



The Turk's Cap

Volume 23, Number 1

Spring 2020

The Newsletter of the Delaware Native Plant Society



Letter from the President
by Eric Wahl



Meadow Guides and Guided Meadows

submitted by Rick Mickowski

A step-by-step guide on creating native meadow landscapes.



Plant Highlight: *Claytonia virginica*

by Bill McAvoy

Classic and enchanting, spring beauties have truly earned their common name.



Breaking Bud

by Emma Brown

You may have seen the show "Breaking Bad," now for pun's sake you'll discover how buds break open in early spring.



Vernal News

Some natural resources– resources to refer to when protecting nature– are at your fingertips!



Spring Activities

We all have a little more leisure time to stop and smell the *Rosa carolina*, or *Rosa palustris* (It doesn't have to be an English hybrid tea rose!)



Membership

It's rewarding to be part of the DNPS.

DNPS Officers

President:

Eric Wahl

Vice-President:

Rick Mickowski

Treasurer:

Eric Zuelke

Secretary:

Alison Long

DNPS Mission Statement:

Founded in March 1998, we are a volunteer-based, publicly supported non-profit organization dedicated to the conservation of native plants and their natural habitats through education, science, advocacy, and land stewardship.

Discover more at: <https://delawarenativeplants.org> 



Letter from the President by Eric W. Wahl

Spring has arrived to the Mid-Atlantic. Warmer weather beckons spring ephemerals and new growth to our herbaceous and woody plants. If there's one thing we can count on in these chaotic times, it is that nature's cycles carry on.

This year more than most, I expect many to spend a little more time in the garden. Cultivating, tending, harvesting not only produce but also joy. We all need a little more than we have right now. If you follow us on Facebook, I'll be updating periodically on designing and installing gardens that will help us bring joy into our lives. From meditation gardens, to rain gardens, to victory gardens, every type can benefit from better design.

Since our two March events have been postponed, please continue to watch for updates for future dates and times of those two items. We also have a guest speaker lined up for our Annual Fall Symposium, more on that later. We will also try and schedule a volunteer day in the coming months at the native plant garden in Lewes. The seeds that we spread back in autumn should be peeking through the soil anytime now.

As always, thanks to all our members and a special thank you to those that help us at our volunteer days, we couldn't do it without you. Carry On and Happy Gardening! 🌱

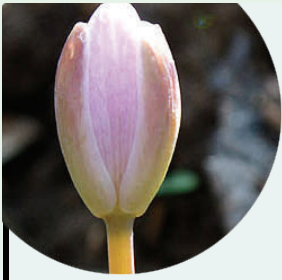
Eric W. Wahl

Connect with the DNPS on Facebook at:

<https://www.facebook.com/Delaware-Native-Plant-Society-114294605325604/>

Or find us at:

<https://delawarenativeplants.org/>



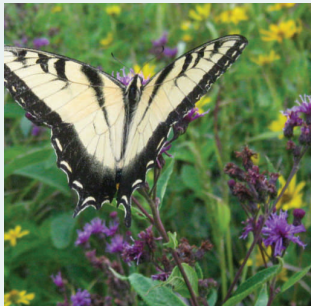
Meadow Guides and Guided Meadows

The Xerces Society and Mahan Rykiel Associates, Inc. have developed a 40-page guide for the planting of meadows in our region, titled: “Mid-Atlantic Native Meadows: Guidelines for Planning, Preparation, Design, Installation, and Maintenance.”

This 40-page guide describes how to plan a meadow space, including:

- Considering applicable native species for the Mid-Atlantic region
- How to clear the area to establish a meadow
- The ways to plant and establish plants in a meadow
- Maintaining the meadow space as a meadow over the long-term
- The pollinators and other wildlife you can expect to see benefiting
- The other ecosystem services– or ecological benefits– that meadows provide

Check out this guide [here](#)!



Eastern tiger swallowtail, *Papilio glaucus*, on New York ironweed, *Vernonia noveboracensis*, from “Mid Atlantic Native Meadows.”

Want to see a Mid-Atlantic region native meadow and other local landscape types?
Stroll through **Mt. Cuba Center’s** smooth virtual tour!
<https://mtcubacenter.org/visit/tour/spring/>
(Feel free to put on a symphony of birdsong in the background.)



Plant Highlight: *Claytonia virginica* by Bill McAvoy, Delaware State Botanist

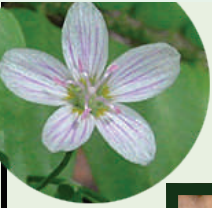


Photo courtesy of
Bill McAvoy

Claytonia virginica var. *virginica*, the Eastern spring beauty of the Montiaceae, the Montia Family, is a native wildflower that blooms in April and May in Delaware. It can be found growing in moist woodlands, along streambanks and floodplains. The Eastern spring beauty occurs throughout the state in both the Piedmont and Coastal Plain physiographic provinces. Its overall natural distribution, ranges from Texas, east to Florida, and north to New England and Canada.

The Eastern spring beauty is a perennial plant with globose tubers. The flowers have five, pale pink or white petals. Insects, such as small bees, flies and wasps are guided to the nectar of the flowers by thin, pink lines on the petals and by a bright yellow spot at the base of each petal. The individual flowers bloom for only three days and close at night and remain closed on overcast days. The seeds are a shiny black and are released from a dry capsule. There are structures called elaiosomes on the margins of the seeds, which are a delicacy to ants, who in turn help to disperse seeds throughout the forest floor.

There are three recognized varieties of *Claytonia virginica*: variety *virginica* has white flowers and wide leaves (up to 10 mm. wide); variety *acutiflora* also has white flowers but has narrow leaves (up to 2 mm. wide); and variety *hammondiae* has yellow flowers. The generic scientific name- or genus- *Claytonia* is for John Clayton, and 18th century Virginia botanist. The specific scientific name- or species- *virginica* means from the state of Virginia. 🌱



Species of *Trillium* (above) as well as *Sanguinaria canadensis*, blood-root, (below) are other early spring flowers with seeds that have elaiosomes. Ants work with all of these elaiosome-covered seeds to disperse them.

Photos courtesy of delawarewildflowers.org



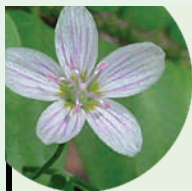
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***Claytonia* at Highland Orchards Farm in Wilmington, DE encircling a shagbark hickory, *Carya ovata*. Each year these beauties light up the lawn like a carpet of bright little stars.**

Permission for photos courtesy of Highland Orchards, Inc.
Photos by Emma Brown

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White Clay Creek State Park
– Judge Morris Estate



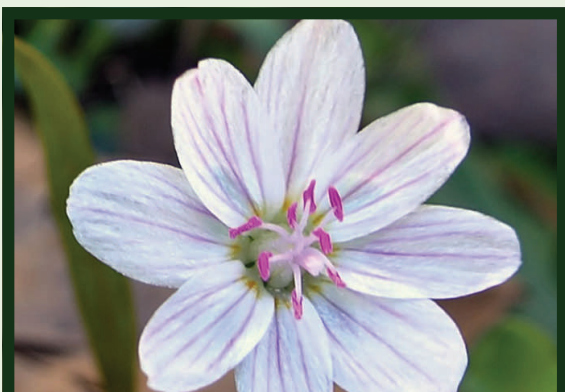
Middle Run Valley Natural Area



Middle Run Valley Natural Area



Middle Run Valley Natural Area



White Clay Creek State Park
– Thompson Station Road



Rittenhouse Park
– Christiana Creek Trail

Beauty comes in all shapes and striations.

Claytonias in flower- photos courtesy of delawarewildflowers.org

Red-leaved *Claytonia* discovered by Sandy and son Nick Johnson, photo by Emma Brown



Br eaking Bu d

by Emma Brown

Every year.

The first week of March welcomes maple flowers beginning to open. Red and silver maple trees, *Acer rubrum* and *Acer saccharinum* show a sheen of color from afar, tufts of red at the ends of branches. Squirrels nip them off and they decorate the earth. Regardless of weather. Observing individuals side-by-side, some maples have a deep maroon or vibrant blood red hue, while a few others may present witch-hazel orange to almost a golden yellow countenance. In Bridgeville and Delmar, some may even sport green- not their own leaves just yet of course but mistletoe nestling in their branches. A great blue heron may fly above the peaceful Delaware landscape and you may look up and sigh in contentment at its straightforward serenity. Inside the maple, some truly exciting things are happening.

WAKE UP! It's consistently WARMER, the daylight is LONGER, and it's been the right LENGTH OF TIME to stop napping the winter away. Dormancy is coming to a close. Deciduous trees once lost their leaves in preparation for this period of slowed metabolic processes during the cold months. They stored enough energy during the previous growing season to form buds, held tightly closed through the winter. The first of these are ready to break open before early spring. Our native maples are examples of these early-blossomers. They flower with the expectation of setting thousands upon thousands of seeds, and only after that process is under way do they open their foliar buds and release new leaves to grow and gather the spring sunlight.

What drives these processes? How do plants know when they should be:

Br eaking

Bu d?

No, it doesn't involve bromine or barium like the title of the show "Breaking Bad" suggests, nor does Bu have a place on the periodic table of the elements. However, plants do rely on transporting and using chemical compounds in order to function.

Photoperiod is the term for the duration of light perceived by the plant. As living organisms, plants respond to their environments. Plants contain pigments, and one specific type- phytochrome pigments- detect light levels, communicating messages in plant cells to produce other chemicals that increase or decrease metabolic activity. As babies, seeds of deciduous plants in temperate climates often require a cold period, and then a period that is not so cold, to get growing. Young plants and adults follow the same schedule- most will rest during the cold period and require warmer weather to kick-start metabolic processes.

These reactions occur in conjunction with the day length and light intensity that the plants experience. Consistently shorter nights cue flowering in plants that produce blossoms in late spring and summer, while consistently longer nights and thus shorter days encourage flowering in plants in fall. The day and night length, intensity of light throughout the day, and changes in temperature and humidity allow for plants to adjust their seasonal rhythms. The movement of

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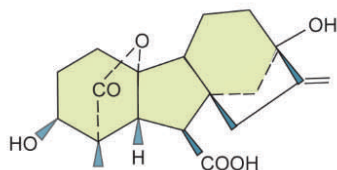


natural chemicals in the plants– hormones of growth and development– facilitate the seasonal preparations that different plants take at different times of year.

Gibberellins are one type of hormone. In many plants, an increased concentration or amount of gibberellic acid (GA) will work to increase growth. Absciscic acid (ABA) is the counterpart hormone that works in the opposite direction. This is a growth inhibitor. The ratio of both GA and ABA controls whether a plant is going into dormancy, breaking out of it, or actively growing. For those of you who weren't expecting to get a chemistry lesson, here's a fun analogy.

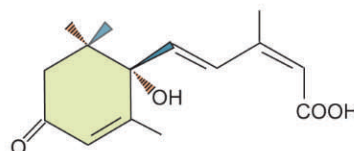
Meet Gibby:

Gibberellic acid



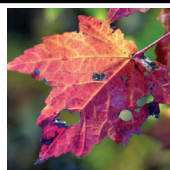
And Abby:

Absciscic acid



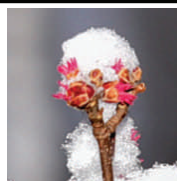
Here's their seesaw ride:

Gibby



Abby

Autumn



Abby

Gibby

Spring



Gibby

Abby

Summer

When Abby outweighs Gibby, she encourages the processes that lead to dormancy. When things lean down towards Gibby, it's his wonderful fault for breaking bud to start unfurling flowers and leaves at the end of winter. When Abby and Gibby level the playing field, active green growth occurs. When we think of springtime we think of plants leafing out, but when it comes to shrubs and trees, the earliest activity we see is flowering, and maples provide a great example. The summer of the previous year, while large green palm-shaped leaves adorned the trees, new buds formed along the stems with intent to become next year's flowers and leaves. Because the maples are deciduous and are scheduled for beauty sleep from around October to February, they had to prepare in advance. Acclimating to shorter days and colder temperatures involves an increase in growth inhibitors and reduction in growth stimulating hormones. The metabolic processes of these plants rely on environmental consistency. When the weather isn't consistent, it can jeopardize the schedule of growth and damage plant tissues. Maples are pretty clever with thousands of cold-hardy flowers that are small and have a low water content. If we have an unexpected cold snap after the weather has warmed, plants with large flowers or foliar buds that swell with the notion to become leaves will likely freeze and "burn" with irreparable damage. Think of your classic saucer magnolia or hydrangea. Not our maples– these crimson darlings wait until flowering is finished to push out new foliage. 🌿

Sources: <http://delawarewildflowers.org/>
<https://irrecenvhort.ifas.ufl.edu/plant-prop-glossary/>

Eichhorn, Evert, and Raven. (2005). *Biology of Plants*. Seventh Edition. W.H. Freeman and Company.



Vernal News

The “Botany Bill” is a collaboration between the Garden Club of America, Chicago Botanic Garden, and a portion of the Plant Conservation Alliance. The goal of this bill is to increase funding to staff botanists within the federal government, to address needs of habitat restoration, invasive species removal, increased use of native species and fostering of endangered and threatened species back to stable status. Both Representative Lisa Blunt Rochester and Senator Tom Carper have supported this bill, and we can continue to show our support for them by contacting them individually to let them know that Delaware really does care. The Delaware Nature Society, Longwood Gardens, and the Pennsylvania Horticultural Society are among almost ninety groups that are listed as supporters of the bill. As members of the Delaware Native Plant Society, we have an opportunity to support this venture.

Find out more about how to participate in helping this bill along at:
<https://botanybill.weebly.com/> 

Need more plant-based entertainment?
 Here's one for you:
 We have four officers on the DNPS board.
 Half of them are Eric-aceous.



DELAWARE NATIVE PLANTS FOR LANDSCAPING AND RESTORATION



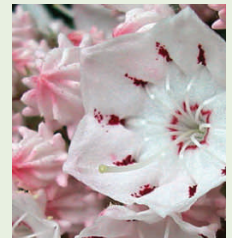
Carya cordiformis

Carya cordiformis (bitternut hickory)

Recommended Species for the Property Owner and Land Steward

Third Edition

In the same family of jokes, instead of “keep calm and carry on,” if you’re enjoying spending time in an ericaceous garden: Keep *Kalmia* and rest on your laurels.



If you haven't already done so, I highly recommend ordering a copy of “Delaware Native Plants for Landscaping and Restoration.” It's an excellent learning and teaching tool for the plant enthusiast, the hobby gardener, the professional landscape designer, and anyone in between. Plants are listed alphabetically in rows and columns provide brief and easy-to-interpret information including light and moisture requirements, whether the plant is deciduous or evergreen, the time of year that the plant flowers, flower color, range of maximum height, region of Delaware the plant naturally grows, and arguably the most important point- the wildlife value of each plant.

You can find information about how to order a booklet or view samples online at:
<https://delawarenativeplants.org/wp-content/uploads/2020/01/Booklet-cover-pic-2019.jpg>



Spring Activities

In light of recent events, the Delaware State Parks are open and free to explore until April 30, 2020. Although nature centers, museums, and buildings are closed, there are plenty of parks of which to partake:

- Alapocas Run and Wilmington State Parks
- Auburn Valley State Park
- Brandywine Creek State Park
- Brandywine Zoo
- Bellevue and Fox Point State Parks
- Cape Henlopen State Park
- Delaware Seashore/Fenwick Island/Holts Landing State Parks
- First State Heritage Park
- Fort Delaware State Park
- Fort DuPont State Park
- Indian River Life-Saving Station
- Killens Pond State Park
- Lums Pond State Park
- Port Penn Interpretive Center
- Trap Pond State Park
- White Clay Creek

Find out more at: <https://www.destateparks.com/>

Consider visiting these other great regional natural resources:

- Audubon Center at Mill Grove, PA
<https://johnjames.audubon.org/visit/trails-and-outdoors>
- Bombay Hook National Wildlife Refuge, Smyrna, DE
https://www.fws.gov/refuge/Bombay_Hook/
- The Delaware Nature Society:
<https://www.delawarenaturesociety.org/>



MEMBERSHIP APPLICATION



Membership is for 12-months, after which we send you a renewal notice.

☐ Full-time Student \$10.00

☐ Individual \$15.00

☐ Family \$18.00

☐ Contributing \$50.00

☐ Business \$100.00

☐ Lifetime \$500.00

Donations are also welcome _____

Membership benefits include:

-  Our quarterly newsletter-*The Turk's Cap*, and website resources
-  Tips and tricks on gardening and landscaping with native plants
-  Annual workshop, symposium, and project work days

Member Information

Name: _____

Organization: _____

Full Mailing Address: _____

Phone Number: _____

Email: _____

Please make checks payable to:

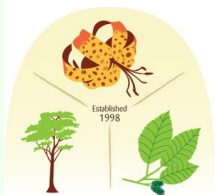
Delaware Native Plant Society
P.O. Box 369
Dover, DE 19903

Photography Index

On Page 1 from top to bottom:

- *Corydalis flavula* - yellow corydalis
- *Sanguinaria canadensis* -bloodroot
- *Claytonia virginica*- spring beauty
- *Acer saccharinum*- silver maple
- *Mitella diphylla*- two-leaf bishop's cap
- *Viola labradorica* -blue American dog violet

Photographs courtesy of David G. Smith at www.delawarewildflowers.org



The Turk's Cap

Volume 23, Number 2

Summer 2020

The Newsletter of the Delaware Native Plant Society



Letter from
the President
by Eric Wahl



Adventures in
Seed-Starting
by Rick Mickowski



DNPS Pollinator
Garden Update
by Eric Zuelke



That Lovely
Lindera
by Keelin Reilly



Native Pollinator
Habitat at
Springer Middle School
by John Sypher



Geometric
Obsession
by Emma Brown



The Humble
Trailing Arbutus
by Pamela Crowe



Summer
Activi-trees and
books to read



The Nighttime
Garden
by Rachel Cameron



Membership

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Letter from the President

by Eric W. Wahl

Summer has quickly come upon us, and with it a new hope that a bit of normalcy will return as well. I successfully started a garden plot at a local community garden that is emerging in town. I have a few vegetables along with a small row of native wildflowers that I started from seed. A few are taking off and I am excited to see them bloom in a few weeks.

This little row of wildflowers reminds me of the meadow DNPS seeded last autumn in Lewes. We paid a visit in early spring; many seedlings were just beginning to emerge. However, since this area is not irrigated and is subject to nature's whims, it appears we will need to revisit this meadow and take a new course of action. Stay tuned for new information on volunteer days and updates.

Due to the pandemic, future events and workshops may need to be rescheduled or perhaps take place on-line. We will continue to monitor the situation. Please follow us through this newsletter and on Facebook, as we carry on with our mission to promote and educate about the use of native plants in our landscapes.

A very generous thank you to our all members for without you, we would not be successful. Stay safe and Happy Gardening!

Eric W. Wahl



DNPS President

Connect with the DNPS on [Facebook](#)

Or find us at:

<https://delawarenativeplants.org/>



DNPS Pollinator Garden Update

by Eric Zuelke

As you may remember, back on November 9th, 2019, we had a volunteer workday to sow the seeds of a new pollinator garden in the northern half of the native plant demonstration garden at the University of Delaware's College of Earth, Ocean, & Environment Hugh R. Sharp Campus in Lewes, DE. We've gone to check on the progress of this project on both Apr 17th and June 8th, 2020, and so far it is slow-going. We've documented 6 species that have germinated (out of the 15 species planted) and have only seen plant numbers in the hundreds (out of the estimated 50,000 seeds planted). We knew it would be a long-term project, and it is definitely living up to our expectations. But growing anything that resembles a prairie or meadow takes years to come to fruition and we're determined to see it through. We have some management to do over the summer and into the fall of this year to help our young prairie along, but we know it will pay off.

Eric Zuelke 
DNPS Treasurer



From left to right:

- The humble beginnings of our pollinator garden (*Chamaecrista fasciculata*)
- Future butterfly food (*Symphytotrichum novae-angliae*)
- One of our nitrogen-fixers (*Fabaceae*)
- From the main part of the garden (*Iris versicolor* & a skipper butterfly [*Hesperiidae*])

Photos courtesy of Eric Zuelke



Native Pollinator Habitat at Springer Middle School by John Sypher



Photos courtesy of John Sypher

Northern paper wasp (*Polistes fuscatus*) on *Zizia aurea*

Springer Middle School has had a great deal of success and interest in the Native Pollinator Habitat Area that was created two years ago. With the help of Dr. Don Coats (Lawn to Life) and the financial support from Dr. Tracy Woodson, Principal of Springer Middle School, the area has literally and figuratively become “abuzz” with life. Initial placement of the garden began in 2018 and last summer became a mature and self-sustaining natural area. Signs donated from the Xerces Society indicate its importance and purpose. With native plants like mountain mint (*Pycnanthemum* spp.), common milkweed (*Asclepias syriaca*), coneflowers (*Echinacea* spp.), asters (*Symphyotrichum* spp.) and black-eyed Susans (*Rudbeckia* spp.) the area is constantly visited by native bees, wasps, butterflies, moths and other pollinators. This habitat is used during the school year as a study area for both the Environmental Science and Zoology classes at Springer. Pollinator numbers and types are documented by the classes. Additionally, it was a feature area for Springer’s Environmental Awareness night in May of 2019. It served as an example for those interested in planting similar gardens.

Continued on next page...



**John tending the
garden**

**Encouraging each
stage of growth**

Ensuring its flowers

**Nourish the littlest
visitors**



Continued on next page...



**Photo
courtesy
of Dave
Brown**

**Time travel:
The 2019
summer
season of the
Springer
garden**

In the fall of 2019, due to the success, beauty and interest this area has generated, Dr. Woodson approved an expansion to double the area initially planted. An area near the school's track was designated, roped off and covered with black plastic tarps to kill the existing grass. This spring, the tarp was pulled back and over 100 plugs of various native flowering plants were planted. This area has been watered and monitored all spring and is in good shape to receive more plugs as well as additional seeding in the summer and fall. With luck, this area will be healthy, vibrant and supporting the work of native insects by late summer this year.

John Sypher 
Educator

Continued on next page...



Help out with pollinator counts!

Butterfly Survey Counting Form

INSTRUCTIONS: Choose a type or cluster of blooms, 1 to several yards diam., that you can observe without moving around, and for 5 minutes, count all the different butterflies (type and number of each) that land or nearly land. Try not to count the same individual twice.

TIPS FOR IDENTIFYING BUTTERFLIES:

- Butterflies are wary (of predation) so don't get too close.
- There are some day-flying moths, exclude them: butterflies have smooth antennae with knobs on the ends; moths have feathery antennae without knobs.

WEATHER CONDITIONS: count May 1 to Oct 1, mostly sunny, >55 degrees and not too windy, and between 10 AM and 4 PM

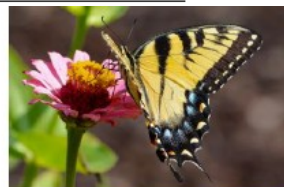
SEND COUNTS TO: doncoats@verizon.net

Date _____ Site (if park, specify area) _____

Plant Type _____ Observer's Name(s) _____

Swallowtails - Large sized (3 inches wingspan), have tail tips (unless a bird removed them)

TOTAL _____



Whites and Sulfurs - Medium sized (from 1 to 2 1/2 inches), either mostly white or mostly yellow to orange

TOTAL _____



Gossamer-wings - Small sized (from 1 to 1 1/2 inches), not mostly white or yellow, slender-bodied, gentle-flying

TOTAL _____



Skippers - Small sized (from 3/4 to 2 inches), heavy-bodied, fast-flying

TOTAL _____



Brushfoots - Everything else, usually showing a lot of orange or black, only four legs visible,

Total _____



Monarchs total _____

Continued on next page...



Help out with pollinator counts!

NATIVE BEE SURVEY COUNTING FORM

Perform counts when weather is calm, mostly sunny, April to October

PLAN: select a bloom cluster, 3 ft. or less in diam. Count bees that actually land on it (forage)- and record below

Note: Most bees have hairy bodies, plumpish often w pollen on them; while wasps are larger with narrow bodies.

Hover flies look very much like bees, variable size, forage less, hover a lot, may also appear to rest on a leaf.

Date _____ Observation site _____ Bloom name (s) _____

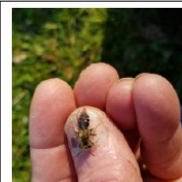
Observer(s) name _____ SEND COUNTS TO - doncoats@verizon.net

Honey Bee – brown
w black stripes, not
native, a managed
bee, a stock animal

Count ____/____

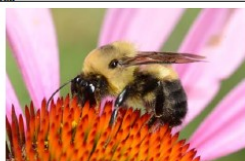


Brown bees, ground nesters, common in spring
in suburban yards Count ____/____



Bumble Bee – pale yellow
Common, fuzzy abdom
Smaller than carpenter
But variable in size

Count ____/____



Small dark bees, many
Are small Carpenter
bees.

Count ____/____



Carpenter Bee – larger
than Bumble Bee and
hairless abdomen, not a
common forager

Count ____/____



Tiny, nearly gnat size,
Often complete with
pollen in leg baskets

Count ____/____



Blue or green metallic bee - orchard bees ↓ common in
some locations Count (both colors) ____/____



Red or red abdomen
Small and hairless,
Are parasitic, replace
Other bees egg on a
Pollen ball with their
own.

Count ____/____



Hover flies ____/____

Beetles, ants and other ____/____

HABITAT FEATURES

Circle the weather conditions for this counting visit – Ideal good marginal

(ideal – warm, above 60, mostly sunny, minimal wind, no rain in past 24 hrs.)

What is the purpose of this site? _____

Estimated size of this site _____

Are other forage friendly blooms present now or during other phases of the warm season ? _____

If so, please list three or four (native or non-native) _____

Is there a water source near – 100 feet or so? _____





The Humble Trailing Arbutus

by Pamela Crowe

It became a springtime ritual for my mother and me, when I was a child. “Let’s look for trailing arbutus today,” she’d say in March or April, when snow still mottled the landscape.

We’d pull on black rubber boots over our shoes, don coats, hats and mittens and climb the slope facing our Pennsylvania farmhouse to visit the trailing arbutus that grew near the top of the hill. Our anticipation rose as we ascended. Would we be too early or too late to see the short-lived flowers?

Mom grew up in various foster homes in Bradford County, Pennsylvania during the 1920s and 1930s. She found the constancy she craved in the common wildflowers that inhabited her rural surroundings and appeared year after year without fail. Trailing arbutus was her favorite.

I was six years old when Mom introduced me to *Epigaea repens*. Leaf litter from the wooded hilltop camouflaged the plant, a mat of small, oval, dull-green leaves embedded in moss. I’d never have found the inconspicuous ground-hugger on my own, and I wondered why my mother seemed so excited to find it.

Boring, I thought.

Then Mom knelt, brushed away the litter and parted the tangled, trailing stems. Clusters of small, pink, trumpet-shaped blossoms popped into view. I was enchanted.

“Smell the flowers,” she said, smiling.

Dried leaves crackled under me, when I dropped to my hands and knees on the rocky slope. Icy water from the spongy moss seeped through my clothing. I bent down and sniffed a tiny nosegay.

A perfume only God could create wafted up my nostrils. I forgot about my

Continued on next page...



"*Epigaea repens* is not a rare species in Delaware, however it is uncommon in the Piedmont province of northern New Castle County. The species prefers dry to moist, sandy soils, which is a soil type that is prevalent on the Coastal Plain of Kent and Sussex Counties. In the Piedmont, it is typically found on wooded (oak and beech) slopes where the soils are well drained with a low pH," says Bill McAvoy, Delaware State Botanist

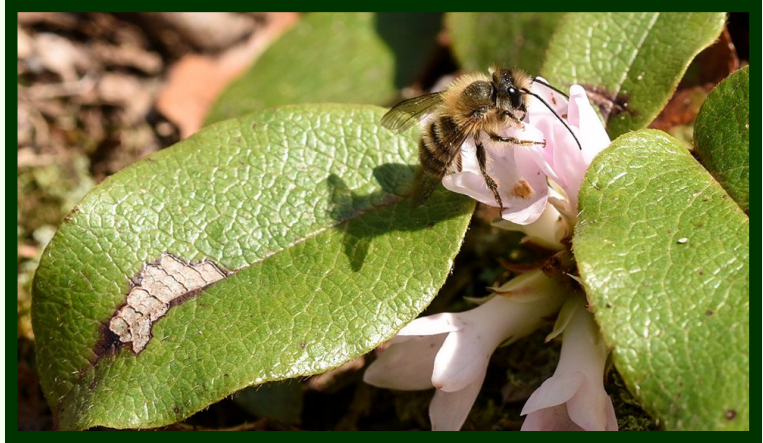


Photo courtesy of delawarewildflowers.org

freezing hands and knees. The heavenly scent conveyed the promises of spring—warm days, pussy willows, apple blossoms, bluebirds—and mysteries I'm not meant to comprehend. I then understood Mom's excitement.

It's been at least 40 years since I last visited my childhood trailing arbutus on the hillside. I hope it's still there. *Epigaea repens* of the Heath Family likes stability in its habitat. In the Delaware Piedmont where I live, I found a small patch of trailing arbutus a few years ago growing on an embankment by a little-used road. Thrilled, I revisited the site several times, but I no longer can find the plant.

My shared experiences with Mom instilled in me a lifelong interest in wildflowers and a desire to help preserve our treasure of native plants. If not for my mother, I may never have known the humble trailing arbutus. It is not a plant that seeks attention, because of its low-growing habit in out-of-the-way places. *Epigaea repens* taught me to observe the plants I see, learn their identifying characteristics and preferred habitats, and enjoy their fleeting beauty.

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pmlcrowe@gmail.com



The Nighttime Garden

by Rachel Cameron



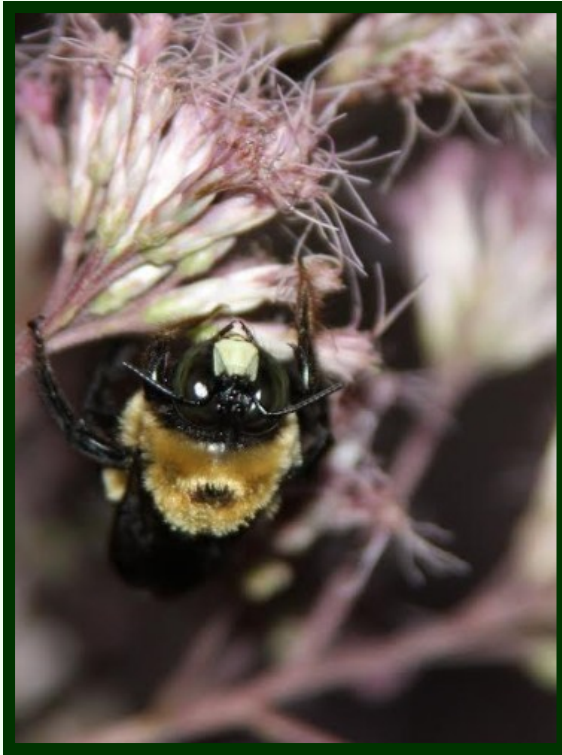
Photos courtesy of
Rachel Cameron

Angle-winged
emerald moth
(*Chloropteryx*
tepperaria)
on Joe-Pye Weed
(*Eutrochium* spp.)
in the evening
garden

Have you ever thought about what happens in your garden at night? Gardens do not go to sleep at night. As daytime animals and insects go to sleep, a whole new world awakens. We all like to see butterflies using our flowers for nectar but some moths use nectar as well. While the exact number of species of moths and butterflies are unknown, sources agree that the number of moth species greatly outnumber butterflies. Most moths are active at night. While some moths have drab colors, many can be brightly colored and have interesting shapes. Just like butterflies, their caterpillars need host plants to survive and for the species that feed on nectar the moths need our flowers too. Some of the plants that are good for daytime pollinators do not provide nighttime food like Evening Primrose (*Oenothera fruticosa*) which closes its flowers at sunset. However, some of the species that provide excellent resources during the day continue into the night such as Joe-Pye Weed (*Eutrochium* spp.) and Buttonbush (*Cephalanthus occidentalis*).

Bees have also been known to sleep on or in flowers. Spiders can also be active at night and may use flowers as hunting grounds. While spiders are generally disliked, they can be quite beautiful if one takes the time to look closely at them. Just don't touch them as some give nasty bites. Most song-

Continued on next page...



**Editor's
note:**

Purple Joe-Pye weeds in the genus *Eupatorium* have been reclassified in the genus *Eutrochium*.

Eupatorium still applies for many white-flowered species.

Visitors to the nighttime garden

Top left: bumblebee (*Bombus* spp.) on Joe-Pye Weed (*Eutrochium* spp.)

Top right:: a spider on *Clethra* spp.

Below: morning-glory plume moth (*Emmelina monodactyla*) on *Coreopsis* spp.



Continued on next page...



birds rely on spiders and insects, primarily caterpillars, for raising young. It can take thousands of caterpillars to raise a single brood. Native plants have been shown to support more species of caterpillars than introduced plants, and in turn these caterpillars allow songbird populations to thrive.

When the squirrels go to sleep other mammals such as skunks, raccoons, foxes, and opossums become active. Skunks are disliked because of their smell but they won't get into the trash like the raccoons! Skunks, raccoons, foxes and opossums are omnivores which means they eat just about anything, including plants, berries, insects, rodents and reptiles to name a few. They help keep the ecosystem in balance. Rabbits are cute, but like to eat plants and without natural predators gardens can soon be overrun. The issue with deer is similar: without natural predators the population has exploded which threatens native plants. As the quantity and biodiversity of native plants decreases, insect populations decrease. As insects decrease so do the birds. Planting native plants and protecting them from deer helps keep the ecosystem in balance.

Next time you have a chance, explore your garden after dark. See what moths are visiting your flowers. A blacklight can be used to attract moths in the area. Just don't leave it on for too long so the moths can get back to work, feeding and laying eggs. A motion activated camera is a good way to see your larger nighttime visitors. You may get lucky and find a fox visiting your garden!

Rachel Cameron 
Entomologist



A red fox
(*Vulpes vulpes*)
in the nighttime
garden



Adventures in Seed-Starting by Rick Mickowski

Over this past winter, I decided to try to germinate some native plant seeds I collected from plants in my yard. The seeds I collected were from 2 wild senna (*Senna hebecarpa*) plants (originally purchased from the DNPS native plant nursery, New York ironweed (*Vernonia noveboracensis*) seed, tall white beardtongue (*Penstemon digitalis*), some type of goldenrod (*Solidago* spp.) and coneflower (not native to Delaware). Most of them needed to have a cold treatment- a process known as stratification. It was already the middle of winter, so I sowed the seeds in small containers and placed them outside in a plastic storage container. After a few weeks, I brought them indoors and placed them under the grow lights in my basement. I had four wild senna seeds germinate, one New York ironweed, and hundreds of tall white beardtongue. The other seeds did not germinate. I am thinking I probably did not give a long enough cold treatment outside or the seed was not viable.

My other seed adventure began with someone else I met at a seed swap event held in late January at the Bellevue Community Center in north Wilmington. The person I met was staffing a display for the Delaware Nature Society and she forgot to bring in her containers of spicebush (*Lindera benzoin*)

Photos courtesy of Rick Mickowski

First: *Penstemon* seedlings

Second: *Senna hebecarpa* seedlings under grow lights

Third: *Senna hebecarpa* in flower



Continued on next page...



Photos courtesy of Rick Mickowski

Right: *Lindera benzoin*

Below:

First: *Penstemon digitalis*

Second: *Vernonia noveboracensis* planted
in a new pollinator bed



seedlings. She had sown the seeds in pots the winter of 2018-2019. She didn't see anything come up and planted tomato plants in the pots for the summer of 2019. After the tomato plants died, she discovered several of the spicebush seeds had germinated so I volunteered to take them home and baby them along.

Hopefully, I will try to start additional seeds this coming fall and winter for 2021. If you have any seed starting stories to tell, please pass them along to our newsletter editor.

Rick Mickowski 
DNPS Vice-President



That Lovely Lindera by Keelin Reilly

Christopher Columbus sailed across the Atlantic in search of gold, spices, and other riches of the Far East. He instead wound up in the New World, and left largely frustrated in his quest. Had he ventured into the forests of Delaware, he might have found an exotic “spice” after all, albeit not the valuable peppercorns and cardamom that filled the caravans of the Silk Road. Instead he would have found one of the most characteristic shrubs of Delaware forests: spicebush (*Lindera benzoin*).

As the name implies, this shrub sports aromatic leaves and stems that give off a lemony sweet, pleasant smell when bruised. This scent will remind some of the sassafras tree—both are in the Laurel plant family (*Lauraceae*). Native Americans used the leaves, twigs, and berries of spicebush to flavor food and make tea, a practice continued by later settlers. Though little commercial use exists for the plant today, numerous online resources discuss different culinary uses. I tried brewing twigs and leaves and got a mild herbal brew.

Beyond the telltale smell, spicebush can be identified by oblong, smooth-edged leaves occurring on the branch in an alternate



“A spicebush swallowtail caterpillar climbs across a spicebush branch”

Photo courtesy of Keelin Reilly

Editor’s Note:

The best excerpt for *Lindera benzoin* tea recipes and other foraging expertise can be found in “Stalking the Wild Asparagus” by Euell Gibbons.



A small cluster of winter spicebush flowers

Courtesy of delawarewildflowers.org

Continued on next page...



pattern. Spicebush are dioecious, meaning male and female flowers occur on separate plants. The most obvious manifestation of this characteristic is that only female plants produce berries, which mature bright red in the fall. Spicebush grow in a large range throughout forests of the eastern US. Indeed, the plant may now appear more common due to increased deer browsing. Deer do not like eating spicebush, meaning this plant offers abundant understory foliage in our Delaware forests. Despite deer distaste, many other woodland denizens will browse the leaves. Spicebush, along with sassafras, acts as the host plant for spicebush swallowtails (*Papilio troilus*), and its high-fat berries provide welcome food to woodland birds.

Spicebush found its way out of the forest and into gardens thanks to its many admirable traits. A medium-large shrub (6-15 feet in height), spicebush grows vigorously in a variety of conditions, though prefers moist soils in partial shade. A true jewel of the forest, spicebush provides visual interest throughout the year. After the cold of winter, its bare silvery branches offer some of the first spring flowers—bright yellow clusters reminiscent of miniature forsythia blooms. In summer it offers up lush green, fragrant foliage. Finally, the spicebush's red berries become garnets set in gold as the leaves take on brilliant yellow and golden hues in autumn, before falling away entirely.

Outside its natural life as forest denizen, spicebush fills many roles as an attractive, deer-resistant shrub. Its useable plant parts offer culinary possibilities to those with a daring palate, and it will make any yard ample ground for raising a crop of beautiful spicebush swallowtails. If you are trying to spice up your garden or other planted area, give spicebush a try!

Keelin Reilly 
Student, Johns Hopkins University

Sources cited:

https://plants.usda.gov/plantguide/pdf/pg_libe3.pdf

https://www.wildflower.org/plants/result.php?id_plant=libe3

https://www.coastalpoint.com/opinion/experts_corner/plant-of-the-week-spicebush/article_a4894476-6eb2-11ea-ac77-5b18782c3a00.html

<https://sycamorelandtrust.org/2016/11/make-spicebush-tea/>

<https://howtocookaweed.com/2017/08/08/spicebush-a-spice-for-all-seasons/>



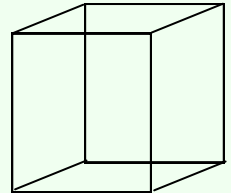
Geometric Obsession by Emma Brown

I love shapes. Shapes and patterns repeat in nature. Dendritic, branching patterns are found in the veins of leaves and as the overall structure of trees. Plant cells are often rectangular, water splashes down in concentric circles, and if you cut a mint stem in cross-section you end up with a square. Sedge stems cut cross-wise are often triangles and rushes are round. These shapes are consistent and apparent identification characteristics of plants.

It sounds weird, but I really like the aesthetic look of squares, circles, and triangles. Even more so, I like the three-dimensional versions: spheres, pyramids, and rectangular prisms. I find them- cute. You may not believe it, but I really think that the perfect shape of a box, with its smooth faces and sharp edges, is adorable. This applies to the simplicity and contentment of a perfectly square cardboard box, or the adorable wobbliness of the marine boxfish that oddly sports Delawarean colors. Though most of the shapes in nature are not truly perfect representations of the idea of the shape, anything that comes close is visually interpretable as that structure. The boxfish isn't a perfect cube, but it's close! You are probably questioning my judgment as a literary artist. Here are a few examples of what you may be thinking: "The editor is sharing her odd attraction to shapes. She mentioned a fish. Is this the right newsletter? What does this have to do with native plants?"

Seedbox. I found seedbox.

In Newark, Delaware along a small stream in suburbia a lone candelabra of dry seed capsules cried out, "Observe me! I am unique and special and filled with little seeds. My capsules are cubic!" I had no idea what the flower looked like, but felt



A *Mentha* stem showing the mint family characteristic of four-sided stems
Photo by Emma Brown



My drawing of a boxfish based on stock photo sources

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My *Ludwigia*. The one plant had three or four branches of capsules. I collected this portion to discover more about the plant and to learn to propagate the seeds.



A closer image of seedbox capsules
Photo courtesy of delawarewildflowers.org

compelled to find out what it was.

Upon learning the identity of *Ludwigia alternifolia*, the square-pod water-primrose or bushy seedbox, my delight has not subsided. It so happens that each flower has four yellow petals and four anthers, the calyx below consists of four sepals, and the ovaries- the fruiting structures- ripen with four walls bulging only just, and a nice little cap with four precise corners that tie the architecture together to resemble a cube. It certainly is dedicated to staying in shape!

A circular opening in the center of the cap provides egress for the seeds, and makes this operculum structure look very much like a Cheez-it® cracker on its own. The seeds are miniscule- they resemble tiny sesame seeds in their tan color and pointed elliptical outline. There are about 17 seeds per capsule in the sample of six capsules I observed, and each viable seed is approximately a quarter of a millimeter wide by half a millimeter long. This *Ludwigia* is summer-flowering with flowers in the leaf axils. Leaves are entire, and alternate, hence the specific epithet "*alternifolia*." Once the capsules dry, they are long-lasting and remain through the winter into the following year, confusing observers and drawing excitement and endearment as beautiful pieces of art in nature.

Emma Brown 
DNPS Editor

To submit an article, write to: erbrown@udel.edu



Summer Activi-trees

Visit Delaware State Parks in-person, gardens through virtual tours, and attend workshops from a safe social distance while maintaining a passion for native plants!

- [Delaware State Parks](#) - Explore safely and enjoy the fresh air!
- [Delaware Botanic Gardens](#) - Explore the virtual gardens and see what's in bloom at
- [Nemours Estate](#) - A beautiful garden to keep on your list of places to visit as locations reopen
- Pinelands [Podcasts](#)- tune in to this nearby New Jersey nursery's wisdom!
- [Winterthur Museum, Garden & Library](#)'s website has provided a set of at-home activities for young ones, and is slowly reopening its gardens this summer. Find out more at:
- 10AM-12PM, June 27, 2020
DNPS Garden [Volunteer Day](#) - Come help the DNPS tend our native plant garden!
University of Delaware Lewes Campus, 700 Pilottown Rd, Lewes, DE 19957
- 4PM, July 12, 2020
[Women in Horticulture of the Delaware Valley](#) are hosting a virtual event! Discover more at

MT. CUBA CENTER -Always providing our native plant fix!

- [Virtually tour Mt. Cuba Center](#) this summer! The spectacular online tour series makes you feel as if you are there, moving through the landscape.
- Attend [online trainings and workshops](#) in native plants on their GoToTraining platform
- [Visit](#) in-person: The gardens are carefully opening back up to the public starting June 17th!
- The DNPS will welcome a speaker from Mt. Cuba Center on October 3rd, 2020
"Knockout Natives".
"Join Sam Hoadley, the Manager of Horticultural Research at Mt. Cuba Center, as he highlights knockout native species and cultivars from our trials. Top performers and favorites of *Coreopsis*, *Baptisia*, *Monarda*, *Phlox*, and *Helenium* represent some of the best native plants for the mid-Atlantic region. Sam will discuss their horticultural and ecological performance and will share important information on varieties that will make beautiful additions to your garden."
Stay tuned for more information.



Check out these publications!

- The DNPS has produced “Delaware Native Plants for Landscaping and Restoration.” It’s an excellent identification tool for anyone looking to use and learn about Delaware native plants.
[Order a booklet or view samples](#) online
- “A New Garden Ethic: Cultivating Defiant Compassion for an Uncertain Future” by Benjamin Vogt discusses the human identity and impact as part of the greater ecosystem, presented through the lens of a connection with native plants and all of nature.
Read an excerpt [here](#)
- Carol Gracie, author of “Spring Wildflowers of the Northeast” has produced “[Summer Wildflowers of The Northeast: A Natural History](#)” that introduces readers to our region’s native plants through beautiful imagery as well as detailed descriptions of the plants and the ecosystem services they provide.
- Check out [more resources](#) on native plants and their pollinators

Recommendations provided by Rick Mickowski, DNPS VP

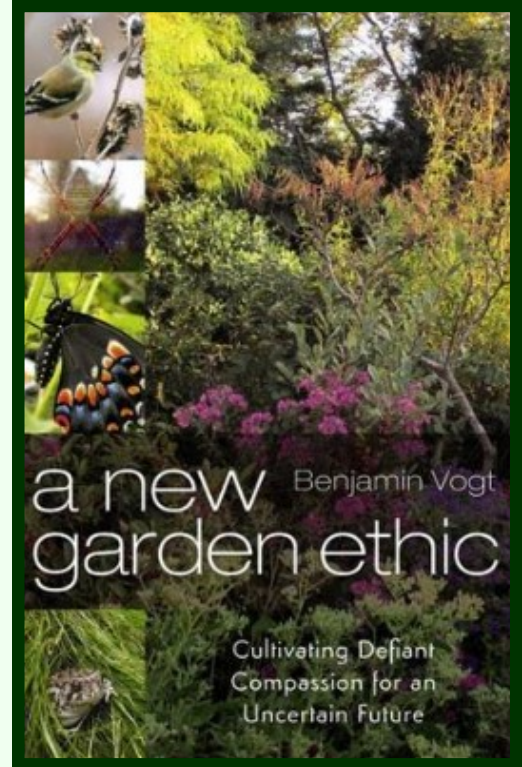


Image source: American Horticultural Society’s “The American Gardener” Magazine

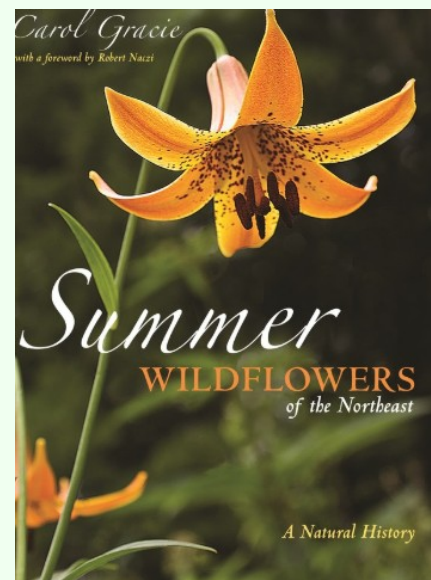
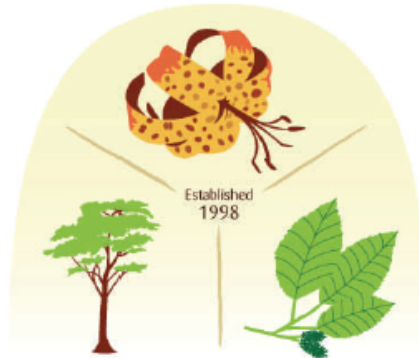


Image source: Princeton University Press





MEMBERSHIP APPLICATION



DELAWARE
Native Plant Society

Membership is for 12-months, after which we send you a renewal notice.

☐ Full-time Student \$10.00

☐ Individual \$15.00

☐ Family \$18.00

☐ Contributing \$50.00

☐ Business \$100.00

☐ Lifetime \$500.00

Donations are also welcome _____

Membership benefits include:

-  Our quarterly newsletter-*The Turk's Cap*, and website resources
-  Tips and tricks on gardening and landscaping with native plants
-  Annual workshop, symposium, and project work days

Member Information

Name: _____

Organization: _____

Full Mailing Address: _____

Phone Number: _____

Email: _____

Please make checks payable to:
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P.O. Box 369
Dover, DE 19903

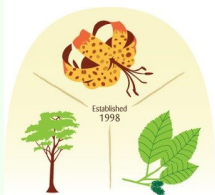
Photography Index

On Page 1 from top to bottom:

- *Coreopsis lanceolata* - lance-leaf coreopsis
- *Lupinus perennis* - purple lupine
- *Pycnanthemum tenuifolium*- slender mountain-mint
- *Monarda didyma*- beebalm
- *Eutrochium fistulosum*- hollow stem Joe-Pye weed
- *Vernonia noveboracensis*- New York ironweed

- *Trifolium arvense*- rabbit's foot clover
- *Ludwigia alternifolia*- bushy seedbox
- *Chelone glabra*-turtlehead
- *Lilium superbum*- Turk's cap lily

Photographs courtesy of David G. Smith at
www.delawarewildflowers.org



The Turk's Cap

Volume 23, Number 3

Autumn 2020

The Newsletter of the Delaware Native Plant Society



Letter from the President
by Eric Wahl



DNPS Volunteer Days
by Eric Zuelke



The Genus *Solidago* in Delaware
by Bill McAvoy



Don't Hog the Peanuts
by Nicholas Johnson



The Buzz at Brandywine Creek State Park
by Keelin Reilly



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President:
Eric Wahl
Vice-President:
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DNPS Mission Statement:

Founded in March 1998, we are a volunteer-based, publicly supported non-profit organization dedicated to the conservation of native plants and their natural habitats through education, science, advocacy, and land stewardship.

Discover more at: <https://delawarenativeplants.org>



Letter from the President

What a crazy year it has been. We hope everyone is tending to their gardens as well as themselves during these trying times. The pandemic has forced all of us to change our ways and adapt to the new environment just like our native plants and wildlife have adapted to their own regions over these millennia.

One of the ways the DNPS is adapting is beginning to go virtual with our events. You should have received an email within the last few weeks announcing our Fall Symposium scheduled for October 3rd. This will be our first virtual event. Our guest speaker is Sam Hoadley from the Mt. Cuba Center. He is the Horticultural Research Manager there, and his work includes evaluating native plant species and their cultivars.

Stay tuned for more virtual events as the months roll by. In addition to our events, DNPS has been having successful volunteer days with the native plant demonstration garden in Lewes. We will be having additional volunteer days for this garden as well as other others throughout the state. Keep a lookout for our emails that go out to all the membership.

Stay safe and keep promoting native plants! 🌱

Article courtesy of Eric Wahl, DNPS President

Sign up to attend our fall symposium [here](#)

Connect with the DNPS on [Facebook](#)

Or find us at:

<https://delawarenativeplants.org/>



DNPS Volunteer Days

We had a volunteer day on Saturday, September 12, 2020 at the University of Delaware Native Plant Garden site. The weather was perfect, and our small crowd got a lot done. We outlined the boundaries of the new wet meadow with stakes and coir rope and "Native Wildflower Habitat" No-Mow Signs. The wet meadow is a turnkey feature of the native plant garden because it lies directly under the nearby building where drainage from an HVAC unit and gutters cause the area of lawn under the downspout to be perpetually wet. The groundskeeping staff has quite a bit of difficulty mowing that area, so when we gave our proposal to the University to take advantage of this ready-made habitat, they were immediately on board. After we laid out the footprint of this new area of the garden, we planted the first plants of many: 5 each of *Iris versicolor* and *Conoclinium coelestinum*. There will be many more to come.

We then turned our attention to the continued creation of the dry pollinator garden. You may recall that in November 2019 we did a large scale seeding of that section of the garden. Through Spring 2020 we had

Photo of the newly-planted area during the September workday courtesy of Eric Zuelke



Continued on next page...



**DNPS Workday Photos from the summer workday
courtesy of Rick Mickowski**



Continued on next page...



**DNPS Workday Photos from the summer workday
courtesy of Rick Mickowski**

**“We weeded the path, pruned dead limbs out of shrubs, and removed
some of the dead plant stalks” - we are left with one beautiful garden!**



Continued on next page...



moderate germination, heat and lack of rain were a real problem and many of the seedlings didn't make it. We learned our lessons and have changed up our approach a bit to fight the extreme exposure this part of the garden endures. One of the tactics is to supplement the hand-sown seed with live, containerized plants. So with that in mind, we completed the planting of 40 plants of eight species in the southern one-quarter of the pollinator garden. Another tactic we plan on implementing is just simply visiting the site more often and watering. We were hoping that mother nature would do the watering for us, but we found out that we can't rely on that. Fortunately we just discovered that we have the means to water whenever we need to on the site, so that will help. We will also be doing a duplication of the seeding we did last year in the coming months which will help to bolster the seed bank in the soil.

All this recent work we've been doing at this UD site in Lewes has been partially funded by a mini-grant that the DNPS applied for and subsequently received. The grant money was provided by the First State Resource Conservation and Development Council, Inc.-USDA-NRCS Cooperative Agreement (2017-2020) for Pollinator Habitat Projects. We received \$1200.00 in grant money which helped us purchase live plants, seed, and materials. Your membership dues and donations were also used to help with these purchases. We would like to thank all of you for supporting these endeavors. If you visit the garden, you will see that the site is growing and growing and we hope it will continue that way for years to come.

If you would like to know more about the history of this site, please visit our website at www.delawarenativeplants.org and read the history report we have posted in the Projects page.

Article courtesy of Eric Zuelke, DNPS Treasurer 🌱



The Genus *Solidago* in Delaware



Solidago juncea

Goldenrod photos courtesy of Bill McAvoy

Now that the goldenrods are blooming, or just coming into bloom, this would be a good time to discuss the genus and its representative species and varieties here in Delaware.

The goldenrods, genus *Solidago*, are in the Asteraceae, the Aster Family. Worldwide, there are about 100 species and varieties (**taxa**). North America supports the greatest number of taxa with 77. Here in Delaware, there are 25 taxa, representing 32% of the North American diversity of the genus.

Goldenrods typically bloom in late summer into late fall. The earliest blooming goldenrod in Delaware is *Solidago juncea* (early goldenrod), which starts blooming in July. All goldenrods are perennial and herbaceous and grow from underground rhizomes. All species and varieties of goldenrods in Delaware have yellow flowers, except for *S. bicolor*, the white goldenrod. The flowers of goldenrods are an important nectar source for numerous moth and butterfly species. Goldenrods are found in a variety of habitat types, such as upland meadows, woodlands, coastal dunes, and wetlands.

The generic name for goldenrods, *Solidago* comes from the Latin word to “heal”, or to “make whole”. *Solidago odora* (sweet goldenrod) is the state herb of Delaware. The leaves can be used for making tea and beer, and are also used in cooking.

Continued on next page...



Solidago erecta



Solidago caesia

Solidago bicolor



Solidago fistulosa



Continued on next page...



Solidago odora



Solidago flexicaulis



Continued on next page...



All of Delaware's goldenrods are indigenous to the state, and many are common and widespread in both the Piedmont and Coastal Plain provinces, such as *S. rugosa* (thin hairy rough-leaf goldenrod) and *S. altissima* (rough Canada goldenrod). But there are several (8 taxa) that are rare and uncommon, and 3 that are historical, meaning that they have not been reported in the state for more than 20 years.

Below is a list of all the goldenrods in Delaware which indicates the state status of each:

Scientific Name	Common Name	State Status
<i>Solidago altissima</i> var. <i>altissima</i>	rough Canada goldenrod	Common
<i>Solidago arguta</i> var. <i>arguta</i>	cutleaf goldenrod	Rare
<i>Solidago latissimifolia</i>	Elliott's goldenrod	Rare
<i>Solidago tarda</i>	late goldenrod	Rare
<i>Solidago ulmifolia</i> var. <i>ulmifolia</i>	elm-leaf goldenrod	Rare
<i>Solidago patula</i> var. <i>patula</i>	roundleaf goldenrod	Uncommon
<i>Solidago bicolor</i>	white goldenrod	Common
<i>Solidago caesia</i> var. <i>caesia</i>	bluestem goldenrod	Common
<i>Solidago canadensis</i> var. <i>canadensis</i>	Canada goldenrod	Common
<i>Solidago erecta</i>	slender goldenrod	Common
<i>Solidago fistulosa</i>	pine barren goldenrod	Common
<i>Solidago flexicaulis</i>	broadleaf goldenrod	Common
<i>Solidago gigantea</i>	smooth goldenrod	Common
<i>Solidago juncea</i>	early goldenrod	Common
<i>Solidago nemoralis</i> var. <i>nemoralis</i>	gray goldenrod	Common
<i>Solidago puberula</i>	downy goldenrod	Common
<i>Solidago rugosa</i> var. <i>aspera</i>	thick rough-leaf goldenrod	Common
<i>Solidago odora</i>	sweet goldenrod	Common
<i>Solidago rugosa</i> var. <i>rugosa</i>	thin hairy rough-leaf goldenrod	Common
<i>Solidago sempervirens</i>	seaside goldenrod	Common
<i>Solidago uliginosa</i>	bog goldenrod	Historical
<i>Solidago hispida</i>	hairy goldenrod	Status Uncertain
<i>Solidago mexicana</i>	small-headed seaside goldenrod	Status Uncertain
<i>Solidago squarrosa</i>	squarrose goldenrod	Historical
<i>Solidago stricta</i>	wandlike goldenrod	Historical

Article courtesy of Bill McAvoy, State Botanist 



Don't Hog the Peanuts



Hog peanut (*Amphicarpaea bracteata*) courtesy of delawarewildflowers.org

As a boy and presently as a young man I have always been fond of wild foods, but have often lacked the wherewithal to forage other than in the local wineberry patch and in the NJ pine barrens. My love of native plants and native edible plants probably originated after reading “My Side of the Mountain” by Jean George. It is a wholesome and fictional tale of a city boy's foray into the Catskill mountains of New York state, specifically the small hamlet of Delhi. The boy, Sam Gribbley, eats violets, acorns, dog tooth violets, and he hunts for rabbits with his falcon “Frightful” and altogether lives a pristine life outside the tiny town of Delhi. It became my favorite book. I have read it a few times every year almost every year since. Inspired, I pursued a degree and a masters degree in Plant Science. The rigamarole of higher education at the University of Delaware: electron microscopy, microbiology, and molecular biology, is a far shot away from rummaging for plants in the deciduous and pine woods of my childhood home in South Jersey. Despite my work as a laboratory scientist I still love to rummage, and while looking for interesting and edible plants I always learn something about the native lands around us.

Continued on next page...



Editor's photo: *Amphicarpaea bracteata*, White Clay Creek State Park, DE

Vines crawling across adjacent plants, outward and upward

The American hog peanut, *Amphicarpaea bracteata*, is in the family Fabaceae. "Hog peanut" is a food source for many animals including the wild hogs its named after, and Native American tribes introduced this plant to early European colonists as well. Like most legumes *Amphicarpaea* is able to fix its own nitrogen from atmospheric N₂ (nitrogen) and sugar, using a symbiotic relationship with root-nodulating bacteria of the genus *Rhizobia*. Although edible, the "peanuts" are small and difficult to find - once new shoots emerge the seed is consumed by the emerging seedling for nutrients. Prior to this time the seeds can be picked out and eaten like a very small potato, which is also what they taste like. Although having an occasional taste is ok, I do not recommend digging up a whole family of seedlings for a meal. This small fruit is best left for wildlife.

When foraging for plants always make sure to identify the plants with certainty before touching them, as *Amphicarpaea* is similar in shape to young poison ivy as well as other inedible plants, and often occupies the same densely packed habitat. As a result the vines can be difficult to tell apart in early summer.

The Lady Bird Johnson Wildflower Center and Illinois Wildflowers have a lot to say about this particular *Amphicarpaea*. To paraphrase: it is a relatively common plant, found vining around other plants or growing **prostrate** (low-growing) on the moist soil of stream banks in Delaware. Along the stem are borne **alternate** (one leaf per each stem node) **trifoliate** (three leaflets per leaf) leaves with slightly **rhombic** (diamond-shaped) leaflets. Leaves possess smooth margins and hairy undersides that grow from a slender **petiole** (the stem of the leaf) 2-6 inches long. A pair of **stipules** or rudimentary leaves may be present at the base of the petiole and the leaves do not have a waxy or oily appearance like that of poison ivy. *Amphicarpaea* will produce flowers in two distinct forms. One type is **apetalous** (without petals) with self fertile

Continued on next page...



Editor's photos:

The twining vine
and above-
ground flowers
and fruit
(inedible pods).



The
underground
hog peanut
structure and
attached roots



flowers that form the “peanut.” These subterranean fruits end up producing seeds that can be eaten in the spring after careful identification. A second flower forms **racemose inflorescences** (multiple flowers on short stalks attaching to a vertical stem) along the upper stem which have purple or lilac colored petals. These produce an inedible **legume** (pod that splits along two lines when ripe) aboveground that is **dehiscent** (opens to disperse seeds) once mature, thus spreading seed considerably farther away than the fruit produced by the self-fertile flowers on the lower stem. If you're curious to find out more, check out the resources below on *Amphicarpaea bracteata*:

[Lady Bird Johnson Wildflower Center](#)

[Illinois Wildflowers Info](#)

Article courtesy of Nicholas Johnson, Botanist 🌱



The Buzz at Brandywine Creek State Park

Pycnanthemum incanum at Brandywine
Creek State Park
Photo courtesy of Keelin Reilly

“Durable, not invasive like other mints,
long-blooming, and
constantly swarming with
pollinators.”

See more photos from the garden [here](#)



During Summer 2020, I worked for the Delaware State Parks as a seasonal naturalist in Brandywine Creek State Park, a lovely piece of parkland straddling the Brandywine waterway outside of Wilmington and near the border with Pennsylvania. As a park naturalist, I developed and conducted interpretive programs to increase the public’s awareness of their surrounding environment and foster the appreciation, enjoyment and utilization of the parks. I loved introducing visitors to some of Brandywine Creek’s loveliest native plants, including the nearly 200-year-old tulip poplars (*Liriodendron tulipifera*) in Tulip Tree Woods and many redolent spicebushes (*Lindera benzoin*).

One of my favorite tours led visitors through the park’s pollinator garden, outside of the Nature Center. The large number of native flowering perennials in this area include hoary mountain mint (*Pycnanthemum incanum*), wild bergamot (*Monarda fistulosa*), rattlesnake master (*Eryngium yuccifolium*), butterflyweed (*Asclepias tuberosa*), goldenrod (*Solidago spp.*), and more. All of these flowers attract a staggering number of invertebrates. We have spotted red admirals, tiger and spicebush swallowtail butterflies, monarchs, and most species of native bees like the endangered rusty-patched bumblebee, carpenter bees, sweat bees, and others. There is also a tremendous diversity of wasps, beetles, dragonflies, and moths. For anyone interested in getting the most pollinator bang for the buck, I recommend hoary mountain mint—

Continued on next page...



durable, not invasive like other mints, long-blooming, and constantly swarming with pollinators.

I remember fondly one tour of the garden that included a young girl in the group, who eagerly reached for the different leaves I suggested to crush and smell, enjoying the aroma of mint and bergamot. When I identified milkweed (host plant of monarch butterflies) she took charge and breathlessly explained how monarchs laid eggs and grew into butterflies on that plant before undertaking a massive migration. While she learned these facts from a TV show, I could show her these creatures in real life. It was an energizing and inspiring moment. Pollinator gardens help people connect with nature in new and exciting ways, while demonstrating the benefits of gardening with native plants. The Brandywine Creek pollinator garden was designed by Don Coats as part of his “Lawn to Life” project and installed by Friends of Brandywine Creek State Park, staff, and other volunteers. Be sure to visit the next time you’re in the area!

My biggest takeaway from the summer was the importance of the parks system. The Delaware State Park system maintains 17 parks, more than 26,000 acres, preserving open space and natural habitat. Brandywine Creek preserves a particularly beautiful landscape. Without the park, the historical meadows and forest ecosystems would likely no longer exist due to high land demand from residential developments. In the midst of the coronavirus pandemic, parks provide ample opportunities for safe, outdoor, socially distant recreation. The mission of Delaware State Parks reads: “To provide Delaware's residents and visitors with safe and enjoyable recreational opportunities and open spaces, responsible stewardship of the lands and the cultural and natural resources that we have been entrusted to protect and manage, and resource-based interpretive and educational services.” I believe they fulfill this mission very well, and was very glad I could contribute, in a small way, this summer.

Visit Keelin’s [Delaware State Parks Adventure Blog](#)
Visit [Brandywine Creek State Park](#) and learn more about its
Old Growth Forest- [Tulip Tree Woods!](#)

Article Courtesy of Keelin Reilly, Student, Johns Hopkins University 



Autumn Activities

Visit Delaware State Parks in-person, gardens through virtual tours, and attend workshops from a safe social distance while maintaining a passion for native plants!

September

- **Sep 25** Delaware Botanic Gardens - [Virtual Fundraising Dinner Party](#)
- **Sep 26** Mt. Cuba Center- [“Tree Spree”](#) in the gardens
- **Sep 29** Jersey Yards Webinar- [How and When to Clean up the Winter Wildlife Garden](#)

October

- **Oct 1** Xerces Society- [Building Pollinator Habitat](#) Northeast/Mid-Atlantic Region *Online*
- **Oct 3** DNPS Fall Symposium- [“Knockout Natives”](#). *Virtual Symposium 10AM*
We welcome Sam Hoadley, the Manager of Horticultural Research at Mt. Cuba Center, as he highlights knockout native species and cultivars from our trials. Top performers and favorites of *Coreopsis*, *Baptisia*, *Monarda*, *Phlox*, and *Helenium* represent some of the best native plants for the mid-Atlantic region. Sam will discuss their horticultural and ecological performance and will share important information on varieties that will make beautiful additions to your garden.
- **Oct 7** The American Chestnut Foundation, MD Chapter [Fall Meeting](#) *Online 7PM*
- **Oct 10** Mt. Cuba Center- [Fall Gardening Saturday](#) *Online*
- **Oct 15** Mt. Cuba Center- [Organic Landscape Management](#) *Online*
- **Oct 27** Longwood- [Plant Science: Understanding Plants](#) *Online Continuing Education Course*

And Beyond!

- **Dec 12** Mt. Cuba Center- [The Language of Flowers: Pollination Ecology for Gardeners](#) *Online*
- **Jan 16** Mt. Cuba Center- [Old Growth Forest Network: Forests and Flowers](#) **11AM**
- **Feb 21** Brookside Gardens- [Green Matters Symposium: Practical Solutions for Ecologically Sustainable Landscapes](#) *Online*





Help out with pollinator counts!

Butterfly Survey Counting Form

INSTRUCTIONS: Choose a type or cluster of blooms, 1 to several yards diam., that you can observe without moving around, and for 5 minutes, count all the different butterflies (type and number of each) that land or nearly land. Try not to count the same individual twice.

TIPS FOR IDENTIFYING BUTTERFLIES:

- Butterflies are wary (of predation) so don't get too close.
- There are some day-flying moths, exclude them: butterflies have smooth antennae with knobs on the ends; moths have feathery antennae without knobs.

WEATHER CONDITIONS: count May 1 to Oct 1, mostly sunny, >55 degrees and not too windy, and between 10 AM and 4 PM

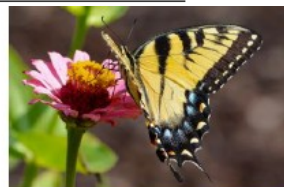
SEND COUNTS TO: doncoats@verizon.net

Date _____ Site (if park, specify area) _____

Plant Type _____ Observer's Name(s) _____

Swallowtails - Large sized (3 inches wingspan), have tail tips (unless a bird removed them)

TOTAL _____



Whites and Sulfurs - Medium sized (from 1 to 2 1/2 inches), either mostly white or mostly yellow to orange

TOTAL _____



Gossamer-wings - Small sized (from 1 to 1 1/2 inches), not mostly white or yellow, slender-bodied, gentle-flying

TOTAL _____



Skippers - Small sized (from 3/4 to 2 inches), heavy-bodied, fast-flying

TOTAL _____



Brushfoots - Everything else, usually showing a lot of orange or black, only four legs visible,

Total _____



Monarchs total _____

Continued on next page...



Help out with pollinator counts!

NATIVE BEE SURVEY COUNTING FORM

Perform counts when weather is calm, mostly sunny, April to October

PLAN: select a bloom cluster, 3 ft. or less in diam. Count bees that actually land on it (forage)- and record below

Note: Most bees have hairy bodies, plumpish often w pollen on them; while wasps are larger with narrow bodies.

Hover flies look very much like bees, variable size, forage less, hover a lot, may also appear to rest on a leaf.

Date _____ Observation site _____ Bloom name (s) _____

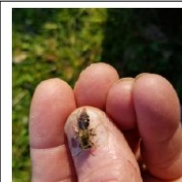
Observer(s) name _____ SEND COUNTS TO - doncoats@verizon.net

Honey Bee – brown w black stripes, not native, a managed bee, a stock animal

Count ____/____

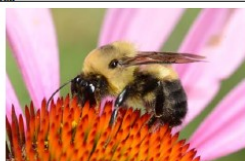


Brown bees, ground nesters, common in spring in suburban yards Count ____/____



Bumble Bee – pale yellow
Common, fuzzy abdomen
Smaller than carpenter
But variable in size

Count ____/____



Small dark bees, many
Are small Carpenter bees.

Count ____/____



Carpenter Bee – larger than Bumble Bee and hairless abdomen, not a common forager

Count ____/____



Tiny, nearly gnat size,
Often complete with pollen in leg baskets

Count ____/____



Blue or green metallic bee - orchard bees ↓ common in some locations Count (both colors) ____/____



Red or red abdomen
Small and hairless,
Are parasitic, replace other bees egg on a Pollen ball with their own.

Count ____/____



Hover flies ____/____

Beetles, ants and other ____/____

HABITAT FEATURES

Circle the weather conditions for this counting visit – Ideal good marginal

(ideal – warm, above 60, mostly sunny, minimal wind, no rain in past 24 hrs.)

What is the purpose of this site? _____

Estimated size of this site _____

Are other forage friendly blooms present now or during other phases of the warm season ? _____

If so, please list three or four (native or non-native) _____

Is there a water source near – 100 feet or so? _____





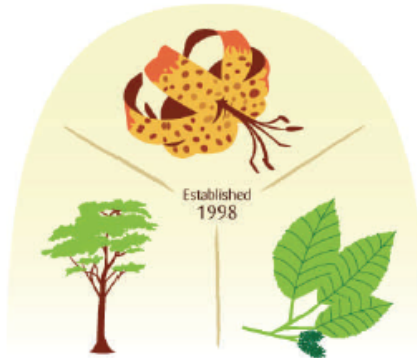
Education & Action

- The DNPS has produced “Delaware Native Plants for Landscaping and Restoration.” It’s an excellent identification tool for anyone looking to use and learn about Delaware native plants. [Order a booklet or view samples](#) online
- The Delaware Nature Society has an excellent web page on [Gardening for Water and Wildlife](#) with downloadable PDFs, videos, and other great resources!
- Water quality in the Delaware River Watershed and nearby watersheds has a direct impact on the health of your garden and the wildlife it can support. This detailed [infographic](#) provides tips and practical solutions to improve water quality.
- New Jersey’s Pinelands Nursery has produced an excellent podcast series. Tune in to [Native Plants Healthy Planet!](#)
- Podcasts, you say? Here’s another, based out of Pennsylvania and serving the region’s interest in native plants: [Plant a Trillion Trees](#) Podcast
- [Philaflora Native Plant Nursery](#)- landscape plants for retail and wholesale
- The DNPS Newsletter is striving to increase our readership and writership. Know anyone who would like to submit an article about native plants of Delaware in Spanish? In English? Reach out to erbrown@udel.edu to submit articles!





MEMBERSHIP APPLICATION



DELAWARE
Native Plant Society

Membership is for 12-months, after which we send you a renewal notice.

- ☐ Full-time Student \$10.00
- ☐ Individual \$15.00
- ☐ Family \$18.00
- ☐ Contributing \$50.00
- ☐ Business \$100.00
- ☐ Lifetime \$500.00

Donations are also welcome _____

Membership benefits include:

-  Our quarterly newsletter-*The Turk's Cap*, and website resources
-  Tips and tricks on gardening and landscaping with native plants
-  Annual workshop, symposium, and project work days

Member Information

Name: _____

Organization: _____

Full Mailing Address: _____

Phone Number: _____

Email: _____

Please make checks payable to:
Delaware Native Plant Society
P.O. Box 369
Dover, DE 19903

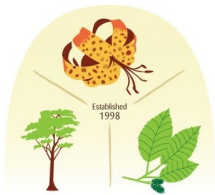
Photography Index

On Page 1 from top to bottom:

- *Cirsium muticum* - swamp thistle
- *Bidens cernua* - nodding tickseed
- *Solidago juncea*- flaxleaf aster
- *Heterotheca subaxillaris*- camphorweed goldenaster
- *Chasmanthium latifolium*- broad spikegrass
- *Lilium superbum*- Turk's cap lily

Photographs courtesy of David G. Smith at

www.delawarewildflowers.org



The Turk's Cap

Volume 23, Number 4

Winter 2020-21

The Newsletter of the Delaware Native Plant Society



Letter from the President
by Eric Wahl, DNPS President



Mission Accomplished: A Year-End Summary of
Habitat Improvement Activities
by Eric Zuelke, DNPS Treasurer



Wintergreen Ferns
by Bill McAvoy, DE State Botanist



Finding A Wintergreen Orchid
by Pamela Crowe, recent MCC Orchid Scout



A Grim Milestone: What Monarch Declines Say
about America's Ecosystems
by Keelin Reilly, JHU student & recent summer naturalist



Seed Propagation for Home: Part I
by Shelby French, MCC Propagation Manager



Taupe Treasures
by Emma Brown, DNPS Treasurer



Plant Quiz, Membership, and More!

DNPS Officers

President:
Eric Wahl
Vice-President:
Rick Mickowski
Treasurer:
Eric Zuelke
Secretary:
Alison Long

DNPS Mission Statement:

Founded in March 1998, we are a volunteer-based, publicly supported, non-profit organization dedicated to the use, propagation, promotion, and conservation of native plants and their natural habitats through education, science, advocacy, and land stewardship. Discover more at: <https://delawarenativeplants.org> 



Letter From The President

Happy New Year to our members and their families. 2020 has exited and a new cycle has begun. I'm looking forward to better tomorrows and leaving the chaos behind.

However, if it's one thing that catapulted us into the 21st century, it's the innovative and creative ways we overcome difficulties. Even the DNPS took small steps to maintain a sense of normalcy by utilizing Zoom conferencing for our annual Fall Symposium on October 3rd. A few glitches occurred in the beginning, but a successful meeting was had. This format will most likely make another appearance in the future.

Thankfully, outdoor activities are still a safer exercise, and we persevered with additional volunteer days over summer and fall. You'll see descriptions in this issue. In addition, expect more activities throughout the state as our Treasurer and Project Manager, Eric Zuelke, promotes and spreads our mission this coming year. Keep an eye out for email invites and the calendar in our newsletter.

We are truly thankful for our members and your dedication to the DNPS. We could not be successful without you and your enthusiasm in spreading the word about the importance of native plants. 🌱

Sincerely, Eric W. Wahl, President

Connect with the DNPS on [Facebook](#)

Or find us at:

<https://delawarenativeplants.org/>



Mission Accomplished: A Year-End Summary of Habitat Improvement Activities

If anyone has carefully read our mission statement it says that "we are dedicated to the use, propagation, and conservation of native plants and native plants habitats." We made great strides towards fulfilling that mission this year. This year's three project sites at the University of Delaware native plant garden, Prime Hook Wildlife Area, and Woodland Beach Wildlife Area all saw a tremendous amount of improvement and growth. Here's what we accomplished:

University of Delaware Native Plant Garden

We have been working at this site for several years now, but this year we worked hard to expand the amount of habitat. One thing that really helped us achieve this was securing \$1,200 in grant funding from the First State RCD NRCS Pollinator Habitat Project Grant. This money helped us to purchase containerized plants, and additional seed to supplement the seeding that was completed in November 2019. See the overall history report we have posted on our website for more details. The garden is resting for the moment, but we will resume activity in the spring of 2021 when we will do management activities to ensure the survival of the planted individuals and manage for the survival of seedlings that germinate.

Prime Hook Wildlife Area

This was the site of our first ever reforestation project in October 2000. To celebrate its 20th anniversary we again teamed up with the Division of Fish and Wildlife to revisit the site to do further vegetation management activities. We quickly discovered that the site had a notable amount of plant diversity, but was also overrun with sweetgum. We devised a management strategy and got to work. The first goal was to open up many of the oak trees and get rid of sweetgum, so Eric Zuelke and Rob Gano (Regional Wildlife Manager for Sussex County) dove into the site with chainsaws and cut down approximately 400 to 500 sweetgum and girdled over 20 loblolly pine to open up oak trees, but also to provide some

Continued on next page...



Quercus falcata -
Southern red oak

Photo courtesy of
Emma Brown

additional wildlife snag habitat. The second goal involved planting additional oak trees and hickories in areas that were purely sweetgum dominated. Eric Zuelke teamed up with former DNPS Vice-President Rick McCorkle to hand dig oak and hickory trees out of his forested property in Kent County, Delaware and transplant them into the PHWA site.

We planted the following...

16 unidentified oaks (pretty sure they were *Quercus falcata*, but not 100% positive)

7 *Quercus phellos*

6 *Carya* spp.

This site is also taking a well-deserved winter rest, but in the spring of 2021 will start visiting it again to ensure the survival of the newly planted trees.

Woodland Beach Wildlife Area

To further our mission of creating new wildlife habitat, we tackled another brand new reforestation project this year. We once again teamed up with the Delaware Division of Fish and Wildlife to turn a portion of a fallow field into a future forest. Eric Zuelke got the wheels rolling on this project by contacting Bill Jones, now retired Kent County Regional Wildlife Area Manager to identify a suitable location for this project. The 1.28 acre field at

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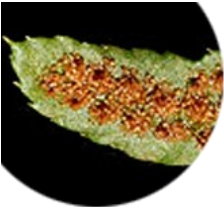


Woodland Beach was the winner. After Mr. Jones retired, Eric began working with Dylan Nicholson, his successor, to identify the boundaries, put up signage, and prepare the site for planting. The original plan was to direct seed this site with acorns and hickory nuts as we had done at all of our past reforestation sites, but Mother Nature had other plans. Acorn and hickory nut production in 2020 was very low because of a dry, hot spring and we could not locate acorns anywhere. Fortunately, we had a contingency plan already in place in the form of \$1,000 of grant money that we received from the Sustainable Communities Grant Program presented by Delmarva Power and administered by the Delaware Nature Society. This money was used to buy containerized plants to supplement the direct seeding that we originally intended, but ultimately became the primary source of planting for this year. Additionally, as a result of an email announcement out to the general membership, we were able to obtain plants from another DNPS member, and Rick McCorkle picked up a shovel once again and dug up some more trees and shrubs from his forested property and donated them to the cause.

It was a very productive year overall, and we would like to thank the five volunteers who helped out at the UD native plant garden, and the two volunteers who helped out at Woodland Beach Wildlife Area. Starting in the spring of 2021, we will be doing quite a bit of vegetation management, monitoring, and maintenance at all three sites, but especially at the UD plant garden where we will be doing quite a bit more planting of containerized wildflowers as we expand both the dry pollinator garden and the wet meadow habitat.

If you would like more information on these sites, and others, please visit the "Projects" page of our website. We have posted continually updated, and very detailed, history reports of these sites. 🌱

Article courtesy of Eric Zuelke, DNPS Treasurer, Project Manager



Wintergreen Ferns

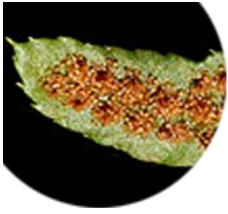
Now that the growing season is behind us and we're deep into winter, wintergreen plants are much more noticeable as you walk the forest trails. In contrast to evergreen plants that have persistent green leaves for two or more growing seasons, the leaves of wintergreen plants are persistent for one growing season, as well as through the winter and are replaced in late spring of the next year. Good examples of wintergreen plants can be found in our native ferns, such as Christmas fern (*Polystichum acrostichoides*) and the wood-ferns (species *Dryopteris*). The list below includes all the wintergreen ferns known to be **extant** in Delaware. A brief habitat description is provided that might help you locate some of these species.



Editor's note:
An "extant" species
is one that is alive
and present in
an area today

Sceptridium dissectum, cutleaf grapefern. Two forms of the species shown in image: plant on the left is forma *dissectum* with skeletonized leaflets cut into linear teeth, and the plant on the right is forma *obliquum* with much less dissection and round-lobed leaflets.

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Polystichum acrostichoides- Christmas fern



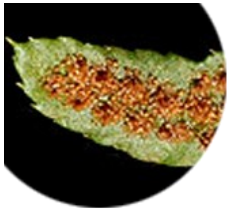
Dryopteris cristata - crested
wood-fern



Woodsia obtusa - blunt-lobed
woodsia



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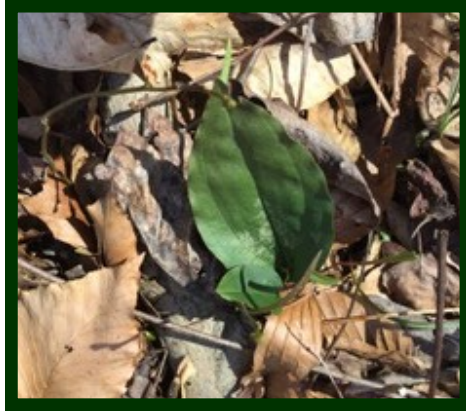


Scientific Name	Common Name	Habitat
<i>Dryopteris celsa</i>	log wood-fern	Rare in rich seepage swamps and woods of the Piedmont and Coastal Plain
<i>Dryopteris clintoniana</i>	Clinton's wood-fern	Rare in seepage swamps of the Coastal Plain
<i>Dryopteris cristata</i>	crested wood-fern	Seepage swamps of the Piedmont and Coastal Plain
<i>Dryopteris intermedia</i>	evergreen wood-fern	Moist woods, swamps and floodplains of the Piedmont and Coastal Plain
<i>Dryopteris marginalis</i>	marginal wood-fern	Steep slopes and rocky woods; primarily of the Piedmont, rare on the Coastal Plain
<i>Polystichum acrostichoides</i>	Christmas fern	Rich woods and steep slopes of the Piedmont and Coastal Plain
<i>Sceptridium bitermatum</i>	Southern grapefern	Moist woods and floodplains of the Piedmont and Coastal Plain
<i>Sceptridium dissectum</i>	cutleaf grapefern	Moist woods and floodplains of the Piedmont and Coastal Plain
<i>Sceptridium oneidense</i>	blunt-lobed grapefern	Swampy floodplains and edges of streams of the Coastal Plain
<i>Woodsia obtusa</i> subsp. <i>obtusa</i>	blunt-lobed woodsia	Rich wooded slopes, crevices in stone walls with limestone mortar; primarily of the Piedmont, rare on the Coastal Plain

Article and photos courtesy of Bill McAvoy, DE State Botanist 🌿



Finding A Wintergreen Orchid



Tipularia discolor - crane-fly orchid

Left to right: newly emerged leaf, foliage from this past fall

I would guess that most people, including native plant enthusiasts, have never seen *Tipularia discolor* (crane-fly orchid), the most common of Delaware's native orchids. *Tipularia*'s flowers, up to 50 in a **raceme**, arch from their stems like tiny ballerinas (or crane-flies) about to take flight. People do not notice the orchid's enchantingly beautiful flowers because their greenish, purplish, brownish, yellowish colors match the hues of their habitat. They blend in with the woody vegetation around them. Perhaps their success in numbers is partially due to their camouflage. Unseen, unpicked.

Tipularia blooms in July through mid-August in Delaware, but the leaves emerge in fall and winter, when the leafless forest canopy allows more sunlight to strike the ground. A *Tipularia* plant produces a single basal leaf. The leaf dies off before the plant blooms. Dark green and glossy when they first emerge, the leaves stand out against snow or leaf litter.

The easiest way to find *Tipularia* is to don your woollies and stroll through a forest or moist woodland. Look for the wintergreen leaves near beech trees; the orchids frequently associate with beech trees.

Continued on next page...



Left to right: Late fall leaf and flower stalk, buds opening bottom to top, raceme of flowers

The leaves may occur singly or in a group. The parallel-veined leaves may or may not have dark spots on their surface, but all *Tipularia* leaves have purple undersides. Flip a leaf over to check for purple; the key to identifying *Tipularia discolor* in the field.

The first time I found a *Tipularia* leaf I was thrilled. I marked its location in my mind. Then I couldn't wait to revisit the site in summer, when I hoped to find flowers.

If you find *Tipularia*, please remember that the best way to conserve native orchids is to leave them undisturbed. If they are picked, they won't produce seeds. If they are dug up, they won't survive transplanting because they require specific soil fungi for germination and growth. 🌱

Article and photos courtesy of Pamela Crowe



A Grim Milestone: What Monarch Declines Say about America's Ecosystems

On December 15, 2020, the US Fish and Wildlife Service (FWS) found that the monarch butterfly (*Danaus plexippus*) warrants listing under the Endangered Species Act (ESA). In a way, this news bodes well for monarchs. As a candidate for ESA listing, the monarch is closer to receiving federal aid for conservation and preservation of crucial habitat. But to reach this milestone marks another low point in the modern biodiversity crisis afflicting the United States and wider world. The monarch butterfly was once one of our most common insects; this decision by the FWS shows its very future is an open question. Scientific literature on the topic generally agrees on the root cause of these declines; habitat loss across North America. As many readers likely know, the precipitous decline of the monarch is emblematic of a wider degradation of our natural ecosystems. Monarchs are the most recognizable representative of pollinator species and the diverse native plant assemblages they need to survive. The decline of the monarch offers a window into the decline of many other beloved natives celebrated in this publication. I also think I speak for many when I say the beauty of our native wildflowers would not be complete without the activity of a bumblebee or butterfly. Thus, the importance of understanding and responding to these declines.

Let us quickly review the ecology of monarch butterflies. In the U.S., the Rocky Mountain range separates two distinct populations of migrating monarchs, both of which overwinter in southern areas in mass congregations. The eastern population overwinters in the mountain oyamel fir forests of central Mexico while the western population overwinters in southern California near Santa Cruz and San Diego. From these areas, the butterflies migrate north as the weather warms. Monarchs rely upon milkweed (*Asclepias* spp.) as their host plants. Migrating monarchs follow the spring and summer sprouting of milkweed throughout North America; in Delaware, our native species are common milkweed (*Asclepias syriaca*), swamp milkweed (*A. incarnata*)

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and butterflyweed (*A. tuberosa*). Monarch eggs laid on these plants grow into fat black and yellow caterpillars before forming the next generation of brilliant orange monarchs many of us recognize.

In both populations, scientists have tracked significant decline in the size of overwintering populations. The strongest factor influencing population decline seems to be the loss of summer breeding habitat. In the span of a few decades our country lost millions of acres of wildflower meadows that once contained the milkweed and other native plant species monarch need to thrive. Instead of these flowers and the queen of butterflies, we cultivate sterile lawns, close-cropped roadsides, and agricultural fields totally devoid of weeds thanks to the combination of genetically modified crop varieties and increased herbicide application. For the price of our country's natural heritage and the native beauty of American landscapes, we bought larger quantities of grain to turn into fuel and an unnatural ideal of "tidiness" in our landscapes.

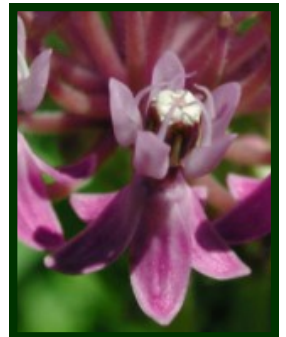
What does this say about us, our society, and the way we choose to live on the land? Like many environmental issues, the plight of the monarch and the native ecosystems they represent comes down to the question of human choice. Will we alter our ways before it is too late, allowing nature back into our neighborhoods and farms? Or will the next generation never learn to recognize the glorious orange-and-black flap of monarch wings? Perusing the pages of *The Turk's Cap* makes me think I am in good company for the drive to change our ways, restoring and welcoming nature back into the fabric of our society. That work can start with an embrace of native plants like milkweed to bring back the monarchs. 🌱

Visit Keelin's [Delaware State Parks Adventure Blog](#)

Article courtesy of Keelin Reilly

Below: *Asclepias incarnata*- swamp milkweed

Flower, flower cluster, and fruit





Seed Propagation for Home: Part I

As the Propagation Manager at Mt. Cuba Center, I've spent the past 15 years collecting and sowing native seed. Join me in a multi-part series on propagating from seed. In this article I will discuss why to propagate from seed, the advantages and disadvantages, as well as, what to consider prior to collecting.

There are numerous advantages to collecting and sowing seed as means of producing plants. Many native species produce an excess of seed to ensure the species continues, since few tend to survive to maturity. If that seed is collected and sown in optimal conditions, there can be great germination success resulting in more plants than one can use- plenty for your garden and to share with friends and neighbors. The cost is often less than purchasing plants or producing by vegetative means (cuttings, grafting or tissue culture). In general, I find seedlings to grow quickly, especially when providing optimal conditions. Easily the most important reason for propagating from seed is that of maintaining genetic diversity, just as we find in nature. Each seed has its own unique genetic code (not a clone), which creates the variations and vigor that can be vital for our environment, birds, insects and life.

As one can see there are many positives to growing from seed, but there are a few disadvantages as well. First, this technique is not suitable for most cultivars. If a specific trait of a cultivar is desired, it must be purchased, grown from cuttings or divided, if possible. When collecting seed, it is you versus nature. For example, squirrels and deer excel at collecting **acorns** first; weevils are exceptional at eating **Asteraceae** seed (Aster family). Additionally, a lot can go wrong when sowing seed. Seed cannot dry out once imbibed (filled with moisture) or it could kill the developing embryo. However, too much moisture can cause seed to rot or seedlings to dampen off (die from fungus or mold). There is the need to maintain specific environmental conditions such as humidity and adequate light or shade, especially when seedlings are young. Planning and paying attention are

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critical for success.

Prior to starting on a collecting adventure there are a few things to consider. One of the most important is to obtain permission. It is illegal to collect from state property without permission. At Mt. Cuba Center, we submit for proper permitting prior to collecting and maintain these records. Collecting from a friend's property should be much easier to obtain consent, especially if plants are promised in an exchange for seed. Equally as important to permission, checking sources and appropriate timing are invaluable so as not to collect in vain. It is often easiest to use sources written for where the collecting is taking place. For example, at Mt. Cuba Center we have many Piedmont plants that are native to the southeastern United States. Many of my sources are based in Alabama and Georgia, where flowering and collecting times vary from the northeast. Yet, it gives me a starting place and I adjust this information to time collecting in Delaware and nearby.

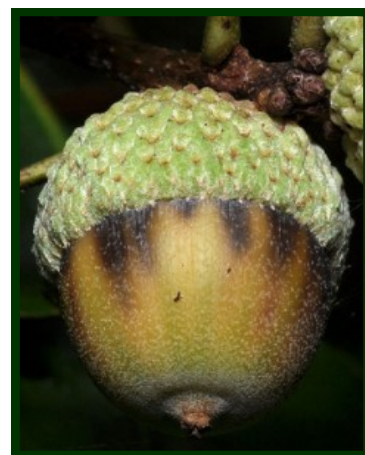
An additional consideration for collecting is that of species identification. Be certain to mark a plant in the garden (or your friends garden if they'll allow it) so it can be recognized after it has bloomed. Plants look dramatically different when they are beginning to die-back and set seed, versus the bloom stage. Paying attention to weather is helpful especially when collecting dry seed heads, such as grasses, which would become moldy if collected wet. If Mt. Cuba sends a team wild-collecting there is often not that luxury if it rains. If this situation arises, merely lay out the plant material in a single layer where there



Left:
Eurybia divaricata - white
wood aster

Member of the
Asteraceae family and
tasty weevil snack

Right:
Quercus prinoides- dwarf
Chinquapin oak
A smörgåsbord for
mammals



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is good air circulation for drying, before packaging the seeds for storage.

Prior to collecting try and determine if the seed is viable. A cut-test of seed can be done to check for seed development and soundness. Cut a seed in half with a razor or knife. The endosperm can be viewed in larger seed (3mm) and is usually white or light in color. The use of a hand-lens is helpful. A float test is another testing method with the idea fully developed seed will be heavier and sink, while undeveloped seed will have air space and therefore float. This method does not work for seed that is dispersed by water and floats downstream. In some species seed will appear to develop but is empty. This is likely due to inadequate pollination or an insect that attacked the seed. If the seed is too small a germination test can be performed later, or one can sow the seed and hope for the best!

It is important to collect only what is needed for one's propagation purposes and allow other seed to remain at the site. This is especially critical in a natural area. In general harvest no more than 10% of a population. If harvesting from one's own garden more can be collected, yet I encourage you to leave some for nature and wildlife.

In conclusion, I find seed the most rewarding way to propagate plants. I am never bored of sowing and waiting patiently for germination, sometimes even years. It is always exciting in the propagation range to discover a seed that germinated overnight. Mt. Cuba offers propagation courses as part of our certificate program. Visit <https://mtcubacenter.org/tag/education/> to learn more. I hope you will find propagating as rewarding as I do! 🌱

Article courtesy of Shelby French

References:

[Center for Plant Conservation](#)
[Native Plant Network](#)

[Ecological Landscape Alliance](#)
[North American Native Plant Society](#)



Taupe Treasures



Left to right : *Lonicera sempervirens*, *Quercus* leaves and turkeytail fungus, *Cornus sericea*

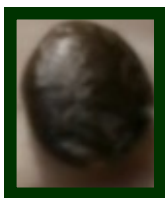
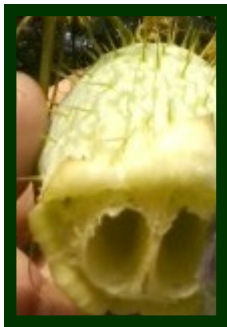
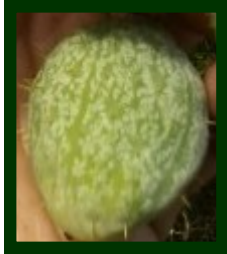
Our eyes are often drawn to features of greatest contrast within the landscape. Picture it: a small red fruit amid crisp snow, or evergreen foliage amidst a backdrop of a thousand fallen leaves. This scene repeats thousands of times over, and the observer is more likely to examine the fruit and leaf up close when it stands out from its surroundings. *Ilex opaca*, the American holly, is known for being guilty on both counts when it comes to grabbing attention from winter walkers. Every once in a while, a passerby will look down at the earth and take a closer look at the background, distinguishing details of maple leaf from oak, red oak from white, leaf top-side from below. In snow, occasional observation of snowflakes landing on a shirtsleeve explains how one tiny unique individual can so easily become one of many and fade out of our interest.

But there are many in-between individuals that are only noticed at the right angle, in the right weather, at the right time of day. *Cornus sericea* displays bright branches with the dogwood's namesake red twigs. *Lonicera sempervirens*, whose name means "everlasting honeysuckle" is semi-evergreen, keeping a few waxy leaves alongside shining soft red fruits, and surprisingly clings onto a couple of lemon-yellow flower clusters even during winter cold. Winter interest is not limited to the colorful. Some of the most decorative features are tan, black and brown. Fallen leaves certainly fit into this category, as do leaves and dried fruits that persist on

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Below: wild cucumber
before and after seed
dispersal, a seed, and
the dried fruit



the plants which produced them. A windy day makes for clattering sights and rustling sounds as textures overlap in beautiful beige and tasteful taupe. Consider the loveliness of a dry meadow en masse on a breezy winter day. Subtle individuals can also be eye-catching, especially those unique in shape. Seed pods vary in shape, size and shade and often ornament the mother plants throughout winter. Common on woody specimens, and less persistent on herbaceous ones, keeping an eye out for the unusual is a lot of fun while hiking in the cold.

Echinocystis lobata draws attention in this way- if you look carefully! It's the spiky little wild cucumber, found in Delaware forests. Late summer into fall, the herbaceous vine produces springy tendrils, wide fuzzy squash leaves and clusters of dainty white-petaled flowers that curl like ribbons. The inflorescences soon become tiny cucumbers! There are only two native cucumber species in Delaware, but this is the only one with both a cucumber-like fruit and spines. Soft spines and mottled spotting decorate the skin of the fruit, and by late fall the fruits have dispersed their seeds. The seeds burst out of one end of the fruit, dehiscing at high speed and leaving the casing in the shape of a pig snout, which dries on the vine. It becomes part of the hidden landscape, and can be found even in early winter before it disintegrates. Reader, I am going to ask you to do something fairly unusual for a newsletter- go to the bathroom! If you have a *Luffa* sponge - made from another plant in the cucumber family, the Cucurbitaceae - you may notice a similarity between the inside of your bath sponge and the image of its cousin, little *Echinocystis lobata*, when it is dried and decorative at year's end.

Explorers! I challenge you to find plants that pique your "winterest" and submit a photo with your name for our next newsletter! E-mail erbrown@udel.edu to submit your discoveries! 🌱

Article and photos courtesy of Emma Brown



Wintery What's Doin'

Upcoming Events

- **Jan 16** Mt. Cuba Center- [Old Growth Forest Network: Forests and Flowers](#) 11AM-12:15PM
- **Jan 21-22; 28-29** [New Directions in the American Landscape Symposium](#) 1-4:30PM; 9AM-12:30PM *Online*
- **Jan 28** [Growing Native Plants from Seed](#) with UD Cooperative Extension and DE Master Gardener Judy Pfister *Online 6:30-7:30PM*
- **Feb 18** [Bowman's Hill Wildflower Preserve 21st Annual Land Ethics Symposium](#) 8AM-1PM *Online*
- **Feb 21** Brookside Gardens- [Green Matters Symposium: Practical Solutions for Ecologically Sustainable Landscapes](#) *Online*
- **Mar 1-3** [Partnership for the Delaware Estuary Environmental Summit](#) *Online*
- **Apr 6** UD Botanic Gardens [The Nature of Oaks](#) Lecture with Doug Tallamy 7-8PM *Online*

Everything is much more accessible now- take advantage of these opportunities!

[Delaware State Parks are open for winter walking](#)

[Delaware Nature Society Upcoming Events](#)

[Ecology-Based Landscapes Virtual Programs by AHS & NDAL Jan-Mar 2021](#)

[Mt. Cuba Center Virtual and Outdoor Events](#)

[North American Native Plant Society Virtual Events](#)

[Northeast Natural History Virtual Conference](#)

[Outdoor Delaware Magazine](#)

[Pennsylvania Horticultural Society Webinar Events](#)

[University of Delaware Botanic Gardens Events](#)

[Women in Horticulture - Horticulture and Folklore Speakers Series](#)

**The DNPS Newsletter is looking for article contributors!
Know anyone who would like to submit an article about native plants
of Delaware? Reach out to erbrown@udel.edu.**

BAFFLING THE BOTANISTS

Introducing the ****NEW**** DNPS quarterly plant identification competition!

- Analyze the images and description to correctly identify the plant
- E-mail **erbrown@udel.edu** with your ID guess, full name, & mailing address
- Correct guessers will be entered into a raffle on 1 Feb 2021 for a prize
- The name of the winner and the answer will be listed in the next newsletter



Top Left: Late season foliage
Bottom Left: Yellow fall color
Right: Spent flower head

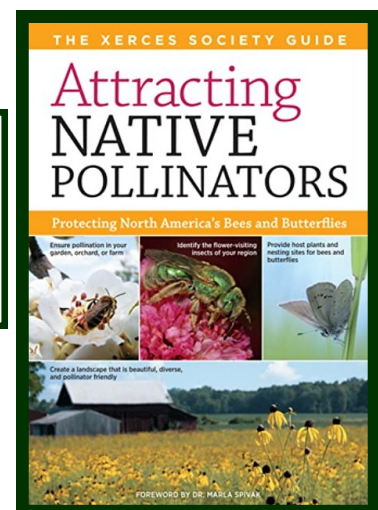


- Grows in forest understory in uniform colonies about 1.5 ft. tall
- Perennial woody plant (woody portion is hard to see)
- Spreads by sweet-scented rhizomes
- Compound leaves with serrated margins
- Leaves are alternate- but look whorled
- Circular clusters of small white pentamerous flowers (having 5 parts)
- Fruits mature to a dark blue-black

This round's prize

"Attracting Native Pollinators:
The Xerces Society Guide to Protecting
North American Bees and Butterflies"

- *You must be a DNPS member to play
- *Only 1 guess per person per newsletter
- *Only 1 prize per newsletter
- *Prize will be mailed to the winner via USPS





MEMBERSHIP APPLICATION



Membership is for 12-months, after which we send you a renewal notice.

- ☐ Full-time Student \$10.00
- ☐ Individual \$15.00
- ☐ Family \$18.00
- ☐ Contributing \$50.00
- ☐ Business \$100.00
- ☐ Lifetime \$500.00

Donations are also welcome _____

Membership benefits include:

-  Our quarterly newsletter-*The Turk's Cap*, and website resources
-  Tips and tricks on gardening and landscaping with native plants
-  Annual workshop, symposium, and project work days

Member Information

Name: _____

Organization: _____

Full Mailing Address: _____

Phone Number: _____

Email: _____

Please make checks payable to:
Delaware Native Plant Society
P.O. Box 369
Dover, DE 19903

Photography Index On Page 1 from top to bottom:

- *Diospyros virginiana*- persimmon **bark**
- *Carya cordiformis* - bitternut hickory **pistillate flowerbud**
- *Polystichum acrostichoides*- Christmas fern **indusia filled with spores**
- *Tipularia discolor*- crane-fly orchid **floret**
- *Asclepias incarnata* ssp. *pulchra* – swamp milkweed **fruit (follicle) and seeds**
- *Quercus prinoides* - dwarf Chinquapin oak **fruit (nut) and leaves**
- *Trametes versicolor*- turkeytail fungus
- *Lilium superbum*- Turk's cap lily **flower**

Photographs courtesy of David G. Smith at www.delawarewildflowers.org