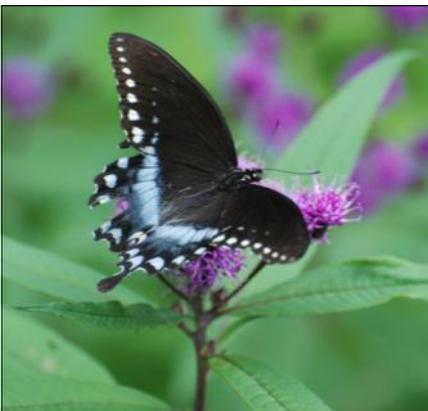
June 1, 2010 NC Botanical Garden	\$1,000.00
July 7, 2010 Western Carolina Univ, 4 Cullowhee NP Conference Scholarships	\$1,400.00
August 23, 2010 Daniel Boone Native Garden (BW Wells Grant)	\$975.00
October 13, 2010 Land Trust for Central NC	\$300.00
December 15, 2010 NC Center for Non-Profits	\$70.00
December 15, 2010 NC Conservation Network	\$50.00
April 10, 2011 Montreal Retreat Association (Trail Club)	\$100.00
April 19, 2011 NC Botanical Garden	\$200.00
April 19, 2011 Robert Thornhill (Shinn Grant)	\$1,000.00
April 19, 2011 Aline Claytor (Shinn Grant)	\$700.00
April 29, 2011 Sarah P. Duke Gardens	\$200.00
April 29, 2011 UNC-Charlotte Botanical Garden	\$200.00
May 2, 2011 Friends of Black Mountain Library	\$50.00
May 10, 2011 Western Carolina Univ, 4 Cullowhee NP Conference Scholarships	\$1,400.00
May 16, 2011 Lindsay D. Leverett (Shinn Grant)	\$697.39
TOTAL	\$8,342.39

Triad Chapter

In mid-September, members of the Triad Chapter were invited to participate in a field trip to meadows along the Blue Ridge Parkway with members of the Triad Chapter of the Carolina Butterfly Society. Note the affinity, left to right, of spicebush swallowtails, monarchs, and great spangled fritillaries for New York ironweed!

Member Doug Goldman presented a thorough, and thoroughly informative presentation on the USDA Plants Database at the November meeting.

Our December meeting will be our 5th Annual Members Photography and Art Show. Each member is invited to submit slides from the past year for a presentation, and artists are invited to bring works for display. After the show and some light refreshments, we conduct a plant/seed/gift exchange. All are welcome!





A fern walk with Emily Allen

photos: Jeanette Lundy





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Cranberry, blue, green, yellow,
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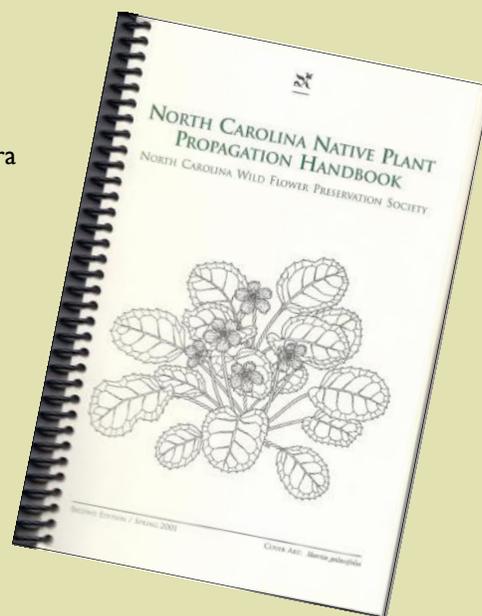
Our famed 115 page *North Carolina Native Plant Propagation Handbooks* are on sale for \$5.00 each, plus shipping.

This is the second edition, published in 2001. At the time, Ken Bridle, who acted as editor, had this to say about the book:

“We dedicate this edition to the NCWFPS members who compiled their records of both success and failure and were able to produce a valuable and useful manual about the propagation of North Carolina native plants. The contributors to both the original and the new edition have shared a wide range of information and expertise unavailable from any other source.”

Order your copy, and a few extra to keep on hand as gifts, from:

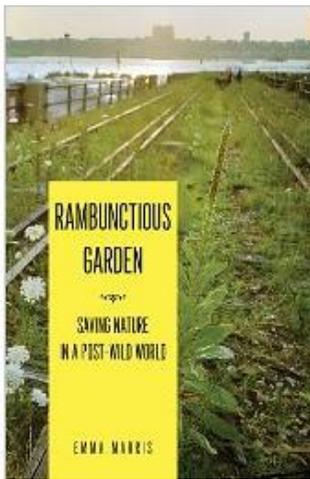
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Book Review: *Rambunctious Garden*

Charles Racine



The Native Plant Society strives to preserve and protect native plants and communities. However, we all admit that it is a battle and in North Carolina as the population increases and the climate warms we are “losing ground”. A new book “*Rambunctious Garden: Saving Nature in a Post-Wild World*” by Emma Marris, a science writer for the journal *Nature*, makes an appeal to both continue the battle but also try and live creatively with the situation. This means more than removal or eradication of non-native species, an option becoming more expensive and sometimes impossible.

She describes places like Hawaii, Puerto Rico and Australia where introduced species are rampant and their removal is no longer an option. New or “novel” ecosystems can be built from non-native plants that perform some of the same important functions or services as natives, i.e. soil stabilization and creation, removal of carbon dioxide, recycling of nutrients and water, etc. But it seems doubtful if they provide biodiversity protection.

Moving plants and animals around to restore or create new ecosystems or anticipate climate warming is a viable option gaining new respect. At the extreme end of this re-wilding idea is to recreate pre-ice age ecosystems using extant herbivores and in particular carnivores which mimic extinct animals or restore ecosystems in which top predators are gone. Experiments in Holland and proposals for the American West are described along with resulting vegetation changes. Changes due to the well-known reintroduction of

wolves to Yellowstone are described. Hence she describes places such as Ascension Island, where re-wilding experiments and the movement of plants north anticipate warming.

The desire for pristine wilderness is strong in the United States. In the late 19th century Yellowstone was established as the model, excluding all human influence other than tourism, and preserving a view of America before white settlement. Because this is not an option in much of Europe, she suggests we look at gardens, the non-natives and roadside weeds, even appreciate urban ecosystems behind or next to a WalMart. Go to the Raulston Arboretum and look at the wonderful South African bulbs. In Europe for example there is little choice since everything has been altered. In fact, as Marris shows, even the great Bialowieza Primeval Forest in Poland has a long history of human use.

But thank god we have the Nature Conservancy, Carolina Vegetation Survey and the NCNPS and such books as this.

As a botanist, I have always been interested in plants regardless of where they grow or if they are native or non-native. I do make value judgments, depending on the leaves, flowers etc., but even a lowly weed in a sidewalk crack is of interest and so are plants growing along the highway or behind a motel in waste places. New plants are showing up all the time as climate changes and man alters the surface of the earth.

Recently I found *Fatuo villosa*, a plant not listed in any Carolina flora, in my garden. Maris asks important questions about the issue of pristine-native-only vs. altered-disturbed and sometimes ‘novel’ ecosystems. She asks Americans in particular to look around them in their own backyards, rather than dwell on far-away ‘pure’ nature which is becoming less and less available. I think the NC Native Plant Society should also relax its standards to include disturbed and non-native plants. I agree that it is time to rethink this dichotomy in relation to the natural world.

Charles Racine



Are “Sterile” Cultivars Safe?

Sheilah Lombardo

At first it seems like a common-sense solution to the problem of invasive exotic plants: Curb their spread by selecting and cloning individuals that produce fewer viable seeds.

And sure enough, some varieties of well-known invasive plants are being marketed as less prolific and therefore “greener” alternatives to their thuggish kin.

But is lowered fertility really the answer to the invasive problem?

A team of researchers decided to look into that question, applying mathematical population modeling to predict the effects of reduced fecundity on population growth rates of invasive plants. (Knight et al, 2011) Their findings demonstrated that even large reductions in seed production, viability or germination rates may not significantly limit the population growth of long-lived invasive species.

They concluded that marketing claims of noninvasiveness are unsubstantiated. “We are concerned that the marketing of cultivars as ‘safe to natural areas’ has advanced much faster than the research evaluating those cultivars,” the researchers wrote.

They made an important distinction. “For taxa that do not spread vegetatively, cultivars *per se* do not invade: Their offspring invade.”

Because most cultivars do not breed true, they are not grown from seed. Instead, in order to duplicate their desired traits, they usually are propagated

vegetatively by cuttings or tissue culture. But unless a cloned plant is truly sterile, it has the potential to reproduce sexually, either by self-pollinating or by outcrossing with nearby cultivated or feral relatives. Since the seed-grown offspring of

a cultivar are likely to differ genetically from the parent (s), they can be expected to exhibit different traits.

The researchers referenced two well-known examples of supposedly sterile cultivars that outcrossed. The ubiquitous ornamental Bradford pear (*Pyrus calleryana* ‘Bradford’), while self-sterile, readily crosses with related pears to produce viable seed that is dispersed when wildlife eat the fruit. As a result, wild Callery pears are now widespread throughout much of the United States.

Likewise, cultivars of purple loosestrife (*Lythrum salicaria*) that once were marketed as sterile later proved to outcross and produce seed prolifically. I saw this firsthand many years ago in my own Minnesota garden, when my “sterile” *Lythrum* ‘Morden’s Pink’ produced hundreds of seedlings, presumably the result of cross pollinating with a wild population of purple loosestrife that grew literally across the tracks.



Callery pears gone wild

The variable nature of sexual reproduction is just one factor that can affect the popu

lation growth of a species. The earlier a plant reaches reproductive maturity, for example, and the length of time it lives can have a dramatic influence on the number of offspring it may produce over a lifetime.

The researchers therefore recommend more rigorous study of potentially invasive plants, taking their entire life cycle into consideration.

In the meantime, we gardeners would be wise to regard overblown marketing claims with skepticism.

Sheilah Lombardo

References

Tiffany M. Knight, Kayri Havens, and Pati Vitt. Will the Use of Less Fecund Cultivars Reduce the Invasiveness of Perennial Plants? *BioScience*, October 2011



Birds, Butterflies, and Plants

The Triad Chapter of the NC Native Plant Society joined other nature groups on a field trip to the Blue Ridge Parkway on Saturday, Sept. 24 & 25, 2011. It was organized by the Triad Chapter of the Carolina Butterfly Society and was the 5th annual field trip to the Blue Ridge Parkway for that chapter. This year members of the T. Gilbert Pearson (Guilford Co.) Audubon and Forsyth County Audubon, Piedmont Bird Club, and NC Native Plant Society were invited to participate.

Despite the potential for rain and chilly weather, we had a good turn out of 15 people on Saturday, seven of whom stayed over to Sunday for more wildlife watching. Participants included Don Allemann, Greensboro, NC; Dennis Burnette and Lynn Burnette, Greensboro, NC; Jim Eldrett, Greensboro, NC; Carl Ganser, Indian Trail, NC; Lisa Gould, Winston-Salem, NC; David Kastner and Marty Kastner, Blythewood, SC; Maxine Kelly, Pfafftown, NC; Julien McCarthy, Brown Summit, NC; Gregg Morris, High Point, NC; Judith Pate, Brown Summit, NC; Bob Perkins, Woodlawn, VA; Ann Walter-Fromson, Greensboro, NC; and Bud Webster, Raleigh, NC.

We went to a different section of the Blue Ridge Parkway this year due to a section of the Parkway we usually visit being closed for construction. We started at the Blue Ridge Music Center at Milepost 213 in Virginia near the NC line and worked our way north to Tugle's Gap around Milepost 168.

The trip was timed for around the peak of Monarch migration. There were a few on Saturday, but there were times on Sunday morning when the air seemed full of Monarchs and it was hard to count them all. We were happy with our total of 95 adult Monarchs plus one caterpillar. The total number

of butterfly species for the two-day trip was 27, not too bad for a mostly cloudy and cool weekend.

One of the good finds among the butterflies was a *Cerosa*¹ form of Common Buckeye in mid afternoon on Saturday. The color form has a distinctly rose-red coloration on the underside of the hindwings (and sometimes elsewhere) that is quite beautiful. It seems to be an uncommon to rare form that occasionally appears in autumn. It was a first for most people in the group.

The birds were a bit more scarce than expected. The weekend was near the predicted peak of raptor migration along this section of the Parkway. While we saw four hawk species, large numbers never materialized when we were on the overlooks. Our ³consolation prize² was that most of our group got good looks at Wild Turkeys at several different spots. Our trip total of bird species was 29.

We had expected a beautiful display of late summer wildflowers, and we weren't disappointed. The roadsides and hills were splashed with yellow and white and highlighted with reds and purples. We walked through meadows dotted with clumps of goldenrods, ironweeds and cardinal flowers. Lisa Gould made a list of the species with the most conspicuous flowers and fruits. In addition, the leaves on a few trees already had begun to show some color, particularly species such as tulip poplar, sourwood, black gum, dogwood, and red maple.

Parkway visitors often see other species, including mammals such as deer, woodchucks, chipmunks and squirrels. However, we were treated to a crustacean, not something one sees very often in the mountains. In a wet

meadow on the Blue Ridge Music Center grounds we discovered numerous holes surrounded by piles of damp sandy soil. Several of us found the apparent builder, a rather large brown and orange crayfish. Biologist Ed Corey looked at some photos of one of the ³crawdads² and thinks they probably were Upland Burrowing Crayfish, *Cambarus dubius*.

On the following page are lists of the birds and butterfly species we saw on this field trip.

Dennis

--

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Species lists from Butterfly trip...

Report - Blue Ridge Parkway Field Trip
Sep. 24-25, 2011

Butterfly Species

(First number Sat., 9/25;
second number, Sun., 9/25):

Pipevine Swallowtail 4, 2
Eastern Tiger Swallowtail 3, 5
Spicebush Swallowtail 2, 2
Cabbage White 22, 15
Clouded Sulphur 5, 0
Orange Sulphur 15, 34
American Copper 2, 0
Eastern Tailed-Blue 15, 9
Variegated Fritillary 12, 2
Great Spangled Fritillary 12, 1
Meadow Fritillary 18, 2
Pearl Crescent 104, 19
Eastern Comma 0, 1
American Lady 1, 0
Common Buckeye 28, 11
Red-spotted Purple 0, 2
Common Wood Nymph 2, 0
Appalachian Brown 0, 1
Monarch 7, 88 + 1 caterpillar
Silver-spotted Skipper 0, 1
Common Checkered-Skipper 1, 0
Clouded Skipper 3, 0
Least Skipper 5, 0
Fiery Skipper 5, 0
Crossline Skipper 1, 0
Sachem 22, 5
Zabulon Skipper 1, 1

Daily species totals: 23, 19

Species trip total: 27

Report - Blue Ridge Parkway Field Trip
Sep. 24-25, 2011

Bird Species

Canada Goose
Black Vulture
Turkey Vulture
Sharp-shinned Hawk
Broad-winged Hawk
Red-tailed Hawk
Osprey
Wild Turkey
Mourning Dove
Ruby-throated Hummingbird
Eastern Phoebe
Downy Woodpecker
Pileated Woodpecker
Blue Jay
American Crow
Common Raven
Carolina Chickadee
Tufted Titmouse
Carolina Wren
Eastern Bluebird
American Robin
Gray Catbird
Northern Mockingbird
European Starling
Eastern Towhee
Northern Cardinal
American Goldfinch
Song Sparrow
House Sparrow

Species total - 29



Great spangled fritillary
Dennis Burnette



Monarch caterpillar
Dennis Burnette



Trip participants in a meadow



Images from Shaken Creek Trip



Hidden Springs

NCNPS member Tom Baugh has started a new blog...stretch your mind and join Tom on his journey, which he says “has been motivated by a strong interest in nature and an equally strong curiosity about humanity in its interactions with nonhuman nature.”

“Named for the springs that flow in the hollow below his house, Hidden Springs is also a metaphor for those many streams of intellect, creativity, and sensitivity that flow from each of us.”

www.hidden-springs.blogspot.com



Letters to the Editor

From and email sent from Tom Baugh to his brother Jim Baugh on November 15, 2011

"This is a day of celebration! The plant beds are covered with raked and mulched leaves...of which we have more than a surplus. Yesterday was the last of the big leaf processing days. There is still a substantial load of leaves on the red oaks. When they are on the ground, I'll mow them up and spread them out on the beds as a final layer. Even during winter, leaves (under the top layer) decompose at a pretty rapid rate. The rain over the next 48 hours will compress the leaves, start the decomposition, and set the beds. When Spring comes, I begin to remove pounds of compost from the composter and use it to prepare the pots and the gardens. After our last hard freeze around Mother's Day, I peel the remaining leaf mulch off of the beds and, mixed with what is still in there, put it into the composter and start the entire yearly process over. It is a wonderful cycle we have here. While my neighbors are disturbing the hood with their mulch machines and leaf-blowers, I'm quietly raking and piling and, with a little mowing and without much strain or stress and no noise, move literally hundreds of pounds of leaf material to guide and feed a natural process. Our neighbor Bill says that he knows when winter is about to arrive because our beds are prepared and mulched and ready."

Tom Baugh
Transdisciplinary Ecologist
Hidden Springs
<http://hidden-springs.blogspot.com>



Missing Letters !!!

I get much pleasure looking at the Plant Gallery of our NCNPS. Twice I have been contacted by persons who know me outside NCNPS but found my name and photos while doing a Google search on a plant of special interest to them. I expect you have had the same experience. So, I think this fine web site is making an effective contribution to fostering an appreciation for native plants.

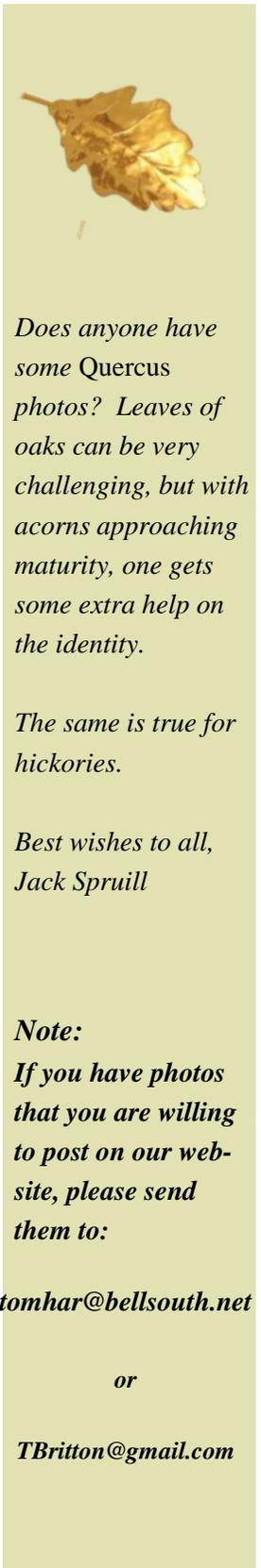
Missing postings for N and Y

I think we are now missing postings only for the letters N and Y. I think the obvious first N can be *Nyssa sylvatica*. I intend to work up some photos in the next few days. I have some photos of one in bloom somewhere if I can find it. treat.

I will also work on getting some photos of *Nyssa aquatica* both here in Hampstead and on my farm on the Albemarle. At this time of the year the swamps along the Albemarle tend to have lots of its olive size fruit on ground and in the water.

I guess that a Yucca is the obvious choice for the Y posting?

Best regards,
Jack Spruill
Hampstead



Does anyone have some Quercus photos? Leaves of oaks can be very challenging, but with acorns approaching maturity, one gets some extra help on the identity.

The same is true for hickories.

*Best wishes to all,
Jack Spruill*

Note:
If you have photos that you are willing to post on our website, please send them to:

tomhar@bellsouth.net

or

TBritton@gmail.com



Letters to the Editor, cont.

Hi Kathy:

I brought plants to the NCNPS meeting and sale in Greensboro earlier this year. They were grown from seed labeled as Pine Lily seed, but they are not Pine Lilies. They are a non-native white trumpet lily.

I will check with the seed source and see if Pine Lily seed is available and try again next winter/spring and may be able to supply the correct plant to those who purchased the mislabeled plants. I am sorry about the error.

John Neal

To the Editor:

I read with interest Anna Weston's article on Pearson's Falls in the August-September 2011 issue of the NC Native Plant Society newsletter. While her article inspired me to visit the preserve, it also made me realize that I've already seen some plants from Pearson's Falls in the form of herbarium specimens.

The UNC Herbarium in Chapel Hill has Donald Culross Peattie's specimens from Polk County, North Carolina. We have been cataloguing and databasing the ca. 750,000 specimens in the herbarium since 2002, and have the data entered about 100,000 of them. While Polk County has not been a focus of our cataloguing, to date we have entered label information for 460 specimens from that county. Of those 226 were collected by Peattie, and of those, 16 were collected by him at Pearson's Falls.

I was particularly pleased it was pointed out that Peattie's "Natural History of Pearson's Falls" is available on-line via the UNC-Asheville library. An interesting project would be to take Peattie's list of plants ("Supplement", pages 58-66), and see just how many are documented with specimens in the Herbarium. Any takers??

Carol Ann McCormick
Assistant Curator, M.C.S.
University of North Carolina Herbarium (NCU)
North Carolina Botanical Garden
mccormick@unc.edu



NCNPS members attending Cullowhee 2011

Photo courtesy Jean Woods



COMING EVENTS

April 13—15: Saluda, NC, Including Pearson's Falls

For this special trip, your registration fee covers entrance into Pearson's Falls and a copy of Donald Culross Peattie's *Pearson's Falls Glen: Its Story, Its Flora, Its Birds* (48 pp., printed by Tryon Garden Club). The book describes the area and includes plants lists and a few photos.

Wildflowers and Plant Communities of the Southern Appalachian Mountains

Botanist Tim Spira introduces you to a new way of looking at native plants by emphasizing their relationship with each other. Tim will reveal the multi-layered tapestry of plant life in the Southern Appalachian Mountains by briefly describing representative plant communities with particular attention given to rich cove forests, the most species-rich community in the region. Interesting features of wildflowers, including how they interact with each other, and the animals that pollinate their flowers and disperse their fruits/seeds will be discussed.

About the speaker:

Tim Spira, Ph.D., is a plant ecologist, native plant gardener, hiker, and professor of botany at Clemson University where he teaches field botany, plant ecology, and the natural history of wildflowers.

He's the author of the recently published book, *Wildflowers and Plant Communities of the Southern Appalachian Mountains and Piedmont: A Naturalist's Guide to the Carolinas, Virginia, Tennessee, and Georgia* (University of North Carolina Press). Rather than organizing plants, including trees, shrubs, and herbaceous plants, by flower color or family characteristics, as is done in most guidebooks, Tim takes a holistic, ecological approach that enables the reader to identify and learn about plants in their natural

communities. This approach, according to Spira, better reflects the natural world, as plants, like other organisms, don't live in isolation; they coexist and interact in myriad ways.

Tim and his spouse Lisa Wagner divide their time between Clemson, South Carolina, and Asheville, North Carolina, where they have transformed their lawns into gardens featuring a diversity of native plants, natural habitats, and a raised-bed organic vegetable garden. They enjoy traveling to visit natural habitats around the world.



June 9: Annual Picnic With Larry Mellichamp on Pollination Biology

Greensboro, NC

**Watch for
Saluda trip
details and
registration
form in the
mid-to-late
February
newsletter.**



NCNPS Board and Members at work in the community 2011

Talks:

Place/Group	# people	Topic
Lawndale Garden Club	25	My Meadow Making
Rock Hill SC Garden Club	8	My Meadow Making
Triad Chapter NCNPS	18	My Meadow Making
Winston Salem Wildflower Club	9	My Meadow Making
NCNPS Southern Piedmont Chapter	15	Propagation
NCNPS Triangle Chapter	20	Propagation
Western Carolina Botanical Club	30	NC Native Orchids
Guilford Garden Club	20	NC Native Orchids
Salisbury Parks & Recreation	50	Landscaping with NC Native Plants
Wake County Herb Society	30	Landscaping with NC Native Plants
Sedgefield Garden Club	28	Native Plants in Herb Gardens
Roanoke Herb Society	30	The Green Man in Myth and Forest
Charlotte Garden Club	80	Gardening with NC Native Plants
Old Salem	20	Hidden In Plain Sight: Native Herbs
Herb Society of America, Annual Meeting	90	Notable Native Herb: <i>Lindera benzoin</i>
Cape Fear Botanical Garden	25	Gardening with NC Native Plants
Cape Fear Botanical Garden	35	Gardening with NC Native Plants
Mid Atlantic District, Herb Society of America	70	Moon of the First Frost: Autumn in Field & Forest
Carolina Butterfly Society	15	What Plant, Where?: Native Plants for Butterflies
Lexington VA Herb Guild	40	Hidden In Plain Sight: Native Herbs
Halyburton park, Wilmington, N	14	Plant Propagation
Keying/Identifying Native Plants	25	UNC Wilmington/B.W. Wells Preserve
Madison County Garden Club	20	Why Garden with Native Plants?
Green Fair - Statesville	8	Native Plants
Green Fair - Statesville	8	Working with Nature - composting
Native Plant Certificate Program - UNCC	20	Early Women Botanists
Western Carolina Botanical Club	32	Trilliums
Master Gardeners - Statesville	15	Working with Nature - composting
Lake Norman Garden Club	23	Early Women Botanists
Franklin Garden Club	28	Gardening with NC Native Plants
PEO	20	Landscaping with NC Native Plants
Steel Magnolias - Zebulon, NC	16	Landscaping with NC Native Plants
McGregor Garden Club	26	Landscaping with NC Native Plants
Hidden Hills Garden Club	9	Landscaping with NC Native Plants
Cary Garden Club	11	Natives of the Piedmont
Daniel Stowe Botanical Garden	25	Natives of the Piedmont
Master Gardeners of Mecklenburg County	20	Gardening with NC Native Plants
Charlotte Herb Guild	30	Gardening with NC Native Plants
Mount Holly Book club	15	Natives of the Piedmont



Board at work continued...

Piper Glen Garden Club	15	Gardening with NC Native Plants
Master Gardeners of Union County	15	Natives of the Piedmont
Winston Salem Wildflower Club	45	Native Plant Propagation
Greensboro Garden Club	35	Gardening with NC Native Plants
Burlington Garden Club	20	Native Plants and Butterflies
Rare Flora Meeting	85	Endangered Plants and NCPCB Preserves
Raleigh Garden Club	16	Endangered Plants
UNCA Horticulture	125	Native Endangered Plants
Winston Salem Wildflower Club	16	Propagation
Orchid Society, Gulfport, MS	30	NC Native Orchids
Greensboro Garden Club	40	Native Plants and Butterflies
Greensboro group	60	Native Plant Propagation
Greensboro Garden Club	12	Bog Gardening
Greensboro group	45	Native Plants and Butterflies
Reidsville Garden Club	18	Native Plants
Lenoir Garden Club	25	Native Plants
Brevard Master Gardeners	25	Native Plants and Butterflies
NC Native Plant Certificate - UNCC	14	Bog Gardening
NC Native Plant Certificate - UNCC	16	Tree Id
Total	1680	

Wild Flower Walks led by NC NPS member for the public

Meadow Walk Bethania, NC		Meadow
VA NPS - Green Swamp	20	Green Swamp
NC NPS Wilmington Chapter/Triangle Orchid Society - Green Swamp	30	Green Swamp
NC NPS Wilmington Chapter/Southern Piedmont Chapter -- Green Swamp	20	Green Swamp
Pilot Mtn. State Park, Friends of Sauratown Mtns.	7	Wildflower Walk
Hanging Rock State Park, Friends of Sauratown Mtns	15	Wildflower Walk
Halyburton Park, Wilmington, nc	50	Get to Know Native Plants Walk
Wildflower Walk with Ed Schwartzman - open to public	11	John's Rock, Transylvania County
Max Patch	12	Wildflower Walk
Laurel Hill Preserve	25	Wildflower Walk
Suther Prairie	20	Wildflower Walk
Mineral Springs Greenway Walk	5	Wildflower Walk
Boone	11	Wildflower Walk
Cashiers	12	Wildflower Walk
Bear Pen Gap/Wolf Mt. Overlook	8	Wildflower Walk
Shaken Creek	45	Wildflower Walk
Swannanoa, NC	42	Wildflower Walk
Reedy Creek Park	16	Tree ID
Western Carolina Botanical Club	18	Tree ID
Total	367	



Board at work continued...

Shows/Exhibits

Green & Growin' Show

NC Native Orchids

Triad Orchid Society Show

Southern Living show

NC State Fair

Fire in the Lakes Festival

Greenfield LakeFest

Asheville Botanical Garden Plants Sale

Butterfly Demo - Arbor Day - Statesville

Fur, Fangs, & Feathers Festival

Charlotte Clean and Green

Hummingbird Festival

Garden Clubs of NC Event

Indian Trail Fall Festival

Matthews Earth Day

Greensboro

Ceiner Botanical Gardens, Kernersville

Greensboro

Charlotte

Raleigh

Boiling Springs Lakes

Wilmington, NC

Asheville

Statesville

Crowder's Mountain State Park

Charlotte

Reedy Creek Park, Charlotte

Charlotte

Waxhaw

Matthews

Projects/Consultation

Donated native plants

Design and installation of landscaping

Rescued native plants from destruction for a development

Girl Scouts Rain Garden

Native Plant Children's Garden Project

HAWK - plant sale

Village of Marvin Park

Silvermount Senior Citizens House and Gardens

The Haven - Homeless Shelter , Brevard, NC

West Jefferson

Reedy Creek Elementary School

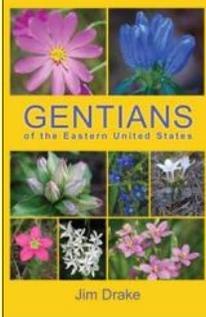
Kings Mountain State Park

Matthews

Marvin, NC



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This book by author Jim Drake covers the family Gentianaceae occurring within the Eastern United States. It is possibly the most comprehensive text covering the vast range of genera within the family Gentianaceae.

Jim has attempted to provide descriptions of all members of this family within his very broadly defined "eastern" U.S. Text descriptions along with ample photographs help the reader to understand and enjoy the range of wildflowers included within this diverse family.

Beginning with *Bartonia* and finishing with *Voyria*, this text attempts to fill the genera in between including, *Gentiana*, *Sabatia*, lesser-known genera such as *Centaurium*, *Halenia* and many others. Not only focusing on the blue gentians, this 220 page guide gives equal treatment to the rest of the eastern gentian family including both common and less well known members.

Available in late January 2011
inquiries may be made to
contact@breathospring.com

\$24.95 plus shipping.
Add 6% sales tax only if buyer is in Georgia



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NC Native Plant News

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NORTH CAROLINA'S NATIVE PLANT SOCIETY SINCE 1954



Two *Matelea* spp. at Penny's Bend in Durham

