



Recreating a Vanishing Piedmont Landscape at Sarah P. Duke Gardens

By Annabel Renwick, Horticulturist at Duke Garden

Gazing across a sea of golden-headed grasses gently waving in the breeze and towering over wispy clouds of white thoroughworts [*Eupatorium* sp], I catch the luminous flash of goldfinches darting between the blooms of lofty green-headed coneflowers, grazing seed while in flight. It's astonishing to consider that fourteen months earlier this billowing landscape, now known as the Blomquist Garden's 'Piedmont Prairie', was just bare ground, not a plant in sight. Incredibly, one full season later we are looking in awe at an apparent mature and well-established meadow. Each day brings new discoveries, be it plants coming into



Photo by Annabel Renwick

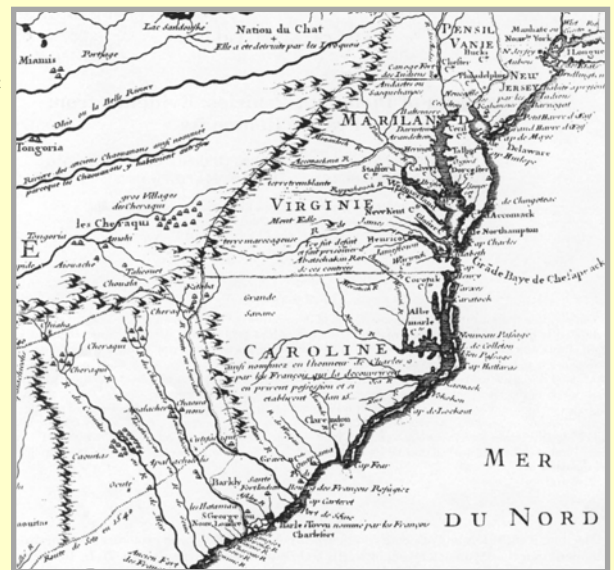
View of the Piedmont Prairie Classroom in the Blomquist Garden of Native Plants

bloom or turning to seed, dainty butterflies dancing between flowers or with each other, minute baby tree frogs staring out from their high perches amongst the sturdy vegetation, the changes in the light as it dances across the glade or the myriad wild bees sharing floral feeding platforms with less conspicuous insects. Simply this is not a boring landscape, it is constantly moving and humming with activity. Even as we planted the first milkweed into this unadorned, featureless space, as if signaled by whispers silent to the human ear the monarch butterflies appeared; the message was already spreading and the wildlife was starting to arrive.


When I arrived to the Carolina Piedmont eight years ago I discovered a vastly different landscape from that encountered by John Lawson, an early English ex-

plorer, in 1701. When the first explorers and early colonists trekked through the Carolinas, they would have commonly encountered grassland landscapes, possibly not unlike the one we have created at the Blomquist Garden of Native Plants at Duke University. Lawson, in his journal "A New Voyage to Carolina" published in 1709, describes walking through many open grasslands he called savannas, even observing the paucity of trees in the region close to where High Point now lies. These writings are supported by early maps of the southeastern U.S. The famed French cartographer Guillaume DeLisle depicts the Carolinas with the term *Grande Savanne* written across the northern piedmont. Where Durham, NC now sits was savanna in 1718, but by 1869 it had become a vibrant tobacco town and the savanna was converted into cropland.

During 17th and 18th centuries, agriculture in Britain was being revolutionized. One of the earliest changes that



Guillaume DeLisle 1718 map of the Carolinas



took place was land enclosure resulting in the loss of common grazing land. The poor once had right to graze their animals on these lands, but once this was removed, the levels of poverty increased throughout the country. This in turn led to greater emigration and movement to the new British colonies in the West. Those early colonists did not arrive to the Carolina Piedmont to be greeted by a terrain full of hardwood forest but to a land that had been groomed by Native Americans. These indigenous populations did not only 'hunt and gather' but they also grew crops; they farmed. The native peoples were adept at maintaining game-lands that attracted bison, elk and herbivorous waterfowl such as geese and crane. In addition to grazing, anthropomorphic fire was used as a management tool to restrict the growth of woody shrubs and tree saplings. This allowed light to reach the soil and stimulate herbaceous seeds to germinate and grow, producing open grazing land. The subsequent removal of the Native Americans, the bison and the elk, in addition to the advent of extensive crop farming and lumber production by the colonists, led to the reduction of southeastern native grasslands. These Piedmont prairies are vanishing grassland ecosystems that covered a substantial part of the Carolina Piedmont prior to the arrival of European colonists.

Today, as the population of North and South Carolina continues to increase and the piedmont becomes increasingly urbanized, the plants and wildlife that once existed in these grassland communities are found only in 'remnant' prairies such as those under power-line 'rights of ways' and, on roadsides and old pastures, and they are becoming increasingly threatened and endangered. The 'Piedmont Prairie' project at Duke Gardens was first conceived by Stefan Bloodworth, the curator of the Blomquist Garden of Native Plants, more than ten years before there was an opportunity to put the idea into practice. Duke Gardens receives close to 300,000 visitors a year and offers an outstanding opportunity to inform and educate the general public about the loss of this precious, wild landscape and its associated wildlife.

Although the botanical makeup of a pre-colonial piedmont grassland community is not recorded, the plants growing in remnant prairies help to define ideas of what may have been present. In addition there remain small regions that have received minimal cultivation on specific soils in North Carolina that are difficult to work. These soils have been formed from the erosion of magna-extrusions that degrade into a clay soil rich in iron and manganese. Today these regions carry some of the most endangered plant species belonging to the 'piedmont prairie' grassland ecosystem. During the past three years, we have assembled a representative sample of these plants for inclusion in our rendition of a 'Piedmont Prairie'. We have discovered and grown close to 100 species of wildflowers and grasses from seed collected from local wildflower communities within 30 to 50 miles of the Gardens. Close to 12,000 plugs of twelve native grass species were grown by Hoffman Nursery in Rougemont, and the remaining 7,000 wildflowers were grown by Blomquist Garden staff.

The overall goal for the 'Piedmont Prairie' project at Duke Gardens was to create a glade or natural woodland opening and for the planting to appear as if it had been formed with no human involvement. Transforming a bare patch of ground into a fully-fledged plant community within a year did require significant planning and time in terms of choice of plants, their propagation, preparation of the



Symphyotrichum grandiflorum

Photo by Annabel Renwick

site, and not least the design of the planting. An overall 'design' was imposed on the space to be transformed, in terms of where the taller and shorter plants would be positioned, to engage visitors and allow them to have long or short views as they journeyed throughout the landscape. The detailed planting design used an "ecologically-based plant design" approach. This involved forming matrices across the site, into which each species would be planted according to its environmental requirement for factors such as light and moisture, its growth habit, reproductive spread and how the species associate with each other in the wild. This design approach helped establish a very natural looking landscape.

The prairie has been a constant surprise to ourselves as well as to visitors. The sheer growth and vivacity of these plants in one year has been outstanding. The plants grow as if they belong here, which of course they do, being well adapted to the local soil and climate. They've survived periods of heavy rain as well as hot dry weather and they recovered to look stunning. The prairie has attracted much interest from landscape architects and designers as well as local land owners and managers who are considering employing this type or similar landscaping in their own projects. Exceeding all of this, the most pleasing surprise has been to observe the quantity and quality of wildlife that has moved into the landscape and made it home. ♡

The **HYPERTUFA TROUGH** workshop creates a stone-like planter, relatively lightweight, with excellent drainage, and perfect for your special plants on the patio or in the garden. It will weather to a light gray and used in the shade will attract moss! You put together a reusable form, mix the ingredients, construct your own trough, and take it home that day! All materials are supplied. Maximum class participants is 12.



Date: Saturday, March 25, 2017

Time: 9am- 12 noon

Location: 4904 Hermitage Dr., Raleigh

Cost is \$85. Preregistration is required.



NEW for 2017 workshop, the **ORB (Sphere!)** workshop is an answer to many requests. You will construct and sculpt an organic and artistic Orb in this workshop. Made of strong, weather proof materials, your Orb can be completed and taken home with you. Materials are supplied. Maximum class participants is 8. Join us to create a large orb for the garden that offers a sense of being rooted in the earth!

Date: Saturday, March 25, 2017

Time: 1pm - 4pm

Location: 4904 Hermitage Dr. Raleigh

Cost: \$100 and preregistration is required.

Registration by check - payable to Lasting Impressions. Mail to:

Lasting Impressions
4904 Hermitage Dr.
Raleigh, NC 27612

If you have any questions, Please email: Amelia_Lane@gmail.com
Amelia Lane and Beth Jimenez, partners, Lasting Impressions



Your Backyard – Regions Unknown

By Michael J. Papay

This is a story that began overseas more than two hundred years ago and went right through what figuratively, and in some cases literally, could be your backyard. A foreigner made discoveries here that just might surprise you – even if you are a botanical aficionado.

In 1780, André Michaux, a Frenchman, attained favor and fame when he healed the Shaw of Persia. When Michaux returned to France with plants and seeds - and ever increasing acclaim - King Louis XVI appointed Michaux the Royal Botanist. King Louis XVI realized the New World might hold botanical riches of commercial, agricultural, and medicinal value for France, so he sent Michaux to America to reconnoiter the land. And so went Michaux – with gusto!

Michaux set forth on a remarkable, bold, courageous botanical excursion that traversed Georgia, the Carolinas, and Virginia. He made discoveries all along the way. Michaux's hey days lasted until 1789 when the French Revolution began, and ended dramatically when King Louis XVI was executed by guillotine in 1793. So ended a thousand years of continuous rule by the French Monarchy, and with it André Michaux's salary. He still had his head though, and Michaux tried in various ways to begin anew in America, without much success. So Michaux returned by boat to France in 1796 to begin anew there. However, the boat that carried him ended in shipwreck. Michaux somehow survived that misadventure too, and rather remarkably, saved his entire botanical collection from America. Once again he gathered himself together, restarted his career, which ended with finality all too soon in 1802 when a tropical disease struck him down amidst the botanical splendors of Madagascar. Fortunately, Michaux had the foresight to compose and submit his lifetime's work for publication before he left France, and so his *Flora Boreali-Americana* went to press posthumously in 1803, putting the spotlight on plants that Michaux had discovered and named.

Perhaps one of the strangest plants that Michaux discovered will at first seem very familiar – because until it blooms it looks very much like a grass. The worldly Michaux knew far better than that however, and he gave this plant that he discovered in Georgia an entirely new genus name – *Nolina*. He named the genus in honor of the Director of the French Royal Nursery, the abbot, Pierre-Charles Nolin. And he named the species for the land in which he'd made the discovery, calling it - *Nolina georgiana*.

The amazing thing about *Nolina georgiana*, though it is itself unassuming, is that it is a far north species of a genera whose other members are astonishingly dramatic plants in their native lands of the American Southwest. Fortunately, surprisingly you might say, some of these species do well in Raleigh, North Carolina. First amongst these species, because of its ease of culture and relative availability in



Two *Nolina nelsonii* (in 2008), at Plant Delights Nursery, Raleigh, North Carolina



***Nolina durangensis* to the left of a *Nolina nelsonii*, author's garden, New Hill, North Carolina**

Far more scarce in trade is another gem from Mexico, *Nolina durangensis*, a native of the great state of Durango. Instead of the stiff blue leaves of *Nolina nelsonii*, the green leaves of *Nolina durangensis* arch wonderfully upward and outward, and as they get older, arch downward. The effect in the landscape is more graceful than bold, something some might say my garden sorely needs. *Nolina durangensis* was discovered by Edward Palmer (age 77) in Durango, whilst on one of his many expeditions in Mexico from 1878-1910. He died five years later, but not before making his extensive collections available to William Trelease. Trelease described *Nolina durangensis* for Edward Palmer in 1911 – the year that his friend and colleague passed away.

Nolina georgiana is so unassuming that it will garner little attention compared to its far more dramatic relatives from the southwest. However, it is the founding member of the genus, and maybe, just maybe, you have passed it by unknowingly. Look for it at the JC Raulston Arboretum, and Juniper Level Botanic Gardens, and out in the wilds flowering in spring in sandy soil of pinelands, savannah, and turkey oak woodlands in Tennessee, Mississippi, Alabama, Georgia, and South Carolina. It should look similar, but smaller, than the *Nolina lindheimeri* in the photo on the right.

Edward L. Greene (of Silver City New Mexico) discovered the northernmost *Nolina* in 1880. “Last January, while clipping lichens from the rocks about Trinidad, I discovered tufts of long, green grassy leaves, which I recognized at a glance as belonging to the Mexican and sub-tropical liliaceous genus, *Nolina*. It was a fine surprise. From the winter material which I gathered, it is evident that the species is undescribed and new (N. *Greenei*, Watson, ined.). It is common up among the high rocky verges of the mesa, along with *Yucca baccata*, all the way between the Apishapa River in Colorado, and Las Vegas in New Mexico.” I sympathize with Mr. Greene’s excitement of the discovery – and thank him for sharing the moment. 🌿



***Nolina lindheimeri*, JC Raulston Arboretum, Raleigh, North Carolina**

All photos by Michael Papay

Introducing New Members—Charlotte Thomann

Char writes, “I’ve been a gardener all my life. I became a more serious gardener when my kids grew up and I joined the Chapel Hill Garden Club - mostly meaning I spend more money on plants!” She is a knowledgeable perennial gardener, mixing in shrubs for structure, and an avid plant collector. “Frequently I buy on impulse whatever looks good at the nursery disregarding my list. My current obsessions are Cyclamen and Galanthus.”

What motivated Char to join the Piedmont Chapter? “I’ve known about NARGS for some time, but hesitated to join because I’m a shade gardener and didn’t know if I would fit in with your group. Then recently I attended a meeting to hear a couple friends/ members talk about their gardens. The vibe I got from the room at that meeting was ‘these are plant people’. So I joined because I think I can learn a lot here and maybe contribute at some point. And, with your help, perhaps figure out how to have a rock garden in my shade.” ❧



Plant Profile by Elsa Liner

Botanical name: *Edgeworthia chrysantha*

Family: Thymelaeaceae

Common Name: paperbush

Category: Deciduous shrub

Zone: 7 to 10

Dimensions: 7’ x 7’

Culture: partial shade, rich moist soil

Bloom time: Late Dec. for 6-8 weeks

Bloom Description: Yellow

Uses: Specimen, shady border, woodland settings



General Attributes: A fragrant, deer-resistant plant with four- season interest. Who could want more! This lovely deciduous shrub begins the year with umbels of up to 40 yellow, tubular blooms at the end of each branch. The delightful fragrance is similar to that of Daphne, and locating Edgeworthia near a walk or patio increases it’s enjoyment as the garden is just beginning to wake up. In spring it leafs out in glaucous lanceolate leaves (3”-5” long x 2” wide) with silver undersides a bit similar to Rhododendron, until fall when the leaves turn a beautiful yellow. As the weather cools it loses its leaves revealing a striking architectural form, the result of unusual tripartite branching. ❧



Introducing Our April Speaker: Matt Mattus, NARGS President 2015-2017

Hi! I'm Matt Mattus - and as if you couldn't guess by now - a life-long plant geek. Ridiculously obsessed with all types of horticulture, some people describe me as a 'Renaissance man' (but honestly, we all know what that really means - simply that I am a bit crazy!). As a professional designer (only meaning that I make my living as a creative person) I prefer to define myself as one who is constantly curious, yet aware that throughout ones life, one is constantly learning. That is what this blog is really all about. Being curious, discovering and learning. <http://www.growingwithplants.com/>

A consummate optimist, I try to focus more on all the good things about life, plants and gardening, and although I know that it helps that I am fortunate to have a greenhouse, a big garden and the means, I also recognize that I've been blessed with this rare gift - something which believe me, I never felt was a gift!). You see, I was born, raised and now live in the same house where my dad was born (BTW - he passed away a few years ago at 100 - all's good though-he had a great life.). It's also the very same home that my grandparents built back at the turn of the last century).



That said, no matter what you may think, it really isn't all that fancy. Our home is located in Worcester, MA, in a working class neighborhood with increasingly low property values, and speeding cars, pit bulls and loud music. It just looks good in pictures!

I currently work for Hasbro - the toy and entertainment company (and I mean - for a long time - nearly 28 years now!). I've been lucky to hold various, lead creative roles, most recently as a Futurist, in their Invention Lab. What does that mean? I can't really say much about what I do at the office, but it's safe to say that I am involved with things which may not be seen for 5-10 years from now. ♪

Plant Profile by Amelia Lane

Botanical name: Rosa 'Chewmaytime' Oso Easy Paprika

Category: shrub rose

Light exposure: sun

Dimensions: 2' wide x 2 1/2' tall

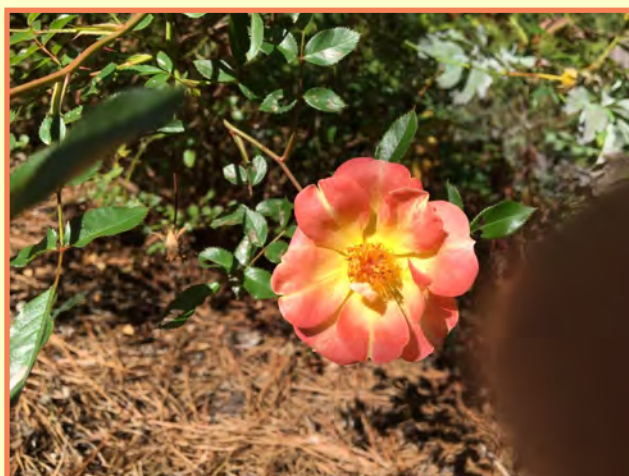
Culture: good drainage and good garden soil

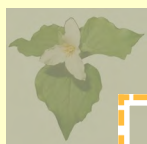
Bloom time: late spring 'til frost

Color: light orange with yellow center

General information: spicy orange flowers. Highly disease resistant. Repeat bloomer. Low mounding habit. Perfect

7 for smaller space. ♪





Hold the Date!

NARGS Annual Meeting and Board Meeting
Raleigh-Durham, North Carolina
November 17-19, 2017

"Southern Rock Gardening: Past and Present"

Speakers:

Tim Alderton, (JC Raulston Arboretum)
John Grimshaw (Author: *Snowdrops: A Monograph of Cultivated Galanthus*)
Larry Mellichamp (North Carolina Native Plant Society)
Andrea Sprott (Elizabeth Lawrence Garden)
Joseph Tychonievich (Author: *Rock Gardening: Reimagining a Classic Style*)
Bobby Ward (Author: *Chlorophyll in His Veins*)
Tony Avent and Jeremy Schmidt (Plant Delights Nursery and Juniper Level Botanic Gardens)

Tours:

Juniper Level Botanic Gardens
Montrose Gardens
JC Raulston Arboretum

Optional: Preconference, two-day tour highlighting unique flora of North Carolina's Coastal Plain

Optional: Open private gardens

Plant Profile by Amelia Lane

Botanical name: *Picea abies* 'Dan's Dwarf'
Common name: miniature Norway spruce
Size: 15" x15" after 6 years; globe shaped to squat pyramidal.
Soil: average; well drained with added gravel or PermaTill
Sun
Evergreen
Grows less than 1" per year
Great for troughs, rock gardens or dwarf conifer area.



NARGS Piedmont Chapter Meeting

JC Raulston Arboretum

9:30 Gathering Time 10 am Program Begins

March 18, 2017

Annabel Renwick

**“Creating a New Ecosystem: the
Development of a Piedmont Prairie”**

Sarah P. Duke Gardens
Durham, NC

Goodies to Share



March R—T

April W—Z

BOARD OF DIRECTORS

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Bobby Ward, Vice Chair/Program Chair

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David White, Treas.

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Plant Sale Manager: Tim Alderton
Refreshments: Maurice Farrier

Message from the Chair

Amelia Lane

Hello from the garden,

Actually I just came in from some late planting. Or does it just seem late due to our recent “summer”? It’s February you say. Surely you can still plant in February for the coming year! Our recent weather has lots of plants putting on their spring show. Even though it is early, the enjoyment of the blossoms and the spring fragrance is delightful! Finding new treasures popping up in the garden reminds me of the wonder of nature.

Our speaker on March 18th is Annabel Renwick from Duke Gardens. She is speaking on “The Development of a Piedmont Prairie.” A most interesting topic! I look forward to learning about the history of our area and what it may have looked like hundreds of years ago.

Preparations are well under way for our booth and plant sale at Raulston Blooms on Saturday, April 1. I will have pots and labels at our meeting for anyone who needs them. I can’t wait to see the variety of plants that members bring in!!

For our March 18th meeting, members with last names R-T are welcome to bring goodies to share during our social time starting at 9:30am. The meeting starts at 10am.

It’s an exciting time to be a member of the Piedmont Chapter of NARGS!! Members willing to volunteer their time and expertise, welcoming new gardeners to our chapter, sharing your gardening knowledge; it all makes for an active and vibrant chapter. ---You are the best!

See you on Saturday, March 18th at the Raulston Arboretum!!
Amelia Lane, Chair, Piedmont Chapter

We are now on Facebook. Join us at:
<https://www.facebook.com/PiedmontNARGS/>

Piedmont Chapter Programs, Spring 2017

April 15, 2017

Matt Mattus, President of NARGS
“Summer-Blooming Garden Bulbs”
Worcester, MA

May 20, 2017

Spring Picnic, 11 a.m.
Garden of Helen Yoest
3412 Yelverton Circle, Raleigh, NC 27612
Raleigh, NC