

The Turk's Cap

Volume 25, Number 1

Spring 2022

The Newsletter of the Delaware Native Plant Society



Letter from the President



The Plant Names of Canby and Commons



Plant Highlight: *Asimina triloba*

The Persistent Pawpaw

And



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In Pursuit of Programming



Baffling the Botanists, Spring Scavenger
Hunt, 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 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

Eric Wahl, President

Welcome Spring! The temperature by the last week of week of March may not feel like it, but spring is here, and now we can look forward to warmer days ahead. Keep an eye out for our native spring ephemerals and the bountiful signs of our seasonal cycles.

We are getting geared up for lots of activities this year. Watch for advertisements through our emails and on our Facebook page. Eric Zuelke is really doing some fantastic stuff and spearheading many projects that our membership can take part in if interested. The projects range from upstate in New Castle County all the way to our southern Sussex County, so there is something for everyone to enjoy no matter where you live.

On a related note, our State is quickly becoming an eco-tourist destination and that includes a wonderful network of trails and bike ways. These trails provide for travelling through a diverse range of landscapes, all with native plants to enjoy while you ride, jog, or walk on by. Enjoy the warmer weather and get out among the wild landscapes that we call home.

Stay safe and keep promoting native plants!

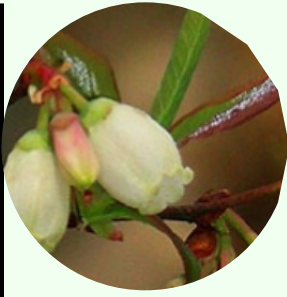
Eric Wahl

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The Plant Names of Canby and Commons

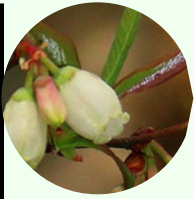
Bill McAvoy, Botanist, State of Delaware

There are several species of native plants that have been described as new to science that recognize and honor two historical Delaware botanists, as well as the state of Delaware itself!

William Marriott Canby (1831 – 1904), was primarily an industrious businessman from Wilmington, but had a great passion for botany. Canby was the president of the Wilmington Savings Fund Society for 24 years and was also the first president of the Board of Park Commissioners for the city of Wilmington. When Canby was not involved in business matters, he spent his time exploring the diverse plant habitats of Delaware and the Delmarva Peninsula. Canby even travelled and collected plant specimens through the northwestern United States. Canby developed quite a reputation in the botany world and collaborated and corresponded with some of the leading authorities in botany at the time, such as Asa Gray who is known as the “father of American botany.” Canby even shared his knowledge of carnivorous plants with Charles Darwin who was conducting research on these fascinating plants. To honor Canby’s contributions to botany, there are 9 species of native plants, one variety, and one hybrid that were named for him *Angelica canbyi* (Canby’s angelica), *Justicia canbyi* (Canby’s water willow), *Lobelia canbyi* (Canby’s blue lobelia), *Ligusticum canbyi* (Canby’s licorice-root), *Lomatium canbyi* (Canby’s biscuitroot), *Paxistima canbyi* (Canby’s mountain-lover), *Pedicularis bracteosa* var. *canbyi* (Canby’s lousewort), *Platanthera x canbyi* (Canby’s hybrid orchid), *Quercus canbyi* (Canby’s oak), *Tiedemannia canbyi* (Canby’s dropwort), and *Veronica canbyi* (Mission Mountain kittentails). According to the rules of botanical nomenclature, a species name that commemorates a person can be either a noun or an adjective. Plants named for Canby are singular nouns, as well as masculine and thus end in -i.

Some of the plants previously listed that were named for Canby, were discovered by Canby himself, such as *Paxistima canbyi*, and some were discovered by other botanists. Of the plants named for Canby, the following can be found growing here in Delaware: *Lobelia canbyi*, *Platanthera x canbyi*, and *Tiedemannia canbyi*. *Lobelia canbyi* was first discovered by Canby in southern New Jersey sometime in the 1860’s, and the genus or generic name, *Lobelia* was named for the 16th century Belgian botanist Mathias de L’Obel. *Platanthera x canbyi* was first discovered by Canby from a swamp near Lewes in Sussex Co., Delaware in 1878. The generic name *Platanthera*, is descriptive for “flat or wide anthers,” and the -x before the species name signifies that the plant is a hybrid, with the parents being *Platanthera cristata* (crested fringed orchid) and *P. blephariglottis* (white fringed orchid). Canby discovered *Tiedemannia*

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Top right: *Platanthera x canbyi*
Photo courtesy of Ron Wilson

Bottom left: *Lobelia canbyi*

Bottom right: *Tiedmannia canbyi*
Photos courtesy of Bill McAvoy



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canbyi in a wetland near the town of Ellendale in Sussex County in 1867. The generic name “*Tiedemannia*” is named for the German anatomist Friedrich Tiedemann.

Canby was so well respected in botany, that an entire genus was named for him, *Canbya*. This genus is in the Poppy Family (Papaveraceae) and is represented by two species: *Canbya aurea* (yellow pygmy poppy), and *C. candida* (white pygmy poppy). *Canbya aurea* is found in Oregon and Nevada, and *C. candida* is known from the Mojave Desert in southern California.

Albert Commons (1829 – 1919), is another botanist from Delaware that has been honored by having a plant named for him. Albert collected plant specimens extensively throughout Delaware and the Delmarva Peninsula, as well as in southern New Jersey. Albert lived with his brother John, who owned a farm near Centerville in northern New Castle County. One day in 1898, Albert was exploring the environs of Cape May, New Jersey when he found an unusual grass in the genus *Dichanthelium* (witch grass). Unable to identify it himself, the taxonomist William Ashe studied his specimen and found it to be a species new to science and named it *Dichanthelium commonsianum* for the discoverer, Albert Commons.

The state of Delaware is also recognized botanically by having a hawthorn tree named for it, *Crataegus delawarensis* (Delaware hawthorn). The species was first collected by William Canby, near the town of Newport in 1903. The Delaware hawthorn is endemic to Delaware, meaning that it grows nowhere else in the world but in Delaware. So, the specific epithet “*delawarensis*” is certainly appropriate.



MICHIGAN FLORA ONLINE. A. A. Reznicek, E. G. Voss, & B. S. Walters. February 2011. University of Michigan. Web. April 11, 2022. <https://michiganflora.net/species.aspx?id=2070>.

Photo: R. Schipper

Dichanthelium commonsianum

William A. McAvoy
Species Conservation and Research Program
Delaware Division of Fish and Wildlife
4876 Hay Point Landing Road Smyrna, DE 19977
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The Persistent Pawpaw

Pamela Crowe



Photos courtesy of David G. Smith

Last September, my daughter gave me a ripe pawpaw (*Asimina triloba*) fruit to sample. My first taste of the creamy, yellow pulp confirmed what I'd read about it: it is a delicious, custard-like blend of banana, pineapple and mango flavors. Embedded in the pulp of the pear-sized pawpaw were two rows of black, lima bean-size seeds, 10 total, which I removed and threw away. Though, having learned about the tree's intriguing traits (and tasted the fruit), I wish I'd planted the seeds.

The pawpaw tree produces the largest edible fruit native to North America, and grows farther north than any other member of its family, Annonaceae, which comprises mainly tropical and subtropical plants. An understory tree of temperate hardwood forests, pawpaw grows in 26 states of the eastern United States, as far north as New York and southern Michigan.

The few times I've encountered pawpaw growing wild in the forest, my impression has been of several spindly trunks with branches mainly at the top, bearing over-sized leaves. However, trees planted in sunny locations typically attain a rounded, pyramidal shape. Pawpaw trees can grow to 40 feet in height with a trunk diameter of less than 12 inches.

Pawpaws bloom in April and May before the trees leaf out. The small flowers have 3 outer petals and 3 inner petals that are green upon emergence, but gradually turn maroon. The self-incompatible blossoms exude a fetid odor that attracts flies and beetles, which are unreliable pollinators and often of limited availability. As a result fruit yields are often low.

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In spite of its pollination problems, pawpaw has a few things going for it that help it persist from year to year. As long as humans and animals of the forest enjoy eating pawpaw fruits, seed dispersal is assured. The large seeds contain plenty of energy for developing sprouts to establish, even in shade. Pawpaws easily reproduce by cloning. A pawpaw patch in the forest most likely represents a group of suckers that grew from the lateral roots of a single tree. Also, deer dislike the taste of pawpaw and avoid browsing pawpaw seedlings and saplings.

In contrast, the caterpillar stage of the northern population of *Eurytides marcellus*, or zebra swallowtail butterfly, will only feed on *Asimina triloba* leaves. The leaves contain acetogenin compounds that are repellent to most insects and birds. The compounds accumulate inside the caterpillars and render them unpalatable to predators. The next time I'm lucky enough to spot the beautiful black-and-white-striped butterfly, I will look for nearby pawpaws.

Sources:

Barlow, C. 2000. *The Ghosts Of Evolution: Nonsensical Fruit, Missing Partners, and Other Ecological Anachronisms*. New York: Basic Books.

Taber, W. S. 2012, Revised Edition. *Delaware Trees*. Wilmington, DE: William N. Cann, Inc.

Matthews, Elizabeth. (2021, September 21) Pawpaw: Small Tree, Big Impact. <https://www.nps.gov/articles/pawpaw.htm>

Hormaza, José I. The Pawpaw, a Forgotten North American Fruit Tree. <http://www.arnoldia.arboretum.harvard.edu/pdf/articles/2014-72-1-the-pawpaw-a-forgotten-north-american-fruit-tree.pdf>

Epps, Mary Lee. (2019, October 9) Pawpaws and the Zebra Swallowtail Butterfly <https://vnps.org/paw-paws-and-the-zebra-swallowtail-butterfly/>

Etymology of *Asimina triloba*:

"*Asimina*" is derived from the Algonquin name "assimin," referring to "min" or fruit. The specific epithet "*triloba*" refers to three-lobes as the tepals of pawpaw are borne in groups of three. The common name "pawpaw" was given due to the fruit's resemblance to papaya (*Carica papaya*).

Sources:

<https://antropocene.it/en/2019/02/18/asimina-triloba/>

https://www.wordsense.eu/Asimina_triloba/

Botanist's note:

This deciduous shrub occurs throughout the state of Delaware in all 3 counties and both physiographic provinces, both Coastal Plain and Piedmont, favoring moist, rich soils of upland forests.

Editor's note:

Characteristic identification features of *Asimina triloba* include drooping leaves and foliar and floral buds with soft black tomentum (they're fuzzy!) The leaves when crushed smell of green pepper, potentially a feature of their acetogenin content. There are about ten other species of *Asimina*, most residing in Florida and further south. The next northernmost species after *A. triloba* is *Asimina parviflora*, the smallflower pawpaw, seen as far north as Virginia. Nativars 'Shenandoah' and 'Susquehannah' bear fruit that is larger, more mango-like in flavor and with deeper orange flesh than the straight species and are now more commercially available.

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The Forgetful Person's Guide to Starting Pawpaws From Seed, At Home

Sarah Morales, Pawpaw Enthusiast

If you're like me, you have an interest in starting plants from seed just for the fun of it on your tiny, part-shade apartment balcony. But sometimes, life becomes a little too...extra and requires some impromptu creativity and slightly-bad decisions. Here's one way you can start your very own pawpaws from seed. While I aim to present this as a satirical piece, I promise you I have had success starting pawpaws from seed with the method below. One year, I kept seeds in the fridge for an entire year and the small handful I started were successful. As always, plants don't read the rules and will do what they want. So have fun and enjoy the chaotic process!

1. Make pawpaw pulp out of an unreasonable amount of pawpaws in one evening, or consume an obscene amount of pawpaws in one evening.
2. Start cleaning up the mess you made processing or eating pawpaws.
3. When you get to the seeds, realize the audacity of considering throwing them away and begin to imagine an entire grove of trees. (Unlimited, free pawpaws!)
4. Immediately abandon your cleaning efforts like you do every other craft or side project and create a new one by completely removing all remnants of pawpaw goop from the seeds.
5. Desperately scramble to find some sphagnum moss from your craft supplies and rejoice when you find some. OR, substitute with some paper towels and remind yourself to buy some moss in a few weeks.
6. Completely soak the moss or paper towels and squeeze excess water. You'll want enough to cover your seeds and keep them nice and fresh for planting. Tuck them in like they're getting ready for a nice, long sleep.
7. Place the freshly tucked seeds in your fridge's crisper and forget their existence for 6 months. Buy some tree tubes or trays while you wait, or

Continued on next page...



Photos courtesy of David G. Smith

begin collecting drink cartons from friends and family like the eco-craft goblin you are.

six months later

8. Open your crisper and celebrate, for the seeds still look okay! OR, realize you forgot to buy the moss you said you would and figure, “what the heck, might as well find out.”
9. Prepare your pots for planting in your preferred seed-starting medium, water, and forget about them for another month or two outside. Resist all urge to check how they’re doing! Treat these like you would that one houseplant you have in the corner that never gets the care it needs no matter how hard you try to remember.

an incredibly long amount of time later

Rejoice! For your seeds have sprouted and you are now the proud plant parent of pawpaws. Godspeed.





Updates on 2022 DNPS Projects

Eric Zuelke, Treasurer and Projects Manager

FIELD WORK ALREADY IN PROGRESS

University of Delaware, Lewes, Pollinator Habitats

The pollinator habitats survived the winter nicely. I met with the Ground Maintenance staff on 14 Mar 2022 and discussed plans for this spring and summer. This year will not see any new plants being added to what we currently have, and will focus on minor vegetation management and just observing and enjoying what we have and seeing how the growing season goes. The dry pollinator habitat was mowed by the maintenance staff on March 15th and I followed behind them to rake up a lot of the grassy duff left behind to open the plants up so hopefully they can outcompete any crabgrass and weeds. I will visit the site on a regular basis to wage chemical warfare against the deer and rabbits through the use of synthetic coyote urine and a dried pig blood product called Plantskydd. This combination creates an olfactory nightmare for the deer especially, and was very effective last year in minimizing browse loss and damage.

Prime Hook Wildlife Area Reforestation

Planted back in 2000, this site has had two seasons worth of vegetation management in October of 2020 & 2021 to remove sweetgum, and whatever non-natives and invasives we encountered. The complete list of work performed is in our history document on our website in the Projects page. I visited the site on April 4th this year to see that some of what we accomplished had been blown apart by winter storms. Girdled loblolly pines that were meant to be wildlife snags had fallen, and many large *Morella cerifera* or *M. pensylvanica* (bayberry, not sure of exact species) fell also, with a couple of them right on top of new oaks that we planted in 2020. These little oaks had to be extricated from the wreckage and staked and tied upright, but we're hopeful for their survival now. The rest of the site looked good and is well on it's way to being a very healthy oak/hickory forest.

Woodland Beach Wildlife Area Reforestation

Our newest reforestation site had the first round of planting completed in autumn of 2020, and a good bit of direct seeding of acorns and hickory seeds done in autumn 2021. The site looks good, but is suffering from deer browse. The Plantskydd product is going

Continued on next page...



to be used this growing season on the all the focus plants that show healthy growth, and more seeding will be done this autumn.

NEW FIELD WORK

Blackbird Creek (DNERR) Reforestation

This was our second reforestation site and the exploratory steps for this site were completed back in 2002, with minor field work done in 2003, and full-scale direct seeding completed in autumn of 2004. The site underwent two years of vegetation management that was finalized in 2006, but at that time, the site was left to its own devices with the hopes that mother nature would take over, but its current state has revealed how much of a mistake that was. The site is now overrun with sweetgum, autumn olive, Bradford (Callery) pear, multiflora rose, and Japanese honeysuckle vine. Only a handful of the original oak trees survived. I met with Rachael Phillos (DNERR Reserves Manager), and Conservation Tech, Jake, at the site on 4 Apr 2022 to go over our proposal to do much needed vegetation management. The concept is identical to what we did at the Prime Hook reforestation site: take out all the junk with chainsaws, loppers, and chemicals, then plant new material in the form of seeding and live potted plants over the next two years, with regular monitoring and management for however long is needed afterwards. The plan was enthusiastically accepted, and this new adventure will slowly churn into action in April 2022, with most of the work being done this coming autumn. Some new potted oaks have already been purchased and will be in the ground by May.



The most recently planted material at the University of DE pollinator habitat was installed in May 2021 through the Xerces Society "Pollinator Habitat Program." As of 9 Apr 2022, approximately 160 of the 700 new plants installed in the dry habitat were popping out of the ground. Not much, but it's still early in the season, and we already know there was some loss.

Photo Credit: May 2021, John Hoyt, DNPS member.





In Pursuit of Programming

Emma Brown, Editor



Planting trees at the Delaware Wild Lands site

Even as a young person (a “20-something,”) I feel much safer being triply vaccinated this year and thus more willing to join in the green scene again. Our blue bubble floating in space is one we all share, and now that we have found options to keep each other safe, I’m very glad that people are still organizing events with health-consciousness in mind.

In January, the DNPS held a virtual meeting for the board and our writers to meet one another. We exchanged ideas and had a nice time together in synchronous (real-time) online discussion!

A February event called the Greenscapes Symposium sponsored by The Friends of Brookside Gardens in Washington, D.C. I participated asynchronously, visiting the lecture videos after they had been recorded and uploaded online, especially enjoying “Great Natives for Tough Sites” - a lecture by Janet Davis.

In March, I masked up and headed outside to Townsend, New Castle County, DE where Delaware Wild Lands facilitated the planting of about 2,000 shrubs and trees. *Amelanchier* species, *Cornus sericea*, *Corylus americana*, *Hamamelis virginiana*, *Rhus copallina* and *Viburnum dentatum* complemented *Carya tomentosa*, *Fagus grandifolia*, *Liriodendron tulipifera*, and several *Quercus alba*, *Q. phellos*, *Q. rubra* and others. The soft soil of the former cornfield made it exceptionally easy for the many volunteers to plant our native trees and help restore the area’s natural lands.



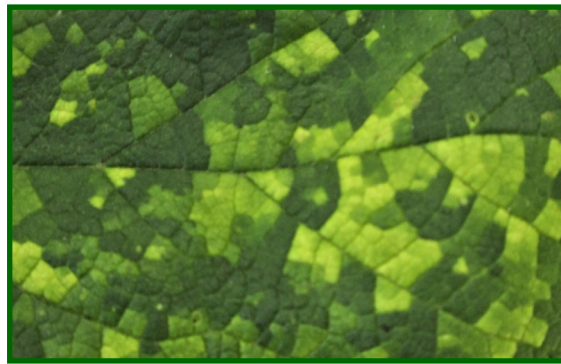


BAFFLING THE BOTANISTS

Changing the game.

Follow the clues to **name the plant** pictured below!

Do you know your stuff?



Is this an airplane view of a patchwork-quilt landscape? No! It's a patchwork pattern of a certain *mosaic virus* on the leaf of a native tree. This tree is also characterized by:

- knobby, warty bark
- simple serrated alternate leaves
- small fleshy “sweet” reddish drupes
- A preference for somewhat wet soil

Previously in the elm family, this plant is now classified in the Cannabaceae family

The genus means “sweet,” the species means “western” and the common name is derived from another name for the European bird cherry tree which shares some visual similarities

E-MAIL your guess to PLANTEARTHFIRE@GMAIL.COM by May 1st, 2022

Prize to be selected and sent to recipient in May.

You must be a DNPS member to enter. 1 guess per person. 1 prize per newsletter.

Previous mystery plant answer (Winter V24,N4): *B. Diospyros virginiana*

Previous winner: Susan Yost





Spring Scavenger Hunt

Find these locals flowering on your next walk in the woods!

Check them out in nature and check them off below

- | | | |
|--------------------------|---------------------------------|---------------------------------|
| <input type="checkbox"/> | <i>Acer rubrum</i> | - red maple |
| <input type="checkbox"/> | <i>Cercis canadensis</i> | - Eastern redbud |
| <input type="checkbox"/> | <i>Claytonia virginica</i> | - spring beauty |
| <input type="checkbox"/> | <i>Epigaea repens</i> | - trailing arbutus |
| <input type="checkbox"/> | <i>Erythronium americanum</i> | - trout lily/dog-toothed violet |
| <input type="checkbox"/> | <i>Lindera benzoin</i> | - spicebush |
| <input type="checkbox"/> | <i>Nuttallanthus canadensis</i> | - oldfield toadflax |
| <input type="checkbox"/> | <i>Podophyllum peltatum</i> | - mayapple |
| <input type="checkbox"/> | <i>Quercus alba</i> | - white oak |
| <input type="checkbox"/> | <i>Sanguinaria canadensis</i> | - bloodroot |
| <input type="checkbox"/> | <i>Thalictrum thalictroides</i> | - rue anemone |
| <input type="checkbox"/> | <i>Vaccinium corymbosum</i> | - highbush blueberry |
| <input type="checkbox"/> | <i>Viola sororia</i> | - blue violet |





Spring into action!

PLANT SALES, PROGRAMS & MORE

- April 8-9 [BHWP Native Plant Nursery](#) opening weekend
- April 27-30 [UD Botanic Gardens Plant Sale](#)
- April 30 [University of Delaware Ag Day](#)
- April 29– May 1 Mt. Cuba Center's [Wildflower Weekend](#), Hockessin, DE
- May 6-7 Delaware Nature Society [Native Plant Sale](#) at Coverdale Farm Preserve, Greenville, DE
- May 11 UDBG "[The Role of Botanic Gardens in Tree Conservation](#)"
- May 14 10AM-3PM Water Family Fest & [Annual Native Plant Sale](#) at James Farm Ecological Preserve, Ocean View, DE Shop or Volunteer!
- May 22 10AM-3PM Newark Arts Alliance presents the [Newark Garden Tour!](#)

BUY PLANTS ALL SEASON LONG

- [American Native Plants](#)
- [E-Burgess](#)— Now selling cranberry & Aronia!
- [Ernst Seeds](#)
- [The Pollen Nation](#)

READING UP

- "[Learn to Love those Latin Names: A straightforward guide to botanical nomenclature](#)" by Dr. Ann Willyard, published March 2022
- "[New Naturalism: Designing and Planting a Resilient, Ecologically Vibrant Home Garden](#)" by Kelly D. Norris, published February 2021
- "[Doing Your Part: How to Protect Endangered Plants](#)" an article by Jane Marsh

Making Local Connections

- [The Delaware Native Plant Society](#)
- [The Maryland Native Plant Society](#)
- [The Native Plant Society of New Jersey](#)
- [The Pennsylvania Native Plant Society](#)

Share your garden!

We want to see the fantastic landscapes, pollinator meadows, "edible forest gardens," and other green spaces you have created using native plants!

Submit your photos to:

Emma Brown, DNPS Editor
plantearthfire@gmail.com

Creative craft brews

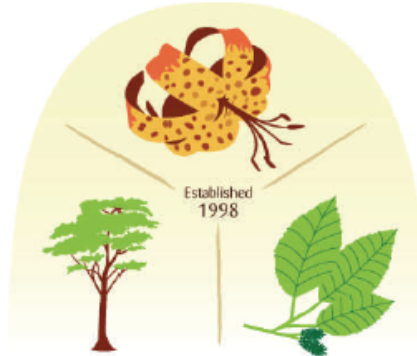


To my surprise, Oliver Brewing Co. in Baltimore, MD has released a "Native Series" - a pilsner with cans decorated to honor local wildlife, including a box turtle (series No. 1), cooper's hawk (series No. 3), and tulip poplar (series No. 2). The flavor of the pale lager is rated 4-stars on Untappd.com, but the true appeal for me is the art of *Liriodendron tulipifera* beautifully painted by Beth-Ann Wilson.





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: _____

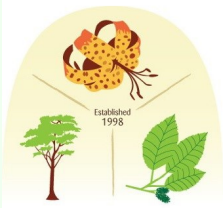
Please make checks payable to:
Delaware Native Plant Society
P.O. Box 369
Dover, DE 19903

Photography Index (on page 1 from top to bottom):

- *Nuttallanthus canadensis*- oldfield toadflax
- *Vaccinium corymbosum* - highbush blueberry
- *Asimina triloba* - pawpaw
- *Thalictrum thalictroides* - rue anemone
- *Viola sororia* - blue violet
- *Lilium superbum*- Turk's cap lily

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





The Turk's Cap

Volume 25, Number 2

Summer 2022

The Newsletter of the Delaware Native Plant Society



Letter from the President



Disguised Designations



Threads of History



The Uncommon Common Milkweed



Spring DNPS Recap



Superb business as usual

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

Eric Wahl, DNPS President

We just experienced the longest day of the year, the Summer Solstice. The growing season is fully here, and warmer days and nights are ahead, at least for the next few months. Some of our fruiting trees and shrubs are in their full glory, including juneberry and blueberry. I think some summer pies are on the menu!

We have numerous things going on with the Society, including continued maintenance at the native plant garden in Lewes, and ongoing planting events throughout the state. Check our listings here in the newsletter and watch for membership emails for future dates and times.

On a wonderful note, we are looking forward to the restart of our annual symposium later this year. The Delaware Native Plant Society is anticipating on having a presentation on the value and proper planting of buffers. This was on our list of presentations to do prior to COVID. We are expecting it to be in late September or early October and be held in the Lewes area. More details will be shared as we get closer to September.

In the meantime, stay safe and keep promoting native plants!

Eric Wahl

Connect with the DNPS on [Facebook](#)

Or find us at:

<https://delawarenativeplants.org/>





Disguised Designations

Emma Brown, Editor

It is so easy to overlook the little things.

At the end of every scientific name is an indication of the person who “called dibs” on the plant - whether they recorded it first or submitted it to the academic world years later, their initials follow the current accepted name. While the binomial name— the Genus and species - are written in italics or underlined, the initial, abbreviation or name of the identifying botanist is not. Though often overlooked, this designation is still an official part of a plant’s scientific name, and connects us with the history of all of the people who competed to classify these plants and the thought processes they used with the knowledge they possessed at the time in order to do so. In the olden days, molecular analysis was not available to verify how closely related plants were to one another, so botanists relied on phenotype— the physical appearance of a plant— to group plants into genera that would define their relationships to other species.

Lilium superbum L. was officially named by Linnaeus - the “L.” is his mark— and he must have been thinking “what a superb lily!” It can grow over six feet tall, has stunning orange flowers and can sometimes produce a lot of them at once. Alternative names or synonyms were created by other botanists such as *L. mary-henryae* Roane & J.N. Henry, and for a while it was known as a subspecies of *Lilium canadense*, but in the end up to the current point in time *L. superbum* has stuck as the result of general scientific consensus.

Common names are harder to track down because there are often many common names that develop over time for a single plant. The English common name we use here is the Turk’s cap lily. This may sound familiar because it’s the title of our newsletter! Why is a plant native to the Americas named after something from the other side of the world? The English-speakers who named it thought the reflexed orange petals resembled a fez, turban, or other headwear worn by the people of Turkey. The Turk’s turban squash (*Cucurbita maxima* Duchesne) is another plant from the Americas with a common name referencing intercontinental fashion.

There is one piece of knowledge I would love to be able to include. The original names of the original people who would have identified, known, and interacted with this lily. The closest knowledge I can find so far is “kossepēshau,” an Algonquian word for a lily or rose. One day I hope to meet someone with species-specific knowledge, to find out the first given names of the lily we have all come to love.

Sources: bigorrin.org, deldot.gov, itis.gov, wildflower.org





Threads of History

Bill McAvoy, State Botanist

Constantine Samuel Rafinesque-Schmaltz (1783-1840) was a 19th-century French biologist, botanist, naturalist, and explorer, who at the age of 19 in 1802, sailed to Philadelphia with his younger brother, Anthony. The two traveled through Pennsylvania and New Jersey where they studied the flora and fauna of the areas. In 1804, Rafinesque traveled to Delaware and walked from Wilmington to the Great Cypress Swamp in southcentral Sussex Co., and back again. In his *Life of Travels*, published in 1835, Rafinesque described his trip to Delaware and mentioned that he walked “300 miles.”

During his travels through Delaware, Rafinesque explored the various habitats of the state and collected plants and other natural history specimens. According to historical journals, letters, and publications by Rafinesque, he wrote an essay on the flora of Delaware and the District of Columbia in 1804, but the essay was never published. In addition, Rafinesque pointed out that in 1815, all his books, manuscripts, drawings, and specimens were lost when his ship, sailing from Sicily to New York wrecked off the coast of Connecticut. Even though Rafinesque’s flora of Delaware was never published, and his specimens were lost at sea, we do have information that Rafinesque collected a rare plant during his expedition to Delaware. A plant that has not been seen in the state since Rafinesque discovered it in 1804. The species is *Drosera filiformis*, the thread-leaf sundew, a carnivorous plant.

When a species – plant or animal – is thought to be new to science, it is thoroughly studied, and a Latin scientific name is assigned. A full description of the species is written and then the name and description are both formally published. According to the rules of botanical nomenclature, the scientific name is a binomial, which includes the genus name (*Drosera*), and the species name (*filiformis*). The description includes all the morphological characteristics of that species. In the case of plants, the description would include information such as the shape and size of the leaves, and the color of the flower petals. The name of the person who described the new species is included in the scientific name. For *D. filiformis*, the scientific name would be written as: ***Drosera filiformis* Raf.** Rafinesque described the species, so his last name is abbreviated (Raf.) and listed after the species name. Rafinesque published the new species in the journal of the Medical Repository of New York, in 1808. The description included information on the species’ known distribution at the time, which

Continued on next page...



Constantine Samuel Rafinesque-Schmaltz (1783-1840)

listed it as: “Gloucester, New Jersey, and Sussex, Delaware.” The current known natural distribution of *D. filiformis* in the U.S. is Nova Scotia, south to Florida.

According to Rafinesque’s *Life of Travels*, he mentioned that he went to Cape Henlopen “to visit the downs [dunes], the light house, and the seashore, to collect crabs, shells and sea plants.” My own botanical surveys of Cape Henlopen State Park have found habitat that is suitable for *D. filiformis*. I believe that when Rafinesque visited the Cape Henlopen area in 1804, he found and collected *D. filiformis*. Likely from the same habitat that exists there today. The fact that habitat can still be found in Delaware for *D. filiformis*, I feel that it will one day be rediscovered and a small piece of Delaware’s natural heritage will be restored.

William A. McAvoy
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4876 Hay Point Landing Road Smyrna, DE 19977
william.mcavoy@state.de.us





The Uncommon Common Milkweed

Pamela Crowe, Plant Enthusiast

On the old farm where I grew up, the roadsides and fields hosted an abundance of common milkweed, *Asclepias syriaca* L. As a child, on a sunny summer day, I would venture into a milkweed patch to pick a bouquet of the *fragrant*, pink, baseball-size flower heads (umbels) for my mother. The tall, leafy plants towered over me. Their dense, downy stems and leaves slowed my progress, while nectar-seeking insects buzzed and whizzed around me.

The instant I broke a flower stem, a sticky, stinky, milky sap (latex) flowed from the break. The latex glued my fingers together, and its odor almost made me sick (though I could find no reference to offensive milkweed latex odor in my research). Such was the allure of the milkweed flowers' divinely sweet fragrance that I returned again and again to harvest the floppy flower orbs.

A. syriaca's floral fragrance also attracts a myriad of insects—wasps, bees, beetles, butterflies, flies, ants—to the flowers, where nectar is plentiful. Some nectar-seeking insects inadvertently launch milkweed's complex pollination sequence.

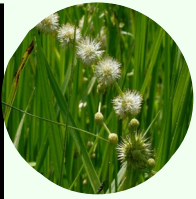
Rather than producing loose pollen grains, like most plants, milkweeds bundle their pollen in sacs called pollinia. (Orchids are the only other plants that produce pollinia.) Milkweed pollinia develop in pairs on a wishbone-shaped structure (a pollinarium) inside each of five stigmatic chambers arranged radially below the flower center (corona) of each milkweed flower. (See Holdrege, 2013, p.13 for an illustration of a pollinarium.)

As an insect travels around the corona to sip nectar, a leg might slip inside a slit (the door to a stigmatic chamber). While the insect struggles to free its leg from the chamber, the leg might snag a pollinarium and pull out the pollinarium still attached to its leg.

A. syriaca is self-incompatible, which means that an insect with an attached pollinarium must travel to a distant, unrelated milkweed flower for the plant to reproduce sexually. The sexual reproduction success rate is low, because most pollinia are deposited inside the stigmas of the same colony of genetically identical individuals (clones) that produced the pollinia. When conditions are favorable, common milkweed reproduces vigorously by cloning; underground stems (rhizomes) from the original plant send up shoots. (To read a clear, detailed explanation of the entire pollination process, see Holdrege, 2010, pp. 11–15.).

A. syriaca benefits from the insects that pollinate it, and milkweed benefits the insects that drink its nectar, including monarch butterflies. However, monarchs are not

Continued on next page...



effective milkweed pollinators (Agrawal, 2017, p. 21). Monarchs do not benefit milkweeds in any way, according to Agrawal.

Monarchs are milkweed specialists; they must eat milkweed plants for their survival. No other plant will do. As monarchs and milkweeds co-evolved, milkweeds developed defenses against monarchs, and monarchs developed adaptations to overcome milkweed defenses (Agrawal, 2017, p. 30).

Female monarch butterflies lay their eggs on milkweed leaves. When the eggs hatch, tiny baby caterpillars (monarch eating machines) emerge and begin feeding on the leaves. At this point, *A. syriaca*'s defenses kick in.

The downy hairs (trichomes) on the leaves slow down the baby caterpillars and expose them to heat and predators. Many caterpillars die after they bite into a leaf, because the latex flow gums up their mouths and they can't chew. Milkweeds produce toxins (cardenolides), which deter most insects. However, the monarch, over time, adapted to the toxins. Monarchs can tolerate and sequester the cardenolides as a defense against their own predators. (Agrawal, 2017, p. 44).

The common milkweed: a plant with an irresistible fragrance, an unusual pollination process, and an ongoing battle against the charismatic monarch butterfly—how can we call it common? Yet, in spite of its complicated, chancy pollination process and its war against insect herbivory, common milkweed still seems to be common, perhaps because people love to help disperse the seeds.

In the fall, milkweed's dry, ripened seedpods crack open and reveal the flat, brown seeds arranged like fish scales inside. Each seed has its own silky parachute (coma). As a child, I would break off a dried seedpod from the stem with some white coma fluff already billowing out. On my walk home, I would pull out pieces of fluff with attached seeds and set them adrift on the breeze. What fun! I still enjoy dispersing milkweed seeds.

References

Agrawal, A. (2017) *Monarchs and Milkweed*. Princeton University Press.

Holdrege, C. (2010). *The Story of an Organism: Common Milkweed*. The Nature Institute. <https://www.natureinstitute.org/article/craig-holdrege/the-story-of-an-organism-common-milkweed>
Retrieved June 17, 2022.





Asclepias syriaca L.

The capital L in the scientific name above stands for Linnaeus.

Carl Linnaeus was born in Sweden in 1707. He developed the binomial nomenclature system of naming plants.

Originally, in 1601, an earlier botanist by the name of Carolus Clusius named common milkweed *Apocynum syriacum*, mistakenly thinking the plant came from Syria.



Apocynum is the genus for which the entire milkweed family - the the Apocynaceae - is named.

In 1753 Linnaeus renamed the plant with the genus *Asclepias* after the Greek god of medicine and kept the species name, even though he recognized the plant came from North America. (Agrawal, 2017, p. 167).

Photos courtesy of David G. Smith



Spring DNPS Recap

Reports and photos courtesy of Eric Zuelke, Treasurer and Rick Mickowski, Vice President

Blackbird Creek Reserve (DNERR) Reforestation Site

Eric met with Rachael Phillos on April 4th, returning to the site to cut down multiflora rose and again on May 6th to plant 4 to 8-foot tall oaks (one each of *Quercus alba*, *Q. coccinea*, *Q. phellos*, *Q. rubra*) from the Adkins Arboretum plant sale. "You should have seen me try to cram them into my little Corolla!!" - Eric Z.

Eric will be returning to spray poison ivy and use pig blood solution as a way to control deer browse.

Bombay Hook Reforestation Site

Eric visited twice this year. The site is doing OK- on the May 9th visit he planted three little baby oaks that volunteered in his yard and one a member gave to the DNPS. He found 5 oaks still living from the material planted over the last two years, but no new seedlings yet from the seeds planted last autumn. He encased all the oaks I did find in bamboo stakes and sprayed pig blood all over everything since the site has three separate deer trails going through it like a little ungulate interstate highway system!

UD Newark Campus- Ag Day Display

At Ag Day on the last Saturday in April, Rick Mickowski managed the DNPS display table:



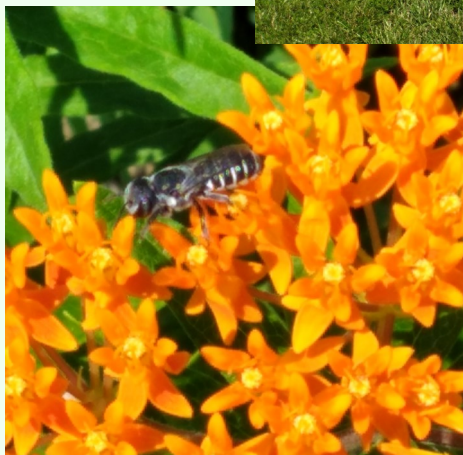
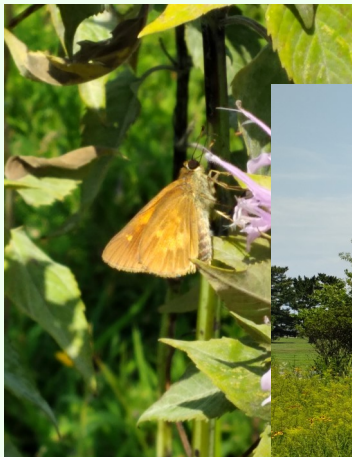
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Summer 2022 UD Lewes Campus Pollinator Habitat Update

Eric Z. has been visiting about every week and spraying his pig blood solution to ward off the deer, which has been successful- “there has been very little browse damage”- Eric Z. He has been doing miscellaneous maintenance as needed and redone the publicity signs with new wooden backers. He had to replace one pole because the wind blew it down and bent it over the winter. Only about 250 plants of the 700 were growing from the previous planting sessions. Some species were missing or coming up in low numbers, which is a little disappointing, but the health of the plants present was good so far! In May, for the UD Day of Giving, we asked members to donate to establish an outdoor classroom. On June 12th we had a DNPS Volunteer Day where we did gravel path maintenance, and some pruning of trees and shrubs.

These pictures of the dry pollinator habitat were taken on 15 July 2022 by Eric Zuelke.





BAFFLING THE BOTANISTS

Follow the clues to name this plant for the chance to win a prize!



Left: the bright green fronds next to a sundew

Right: the comb-like spore-bearing structures

Photos courtesy of Bill McAvoy and the Flora of Delaware
<https://www.wrc.udel.edu/>



A small, cute non-flowering plant with spore-producing structures resembling tiny combs and little curly leaves!

Choose wisely:

- | | |
|---------------------------------------|----------------------------------|
| A. <i>Lobelia cardinalis</i> L. | B. <i>Saururus cernuus</i> L. |
| C. <i>Sparganium americanum</i> Nutt. | D. <i>Schizaea pusilla</i> Pursh |

E-MAIL your guess to PLANTEARTHFIRE@GMAIL.COM by August 1st

Prize to be selected and sent to recipient in August.

You must be a DNPS member to enter. 1 guess per person. 1 prize per newsletter.

Previous mystery plant answer (Spring V25, N1): *Celtis occidentalis* - hackberry





The Turk's Cap Calendar

Have a story to share? Send it our way!
Contact Emma the Editor at plantearthfire@gmail.com

Make local connections with like-minded plantspeople:

[Delaware Wild Lands, Inc.](#)

[The Maryland Native Plant Society](#)

[The Native Plant Society of New Jersey](#)

[The Pennsylvania Native Plant Society](#)

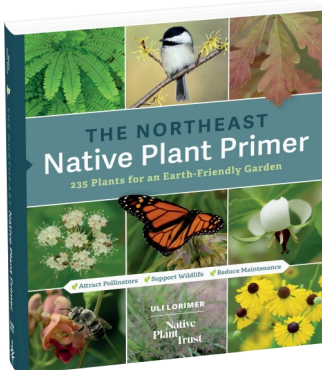
CONFERENCES AND PROGRAMS

- July 15 [Woody Plant Conference](#) at the Scott Arboretum of Swarthmore College (Virtual & In-person)
- August 3 DNLA Summer Turf & Nursery Expo, at the UDBG, Newark, DE
- August 1-5 Perennial Plant Association [National Symposium](#) in Lancaster, PA
- Summer Learning [Workshops](#) at Chanticleer, A Pleasure Garden
 - * August 24 5:30-7:30PM [Native Seed Collection Workshop](#)

SOURCING NATIVE PLANTS

Check out Backyard Wildlife Native Plants Nursery!

Location: 108 E Park Pl, Middletown, DE 19709



READING MATERIAL

The Northeast Native Plant Primer:
235 Plants for an Earth-Friendly Garden
by Uli Lorimer of The Native Plant Trust

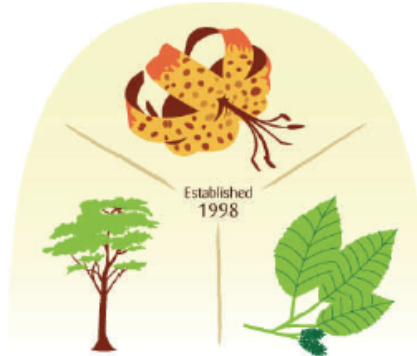
Recommended by Rick Mickowski as a new source of native plant knowledge, released Spring 2022.

Editor's note: Uli Lorimer is a really nice guy and a fountain of knowledge! When I was up in New England for my master's degree, my advisor arranged a visit for me to meet with him. The Native Plant Trust is based in Massachusetts, where Uli is the current director of "Garden in the Woods," but the information contained within this book applies to a wide variety of plants, including Delawarean vegetation. It just so happens that Delaware is where Uli has his roots.





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: _____

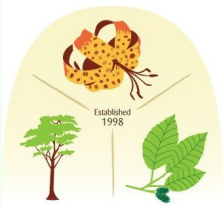
Please make checks payable to:
Delaware Native Plant Society
P.O. Box 369
Dover, DE 19903

Photography Index (on page 1 from top to bottom):

- *Rhexia virginica* L.- Virginia meadowbeauty
- *Saururus cernuus* L.- nodding lizard's tail
- *Vaccinium angustifolium* Ait.- late lowbush blueberry, a "[Historical Native](#)"
- *Sparganium americanum* Nutt. - American bur-reed
- *Rhododendron viscosum* (L.) Torr. - swamp azalea
- *Lilium superbum* L.- Turk's cap lily

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





The Turk's Cap

Volume 25, Number 3

Autumn 2022

The Newsletter of the Delaware Native Plant Society



Letter from the President



Sentimental Identity



A New Combination in the Fern Genus
Osmundastrum (Osmundaceae)



Falling for *Nyssa sylvatica*



Brief Briefings on DNPS Projects



It's Learning Time!

DNPS Officers

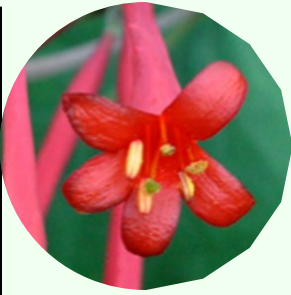
President:
Eric Wahl
Vice-President:
Rick Mickowski
Treasurer:
Eric Zuelke
Secretary:
Emma Brown

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

Eric Wahl, President

Autumn is here and I've been waiting all year for cooler days and chilly nights, plus the wonderful array of colors offered by our native plants.

This year marks the return of our annual symposium. We've decided to have it this year in southern Delaware at the Lewes Library. This year's presentation is about building a better buffer. This was going to be our topic of interest back in the spring of 2020, but covid had other ideas. We will begin the morning with a summary and update of some of our habitat creation projects throughout the state. Afterwards, we will present "Building a Better Buffer: Reclaiming Nature through Better Design." The symposium is free and will start at 10:00 in the library's large meeting room. See page 11 for more details of this very popular annual event of ours.

Keep an ear out for an interview on the topic broadcasted over Delaware Public Media radio station, 91.1 in the coming weeks.

The DNPS had an officers meeting recently, and we would like to announce that we have a new Secretary, Emma Brown. Emma has been editor of our newsletter most recently, and will continue to provide DNPS with her time and talents in this role. Other officers will remain in place: Eric Zuelke as Treasurer, Rick Mickowski as Vice President, and Eric Wahl as President.

Meanwhile, enjoy the hues and changes of the season. Delaware's peak time for colors is typically mid-October through early November starting in the north and moving south. The oranges and reds of maples, yellows of birches, golds of hickories, and purplish reds of oaks are sure to be stunning.

Stay safe and keep promoting native plants!

Eric Wahl

Connect with the DNPS on [Facebook](#)

Or find us at:

<https://delawarenativeplants.org/>





Sentimental Identity

Emma Brown

Plant geeks like myself have a tendency to latch on to a sense of nostalgia around plant names. Particularly if we rely on our emotions to help us associate with details about plants during the identification process. I learned bayberry as *Myrica* and not the current accepted name of *Morella*, and wrote a song to a parody tune I like about the phylogenetic relationship within the Myricaceae to express my passion. Canada toadflax has been both genera *Nuttallanthus* and *Linaria*, and these terms now exist separately in various textbooks, online resources, and in the minds of botanists and plant enthusiasts who have to keep both “on file” in their heads when they see a little blue flower along a wet woodland path and say, “I know that plant’s identity twice over!”

On my first visit to the fabulous Blaschka Glass Models of the Harvard Museum of Natural History, I derived the utmost excitement from seeing the original name tags of botanically accurate glass flowers, using old names for familiar plants. After the 2016 renovation, the original tags were updated and I was just as excited to find the changes, such as the tag for *Cassia hebecarpa*, which assumed the new name of *Senna hebecarpa*. Same plant, same plant description, same glass models, different genus.

DNA sequencing research has provided insight into the relationships between plants, and botanists have worked to re-name and re-group plants based on new knowledge. Updating web resources is faster than re-printing books, but it takes a long time to update everything, so old synonyms stick around for a long time. It is somewhat of a soap opera to find out that one plant has now been divorced and remarried within a different family or genus, or that it has been given a more appropriate specific epithet.

As Eric Zuelke reminded me, many botany professors have fallen so in love with the first name they learned that they *insist* on teaching the old name to students, a little piece of them hoping the new name will never catch on. Some instructors teach both old and new names so students can be prepared when encountering multiple versions of a plant’s historical identity, and some teach only the new name, with a high-tech perspective that does not revisit the past.

We are fortunate, though, in that history is always being written, and Delaware plays a part in that. Our state botanist has contributed to the current standing of the naming distinction between two varieties of cinnamon fern, using evidence found in plant populations in Delaware and surrounding states. Bill has allowed me to include a copy of his official academic publication which describes the changes and the reasoning behind them. In this case, the physical attributes -phenotype- of the plants define the change.





A New Combination in the Fern Genus *Osmundastrum* (Osmundaceae)

William A. McAvoy



Figure 1. Comparison of *Osmundastrum cinnamomeum* var. *glandulosum* (on left), with *O. cinnamomeum* var. *cinnamomeum* (on right).

ABSTRACT. From eastern North America, the glandular pubescent variety of *Osmunda cinnamomeum* L. var. *glandulosa* Waters (Osmundaceae) is transferred as *Osmundastrum cinnamomeum* (L.) C. Presl var. *glandulosum* (Waters) McAvoy.

Key Words: *Osmundastrum cinnamomeum* var. *glandulosum*, *Osmunda cinnamomea* var. *glandulosa*, Osmundaceae, North America, IUCN Red List.

In studying the phylogenetic relationships among the infragenera in Osmundaceae, Metzgar et al. (2008) and Jud et al. (2008) confirmed the work of earlier studies (Bobrov, 1967; Hewitson, 1962; Miller, 1967, 1971; Tagawa, 1941; Yatabe et al., 1999, 2005) that the genus *Osmunda* L. is paraphyletic and that the taxon traditionally treated as *Osmunda cinnamomea* L. is sister to the rest of the family. The authors support the recognition of *Osmundastrum* C. Presl at the level of genus and recognize *Osmundastrum cinnamomeum* (L.) C. Presl as its only extant species.

In 1902, Campbell Easter Waters (1872-1955) described a variety of *Osmunda cinnamomea* distinguished by its densely glandular pubescent foliage as *O. cinnamomea* L. var. *glandulosa* (L.) Waters. Since this time, phylogenetic investigation and taxonomic placements assign the species to *Osmundastrum*, but Waters's variety has never been transferred. This oversight is corrected herein, in recognition of the distinctiveness of the taxon. The varietal name is further lectotypified.

Osmundastrum cinnamomeum (L.) C. Presl var. *glandulosum* (Waters) McAvoy, comb. nov.

Continued on next page...



Basionym: *Osmunda cinnamomea* L. var. *glandulosa* Waters, Fern Bull. 10: 21-22. 1902. TYPE: U.S.A. Maryland: Glen Burnie, low wet woods with the typical, 17 July 1901, C. E. Waters s.n. (lectotype, designated here, PH-079887).

Specimens of the glandular variety were stated to be at the “National Museum, Gray Herbarium” (Waters, 1902: 22), and syntypes were confirmed and designated at both institutions. The specimen at PH designated as the lectotype, was annotated by Waters as “type specimen.”

Discussion. *Osmunda cinnamomea* var. *glandulosa* has been variously treated by different authors. Fernald (1942, 1950) recognized this variety, as well as Reed (1953) and Montgomery and Fairbrothers (1992). Others treat it invalidly as a form (Broun, 1938; Weakley, 2010), while others simply include the variety under synonymy (Whetstone & Atkinson, 1993), or do not consider it (Gleason & Cronquist, 1991). Wagner (1991: 20) was intrigued with this taxon and stated: “there is a remarkable plant known as *O. cinnamomea* var. *glandulosa*, named by the noted Maryland fern expert C.E. Waters at the turn of the century, that appears not only to merit recognition, but may even constitute a distinct microspecies.” When Fernald (1942: 353) first encountered this species in Virginia, he noted that: “whenever we took hold of the abundant *Osmunda cinnamomea*, it stuck to our fingers. Search for ordinary *O. cinnamomea* failed to reveal it. The whole sphagnum wood was given over to the somewhat local var. *glandulosa*.”

Waters (1902: 21) recognized that both the glandular-pubescent variety and the typical variety of the species occurred together under the same ecological conditions and that both maintained their distinctiveness: “Both the variety and the typical form of the species grow in large numbers in low sphagnum woods.... It cannot be said that the variation is due to peculiarities of soil or to varying amounts of sunlight, for the two forms grow side by side all through the woods.” I have also observed both the glandular and non-glandular varieties growing together in populations in Delaware, Maryland, and New Jersey and both varieties maintain their uniqueness in such settings.

Figure 1 illustrates the distinctiveness between *Osmundastrum cinnamomeum* var. *glandulosum* and *O. cinnamomeum* var. *cinnamomeum*. The underside of the leaf and the margins of variety *glandulosum* are covered with stiff, glandular hairs (< 1mm long) that are regularly scattered throughout the lamina and on the midrib. The glandular hairs on the upper side of the leaf are sparse and tend to be confined to the veins. The rachis and petioles are also densely covered with glandular hairs where they intermingle with the long, curly hairs typical of the species. The variety *cinnamomeum* of course, lacks the glandular hairs just described.



Based on collection records (DOV, GH, NCU, PH, and US) and the literature (Fernald, 1942, 1950; Reed, 1953; Wagner, 1991; Montgomery & Fairbrothers, 1992; McAvoy, 2007; V.B.A., 2010), *Osmundastrum cinnamomeum* var. *glandulosum* appears to occur most frequently on the Atlantic coastal plain, where it forms rather large colonies in swampy woods and floodplains. Specimens of *O. cinnamomeum* var. *glandulosum* exist from the following states: New Jersey, Delaware, Maryland (supported by the type), Virginia, North Carolina, South Carolina, Georgia, and Alabama. *Osmundastrum cinnamomeum* var. *glandulosum* is reported in the literature from: Mississippi (Fernald 1950; Reed 1953), Rhode Island (Fernald, 1950), and West Virginia (Wagner 1991).

Paratypes. UNITED STATES. Alabama: Baldwin Co., Perdido River, 2008, W. Barger & B. Holt s.n. (AUA, TROY, UNA, Anniston Mus. Nat. Hist.). Delaware: Sussex Co., Concord, 2010, W. McAvoy 6580 (DOV). Georgia: Colquitt Co., 1966, W. Faircloth s.n. (NCU). New Jersey: Burlington Co., Buddtown, 2010, W. McAvoy & W. Knapp 6577 (DOV). North Carolina: Martin Co., Conoho Creek, 1958, E. Radford et al. s.n. (NCU). South Carolina: Richland Co., Ft. Jackson, 1993, A. Pitman & A. McBee s.n. (NCU). Virginia: Fairfax Co., Potomac Bluffs, 1899, W. Palmer 280 (US).

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william.mcavoy@state.de.us

Editor's note- Interpreting the report:

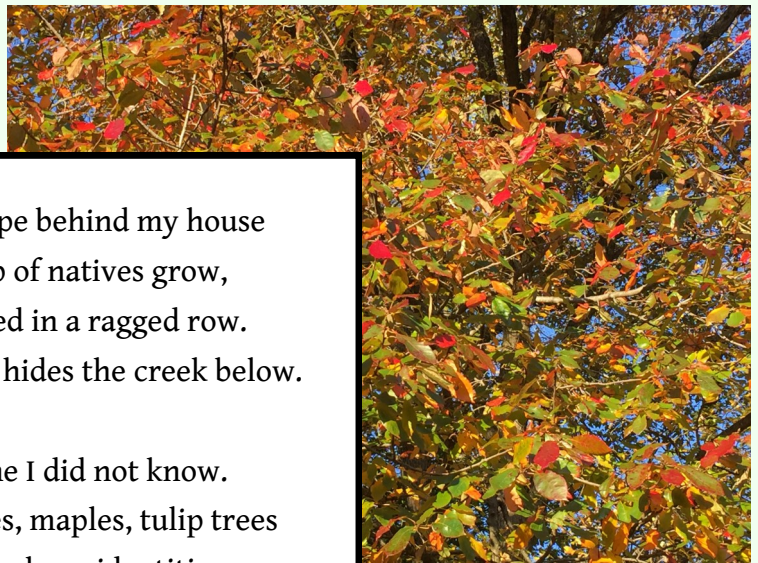
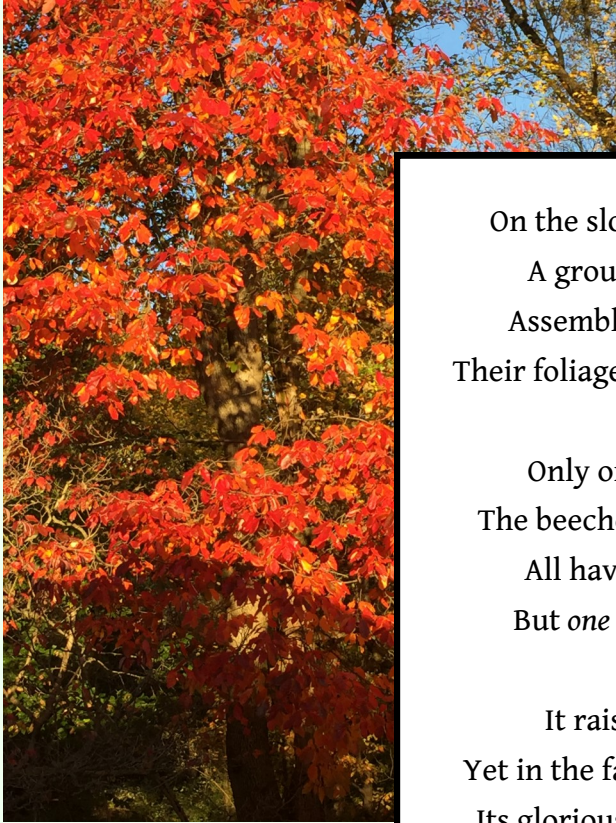
Within the family Osmundaceae, the plant *Osmunda cinnamomea* was given the new name of *Osmundastrum cinnamomeum*. There are other *Osmunda* ferns still recognized, but *Osmundastrum* was deemed different enough to be given a new genus name and the specific epithet was given the complementary suffix *-um*.

Varieties that were added were also given an agreeing suffix type. Within the species *O. cinnamomeum*, two varieties are recognized. They grow alongside each other in the same ecosystems. *O. cinnamomeum* var. *cinnamomeum* is the original species-type variety, with *O. cinnamomeum* var. *glandulosum* possessing the distinction of being consistently much more fuzzy in comparison, with short, dense glandular hairs that the other variety does not consistently have.





Falling for *Nyssa sylvatica* Pamela Crowe

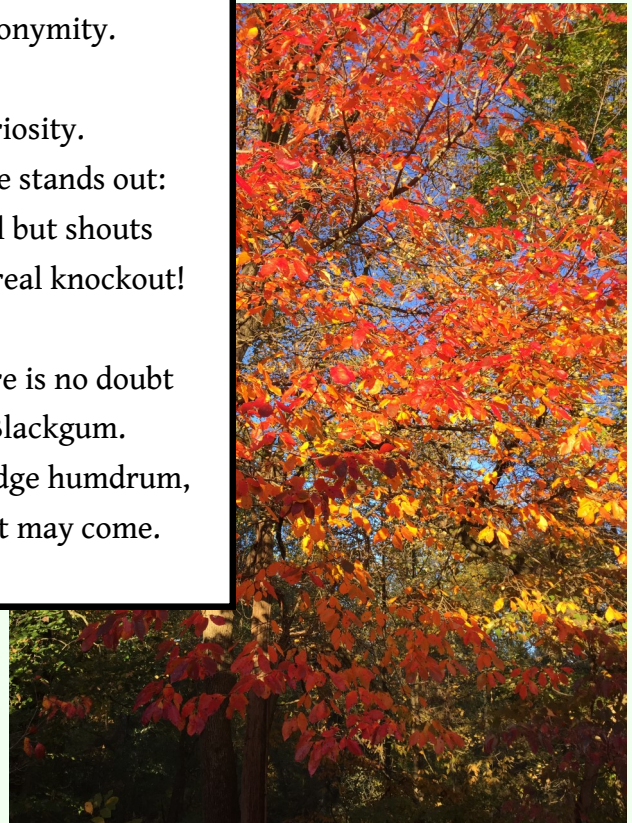
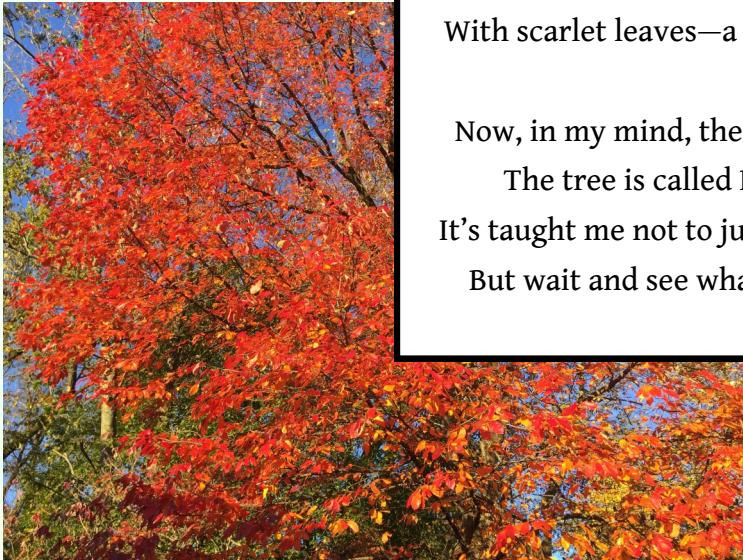


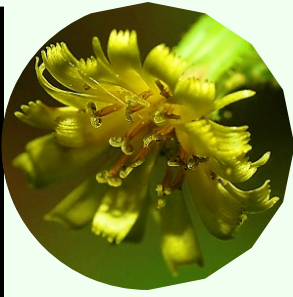
On the slope behind my house
A group of natives grow,
Assembled in a ragged row.
Their foliage hides the creek below.

Only one I did not know.
The beeches, maples, tulip trees
All have sharp identities,
But *one* sought anonymity.

It raised my curiosity.
Yet in the fall this tree stands out:
Its glorious crown all but shouts
With scarlet leaves—a real knockout!

Now, in my mind, there is no doubt
The tree is called Blackgum.
It's taught me not to judge humdrum,
But wait and see what may come.





Brief Briefings on DNPS Projects

Eric Zuelke

UD pollinator habitat

Baccharis halimifolia, *Solidago juncea* and *S. odora* are growing too well, taking over and displacing other plants. A maintenance effort is in order!

Prime Hook WA reforestation site

The new oaks are alive but not thriving due to rabbit browse. Tree tubes are in the works.

Woodland Beach WA reforestation site

Keeping invasive plant populations and sweet gum tree populations low has been successful, encouraging a greater variety of plants. Tree tubes are needed to control deer and rabbit browse.

Blackbird DNERR reforestation site

Control of poison ivy is half-way done and the site has real potential.

Tree tubes

6 foot tree tubes were purchased from plantra.com, with the intent for an upcoming experiment in mind.

Growing oaks

Biodegradable fabric grow bags and cow poo pots were purchased to grow some of our own oak trees from seed this year. Some baby oaks will be transplanted from woodland beach, but since we don't have thousands of acorns to direct-seed on our sites, our most promising method will be hand-sowing in a controlled environment. Seedlings and saplings will also be purchased from around the state this fall to plant at the Blackbird DNERR reforestation site.

Eric is now working on maximizing the tree-growing efforts to produce healthy plants rather than purchasing and planting trees that may be lost in the process of establishment.

We will be having a more in-depth discussion on these sites during our annual symposium on Oct 29, 2022. Please join us to get the scoop on these important projects.





BAFFLING THE BOTANISTS

Follow the haiku to **name this plant** for the chance to win a prize!



**Flowers in spring.
Roots a valued herb petite.
Three deep green leaflets.**

- A. *Panax trifolius* B. *Ambrosia trifida*
C. *Trifolium pratense* D. *Staphylea trifolia*

Prize to be selected and sent to recipient in November.
You must be a DNPS member to enter. 1 guess per person. 1 prize per newsletter.

Previous mystery plant answer (Spring V25,N2): *Schizaea pusilla* - curlygrass fern

E-mail your guess to PLANTEARTHFIRE@GMAIL.COM by November 1st





It's Learning Time!

[DNPS FALL SYMPOSIUM](#)

Sat, Oct 29th
10AM-1PM
Lewes Public Library



From Backyards to Buffers - Reclaiming Nature Through Better Design

The Delaware Native Plant Society is having a free educational symposium on the benefits of vegetated backyards and buffers in the region. It will be held on October 29, 2022, at the Lewes Public Library from 10:00 until 1:00.

The symposium will focus on the many types of buffers, their positive benefits to the environment and the services they provide, which can be easily replicated in your own backyard. Better design and better choices in planting, with a focus on native species, will ultimately help the local community by improving green infrastructure and connecting natural habitats within your own neighborhoods.

From forested buffers to riparian buffers, and even roadside buffers, how they are planted and what is planted plays a vital role in reclaiming nature. The cumulative effect of adding portions of private backyards to this vision can be monumental. How much so is dependent on how many citizens take part.

- WHAT:** Educational Symposium on Buffers
- WHEN:** Saturday, October 29th from 10:00 to 1:00
- WHERE:** Lewes Public Library (not associated with DNPS)
- WHO:** Eric W. Wahl, RLA
Landscape Architect at Pennoni Associates
Delaware Native Plant Society President



ECOLOGY-BASED LANDSCAPE PRACTICE

An Intensive, Multi-Session Course

Presenters: Larry Weaner, FAPLD & Ian Caton

The use of native plants in garden design is increasing dramatically. Crucial knowledge including their ecological traits, colonization patterns, and processes of compositional change, however, is often missing from the equation.

Join Landscape Designer Larry Weaner and native plant expert Ian Caton as they explore how to integrate restoration ecology and garden design to achieve beautiful, ecologically diverse landscapes.

Applicable to landscape practitioners in the Eastern & Midwestern U.S.

November - December, 2022

CEUs available



Photo by Marfi Milano

Registration open in mid-October! ndal.org

Cosponsors: Wild Ones - Native Plants, Natural Landscapes | American Horticultural Society | Lady Bird Johnson Wildflower Center

VIRTUAL COURSE IN
ECOLOGY-BASED
LANDSCAPE
PRACTICE

Nov-Dec 2022

Ndal.org

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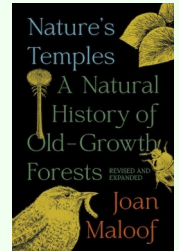
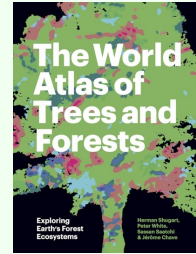
It's Learning Time!

PRINCETON UNIVERSITY PRESS

The Princeton University Press has put tree literature in the [spotlight!](#)

Featuring:

- The World Atlas of Trees and Forests: Exploring Earth's Forest Ecosystems by Herman Shugart, Peter White, Sassan Saatchi, and Jérôme Chave
- Nature's Temples: A Natural History of Old-Growth Forests by Joan Maloof
- Treepedia: A Brief Compendium of Arboreal Lore by Joan Maloof



Until December 31st they are also offering a sale– use the code TREE30 when you order from their website to get 30% off of Princeton's Tree Titles!

GIRL SCOUTS OF THE CHESAPEAKE BAY

GSCB, an organization that is supposed to serve girls in Delaware, Maryland and Virginia, made a decision without the consent of girl scouts and leaders to sell the campsites where programming in teaching girls about the natural world, natural science, and plant identification has previously been a quintessential part of the girl scout experience for decades.

I usually don't like to get involved in politics, but I have a voice reaching out through this newsletter, and I intend to call upon it.

I do not think it's fair that the girls throughout Delaware and all the girls of the Delmarva region will no longer be able to experience the boardwalk among blueberry bushes under eastern mistletoe nestled in red maples, under nests of bald eagles, by vistas of great blue herons, through paths of pawpaws. It is an amazing experience for girls to interact with nature in this way, particularly for girls who would not get such opportunities outside of scouting.

I was a proud girl scout for all twelve years, and I have been an adult girl scout volunteer. My heart is with the scout troops that are losing the opportunity to be immersed in the outdoors.

With that in mind, please consider supporting this [petition](#) that aims to keep these opportunities alive for Delawarean girl scouts and our sister scouts. The petition has 700 of 1,000 needed signatures so far. Can you help me make a positive difference?

<https://www.change.org/p/camps-being-taken-from-disadvantaged-girl-scouts>

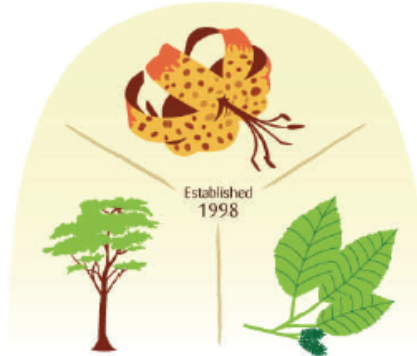


Thank you so much for your help! Sincerely, Emma Brown





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: _____

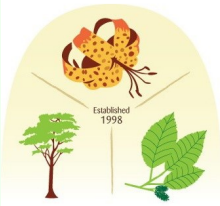
Please make checks payable to:
Delaware Native Plant Society
P.O. Box 369
Dover, DE 19903

Photography Index (on page 1 from top to bottom):

- *Lonicera sempervirens* – trumpet honeysuckle
- *Impatiens pallida*- pale jewel-weed
- *Amaranthus pumilus* - seabeach amaranth
- *Gaillardia pulchella* - fire-wheel blanket flower
- *Hieracium paniculatum* - panicked hawkweed
- *Lilium superbum* L.- Turk's cap lily

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





The Turk's Cap

Volume 25, Number 4

Winter 2022-23

The Newsletter of the Delaware Native Plant Society



Letter from the President



Just Mossing Around



Baffling the Botanists



It's Learning Time!



Become a Member

DNPS Officers

President:
Eric Wahl
Vice-President:
Rick Mickowski
Treasurer:
Eric Zuelke
Secretary:
Emma Brown

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

Eric Wahl, President

Happy New Year from the Delaware Native Plant Society! 2022 has been quite a year and here's hoping that 2023 is a prosperous and peaceful one.

We returned to our Annual Symposium this past year and by all measures, it was a successful event. It was held in Lewes at the public library in October and attendance appeared to match that of previous years when held in Bombay Hook National Wildlife Refuge. We are hoping to return once again to the refuge and keeping a more regular schedule of events as the year progresses.

We are continuing to help promote other organizations throughout the state that deal with native plants, so be sure to watch your emails and our newsletters for events and dates that might pique your interest. Native plants and all that goes with them, such as habitat and food resources for local wildlife, water and soil conservation, and other ecosystem services are in the news cycle just about every day. Sharing our knowledge with others is one of the best ways to promote the benefits of native plants. Here's to a wonderful 2023 and sharing the joy and importance of native plants up and down the state.

Stay safe and keep promoting native plants!

Eric Wahl

Connect with the DNPS on [Facebook](#)

Or find us at:

<https://delawarenativeplants.org/>

Check out the DNPS 2022 Fall Symposium Notes [HERE](#)

Many thanks

to Ms. Deborah Appleby for your generous contribution to the DNPS!





Just Mossing Around

Emma Brown

Photos of common Delaware mosses provided by David G. Smith

The article below includes reprinted information from "The Turk's Cap" Summer 2003 Vol 6. No. 2



Plagiommium cuspidatum

baby-tooth moss

Family: Mniaceae

Typical location: tree base, under grass

Leaf: costate, toothed

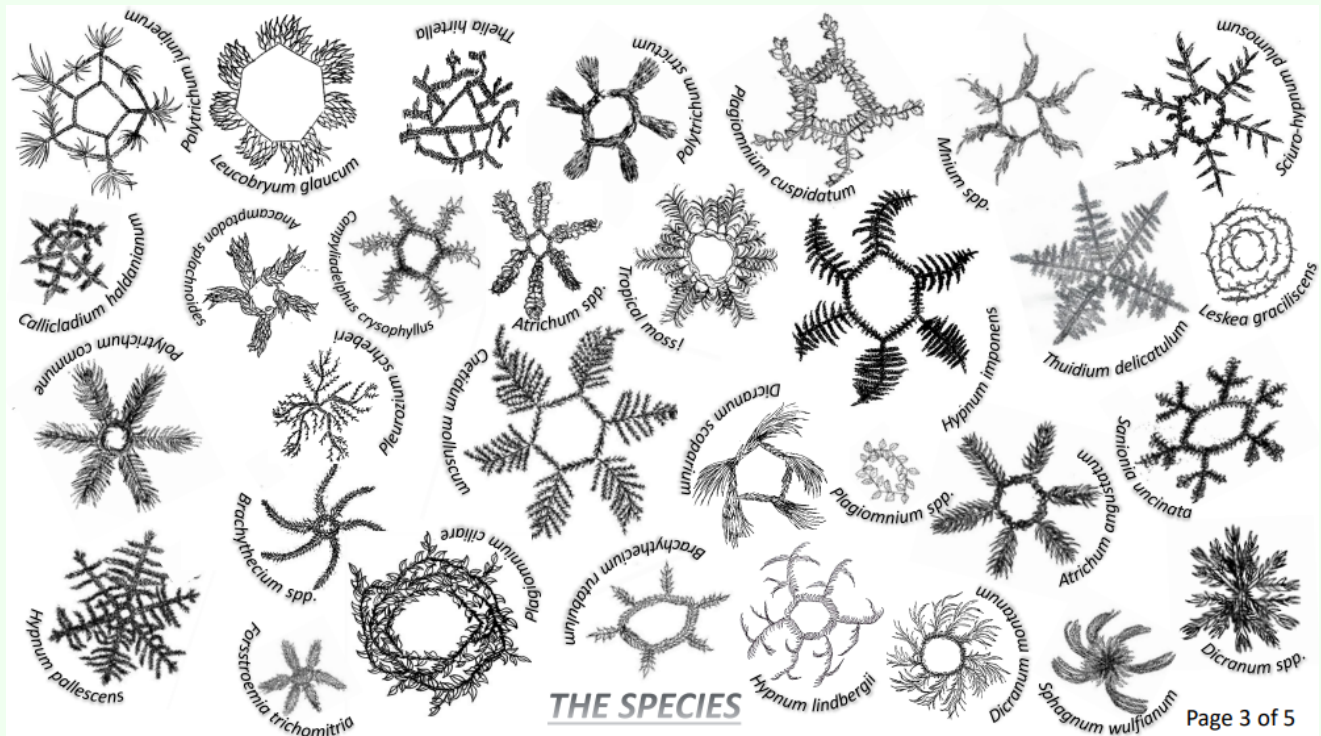
Habits: acrocarp, long seta

Capsules: drooping

Mosses are pretty small. Even seasoned plant lovers often experience "plant blindness" (an inability to notice individual plants in one's own environment) when it comes to mosses (Kritzing). To most, mosses are a pleasant backdrop in the landscape. But they are more than that. In the incredible book "Gathering Moss," Professor Robin Wall Kimmerer writes, "Our acuity at [our] middle scale seems diminished, not by any failing of the eyes, but by the willingness of the mind" (pg. 8). Considering that she literally wrote the book on mosses—with years of research to support it—she's right, truly seeing mosses takes *determination* and *interest*, and moss is really worth a closer look. Plus, mosses are native plants too. So let's get to know our local mosses!

There is an iNaturalist page called the Bryophytes of Delaware, where just over 100 people have identified 80 moss species within 60 genera in 36 families—the vast majority of Delaware's moss species. It's an impressive web project. It wasn't until I left Delaware that I was able to step out of seeing moss as a serene background in the landscape. Dr. Brian Maynard teaches plant identification courses at the University of Rhode Island. Originally from Wilmington, Delaware, Professor Maynard has been in New England for many years, introducing undergraduate students to in-depth moss identification. As one of his graduate teaching assistants, I was able to learn and then teach about moss ID. The first semester, moss lessons worked like this: visiting and selecting a section of an ecosystem with multiple moss species in one location, viewing them with hand lenses, collecting samples, plating and observing them under microscopes to identify them to species, and creating "moss map" presentations at the end of

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the unit on the species that were found. I learned that mosses have three general growth habits– sphagnum mosses with upright “mophead” branching, pleurocarps (the lateral growers– branching outwards, “plurally,”) and acrocarps (the vertical growers– oh those acrobats!) Growth habit is a significant detail used in distinguishing between moss species. Measuring the size of individual leaves in millimeters, the presence or absence of a leaf midrib (called a costa) and the presence or absence of toothed leaf margins, hairs and other textured structures are crucial identification factors. I learned that some cells do not have to be alive to be functional (much like trees), and it was mind-blowing to learn, for the first time, that a moss species found on rock will likely never be found growing high in a tree, and moss identification requires, first and foremost, observing what the moss is growing on. It was also amazing to see moss re-hydrate under a microscope for the very first time, learning that crinkled dry winter moss was not dead, only dormant. After the class, I kept “Common Mosses of the Northeast and Appalachians,” one of the field guides we used frequently for class. It has a map in the front noting that New Castle and Kent County Delaware have a high frequency of overlap with the species found in the book. With the understanding of how to identify mosses and an interest in seeing them on an individual level, I noticed that from one species to another, moss leaves appear as unique as the patterns of snowflakes. I pursued an art project to replicate the patterns of moss branchlets in the form of snowflakes, one species per day for 31 days, identifying them in the field, bringing them back and using the identification guide, a hand lens, and

Continued on next page...



droplets of water to re-hydrate them. When I started to read “Gathering Moss” this year, to my surprise, Professor Kimmerer began by comparing mosses to the fractal patterns of snowflakes; the very thing I spent a month observing and trying to capture! I like to think that meant my love for mosses was on the right track. She also writes of “*Ceratodon purpureus*...growing on the rusted metal of old Chevys and abandoned railroad cars” - another big surprise! I’ve been watching the cycle of a moss growing on an old Ford pickup truck for a while now, *Bryum argenteum*, whose versatility and resiliency and soft pleasant visual texture demand a friendly hello whenever I see it.

What are mosses?

Mosses are small herbaceous plants that photosynthesize- they contain chlorophyll, the pigment that gives them a green coloration. They have root-like structures called rhizoids, allowing them to stay attached to the substrate (surface) on which they grow. Mosses are hygroscopic- their leaves are only one cell thick, and absorb water directly from the air around them, and as such they are highly dependent on humid conditions to carry out their life functions. They do not have a vascular system like larger plants, the rhizoids do not function in water uptake at all (McAvoy). Moss reproduce using a strategy involving an alternation of generations- like many types of plants, a different method of reproduction is used every other parent/offspring generation. Unlike flowering plants though, mosses do not have true flowers or produce seeds- they reproduce by spores.

Here is how it works:

A moss spore lands on a moist substrate. The spore is haploid (containing half the amount of chromosomes of the previous generation). This spore grows into a long, branched filament, producing buds, and eventually becoming what we can visibly see as a leafy green moss, called a gametophyte. This gametophyte is perennial, persisting year after year, and will produce structures (female antheridia and male archegonia) that make gametes (sex cells) called eggs and sperm. When the egg at the base of an archegonium is fertilized, a diploid embryo is formed (the embryo contains twice as many chromosomes as the previous generation). This new generation is the sporophyte generation, called so

Orthotrichum stellatum
bald bristle moss
Family: Orthotrichaceae
Typical location: tree trunk bark
(usually above 3 ft)
Leaf: costate, rolled edges
Habits: acrocarp, short seta
Capsules: ribbed



Above: hydrated
Below: dehydrated



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The Bryophytes of Delaware

Total Bryophytes	235
Total Families of Bryophytes	62
Total Genera of Bryophytes	120
Total Rare Bryophytes	98 (42% of all bryophytes in DE)
Total Peat Mosses (<i>Sphagnum</i>)	23
Total Liverworts	63
Total Leafy Liverworts	47
Total Thalloid Liverworts	16
Total Hornworts	2
Non-native Bryophyte (<i>Lunaria cruciata</i> , thalloid liverwort)	1

Table courteously provided by William A. McAvoy

because once it is mature it will make haploid spores. This sporophyte has a foot– a permanent foothold attached to the gametophyte below it, a stalk (the seta), and a capsule (the sporangium) Setae and sporangia are also visible to the naked eye, and are formed annually. Often, mosses that grow low to the ground have longer seta to increase their chances of spore dispersal further from the parent plant, while mosses perched in higher locations do not need long setae. The capsules have a lid called a calyptra, and this lid pops off in a variety of ways depending on the species to release the spores, beginning the cycle again. Most moss capsules have an operculum (an opening) at the top with peristome teeth, opening and closing in response to moisture to release the spores (McAvoy).

What do mosses do?

Individual moss plants are typically found growing in colonies, closely-packed together in “mats” or “cushions.” The water-retentive properties of moss provide a place for seeds of grass, trees and shrubs to land and begin to grow. Looking at one moss among many is like looking at one tree in a rainforest. There are ecosystems based entirely around mosses, with microscopic organisms like tardigrades and collembola that act as the wildcats and exotic birds within moss jungles. Insects have co-evolved to act as the equivalent of pollinators for carrying moss spores (Kimmerer, pg. 58-61) and a variety of animals and environmental occurrences allow mosses forms of vegetative propagation (Kimmerer, pg. 74, 88-90). These tiny forests and their inhabitants comprise the foundation for much larger ones, as their food webs feed up exponentially to ours. “At the scale of a moss, walking through the woods as a six-foot human is a lot like flying over the continent at 32,000 feet.... Every day we pass over them without seeing. Mosses and other small beings issue an invitation to dwell for a time right at the limits of ordinary perception. All it requires of us is attentiveness” (Kimmerer, pg. 10). Many animals use bryophytes for nesting, shelter, camouflage, and some animal species -

Continued on next page...



Entodon seductrix
cord glaze moss

Family: Entodontaceae

Typical location: rock, stumps, and tree bases

Leaf: ecostate (no costa), smooth edges

Habits: pleurocarp, long seta

Capsules: cylindrical, mostly upright

mostly arthropod life- use mosses for food (Zuelke). People use mosses as part of soil mixes in the horticulture industry (McKnight, *et al.*), as alternatives to traditional grass lawns and as craft supplies. Historically, people used the absorbent and antimicrobial properties of moss for dressing wounds and as baby's diapers (Kimmerer, McKnight, *et al.*). In modern times, mosses are used as environmental indicators- "Bryomonitoring" is a technique allowing humans to measure changes in air quality as mosses "respond in a measurable way to climatic factors and to pollutants," with species stunting, bioaccumulating inorganic compounds, and dying out in areas of high air pollution, and rebounding in numbers when pollutant levels are reduced (Zuelke).

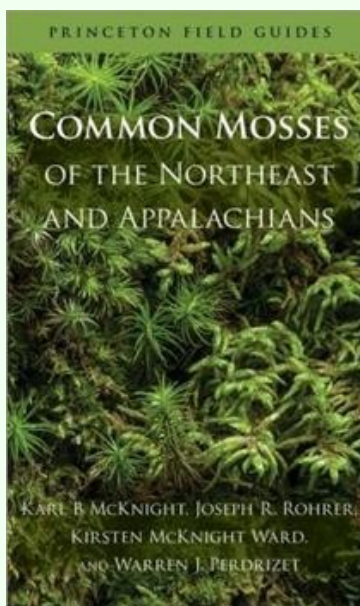
Where are mosses found?

Mosses are part of the Bryophyta- bryophytes are a group of small terrestrial and aquatic plants including moss, liverworts, and hornworts. In a larger sense, mosses are found everywhere in the world, from deserts to forests even to the Arctic and Antarctic. Moss species are substrate-specific (McKnight, *et al.*) and elevation-specific (Kimmerer, pg. 66), growing at different heights from soil under lawns and in sidewalk cracks to rock faces to stumps, logs and tree bases, low tree trunks, middle and higher locations in trees, and on brick walls and cliff faces. Mosses can even live on animal dung and bones (Zuelke). Sphagnum mosses colonize and create their own bogs in areas with lots of water, while many other mosses use an anabiotic life strategy- desiccating and rehydrating with changes in humidity, most notably drying in temperate winter climates only to "come back to life" in spring (Kimmerer, pg. 58-61). The presence of species at different distances from the ground and on particular substrates is attributed to differing moisture levels and conditions that affect them- distance from water sources, exposure to sunlight and wind currents, and details as specific as the height of the moss, proximity to competing moss plants, and age and density of the

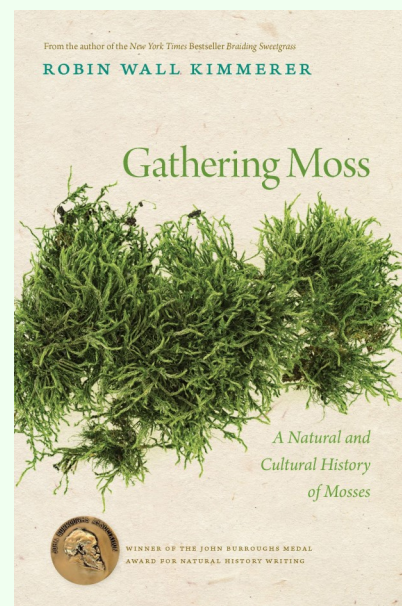
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moss colony itself (Kimmerer, pg. 76-78, 87). Imagine how many details the nature of moss spore must inherently consider when germinating in a home that is just right for it to flourish.



To find out more on how to identify and understand our mosses and to see into the intricate lives of professional garden slug racers and celebrity hermits, I highly recommend both of these books.



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Zuelke, Eric. 2003. "Better Living Through Bryomonitoring." *The Turk's Cap*. Summer 2003, Vol. 6: No. 2 pg. 3, 6.





BAFFLING THE BOTANISTS

Everyone's been baffled the last 3 newsletters– but I know you've got this! Send in your guesses!

Name **this plant** for the chance to win a prize!

Star-shaped leaf arrangement when hydrated

Leaves appressed (closed tightly) to stem when dry

Upright growth habit

Grows on tree bark

Very small!



A. *Rhizomnium punctatum*– red penny moss

B. *Orthotrichum stellatum*– bald bristle moss

C. *Dicranum scoparium*– windswept broom moss

Prize to be selected and sent to recipient in January.

You must be a DNPS member to enter. 1 guess per person. 1 prize per newsletter.

Previous mystery plant answer: *Panax trifolius* - dwarf ginseng

E-mail your guess to Emma at PLANTEARTHFIREFIRE@GMAIL.COM!





It's Learning Time!

A special shout-out:

To the University of Delaware Botanic Gardens– celebrating its 30th anniversary!

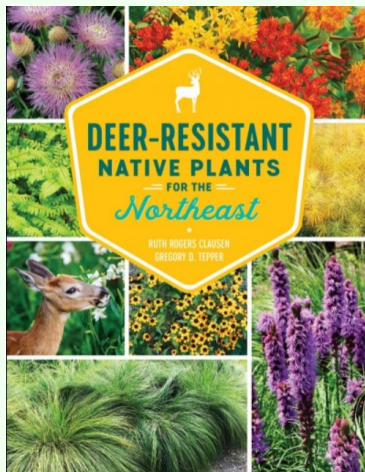
Attend events from our sister states!

- The [Mid-Atlantic Nursery Trade Show](#) (MANTS) is happening January 11th-13th at the Baltimore Convention Center.
- “Don’t Treat your Soil Like Dirt!” February 8th. 7:30PM. Free to attend. Virtual. Click [HERE](#) to register.

Hosted by the Ocean County Soil Conservation District (OCSCD) of New Jersey. The program “will explore the chemical, physical and biological processes of soil and how they work together to create a health foundation for your native garden. All are welcome to attend.

- The GreenScapes Symposium February 17th. 9:30AM-4PM. Virtual. Click [HERE](#) to register. Early bird fee \$45– enroll by January 13th. Held by Brookside Gardens in Montgomery County, Maryland “explores the latest topics related to landscape sustainability and the environment. This event appeals to a broad audience ranging from landscape architects and designers to master gardeners, horticulturalists, and urban planners” and offers continuing education credits (CEUs) to attendees, applicable to Delaware Master Gardeners. Featured 2023 speakers: Laura Hansplant, Pamela Conrad, Veronica Tyson– Strait, Ben Vogt.

Read up!



“Deer-Resistant Native Plants for the Northeast”

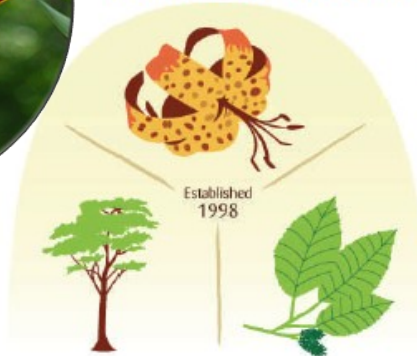
We all know the native deer often get carried away when visiting our gardens - to encourage a wide variety of species to be able to use the ecosystem services provided by our native plants, here is a publication focusing on natives that are less-popular with the *Odocoileus virginianus* crowd. When planning your next spring additions, consider using this as a guide! Co-author Greg Tepper is a regional horticulturist and has a fun website with a “Plant of the Month,” a Native Plant Image Gallery and occasional Native Plant Anecdotes on:

www.speakingofplants.com.





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):

- *Dicranum scoparium* (windswept broom moss)
- *Entodon seductrix* (cord glaze moss)
- *Anomodon attenuatus* (common tree-skirt moss/poodle moss)
- *Rhizomnium punctatum* (red penny moss)
- *Lilium superbum* L. (Turk's cap lily)

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

