

# POTOWMACK NEWS

*Potowmack Chapter of the Virginia Native Plant Society*

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## Plant Secrets:

Lyre-leaf Sage and other plants that grow cleistogamous seeds

By Donna Murphy



LYRE-LEAF SAGE, *SALVIA LYRATA*: SPRING CHASMOGAMOUS FLOWERS ON LEFT, LATE SUMMER CLEISTOGAMOUS FLOWERS ON RIGHT. ALL PHOTOS FOR THIS ARTICLE BY DONNA MURPHY.

Lyre-leaf Sage, *Salvia lyrata*, is often overlooked and underappreciated. As a member of the mint family, *Lamiaceae*, it's hardy and spreads prolifically. It's known to attract hummingbirds with its tubular flowers and makes a good ground cover. When it spreads into the lawn, you can just mow over it, if you can bear to cut down the flowering spike!

Having a mass of Lyre-leaf bloom in the spring is a delight, as the lavender spikes can give the effect of a short, flowering meadow especially if growing in masses among other plants and grasses. Goldfinches feed on the seed, so I leave the dried stalks standing to watch the birds bob up and down on them while partaking of the seeds.

This year I noticed some Lyre-leaf Sage putting up a fresh, green spike in the late summer, but no lavender flowers opened up. When I looked inside the empty calyxes, I saw seeds similar to those that I see after the spring flowers have been pollinated. I learned that these late blooming cleistogamous flowers are self-fertilizing or "selfing," for short.

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## Upcoming

### Charles Smith:

#### How Plants Move

Thursday, January 10, 7:30-9 pm  
Green Spring Gardens Horticulture Center

Explores the ways plants disperse across land and water and discusses reproductive strategies, niche exploitation, plant community composition and what the future may look like considering the fragmented condition of our landscape and climate change.

### Winter Greens at Fraser Preserve Led by Margaret Chatham

Saturday, Jan 12, 9:30-12:30 or 1:30-4:30

From evergreens to winter annuals, native or invasive, come see what's green in January. Watch for sign-up, choose morning or afternoon.

### Margaret Chatham:

#### Larval Host Plants and the Lepidoptera that Eat Them

Thursday, February 14, 7:30-9 pm  
Green Spring Gardens Horticulture Center

Disguises and mimics among caterpillars and butterflies, and what to plant to support more than just monarchs.

### Winter Tree ID Walk

Led by Carrie Blair  
Date and location to be decided: watch for announcement

*All events are free and open to the public. Walks require preregistration. Join our listserve at <http://groups.yahoo.com/group/vnps-pot> to receive notices with walk registration links.*

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## Out with the Old, In with the New

By Donna Murphy

It's time to welcome a new year and a new Programs Chair for our chapter, Laura Anderko, who is ready to start planning our monthly evening talks in the new year. She served on the board of the Fairfax Master Naturalists for 8 years, serving as president for two years.

Laura's bio is filled with remarkable accomplishments, and our evening programs will benefit from her 30 years of experience as a professor, with her professional work focusing on climate change and environmental health, and her past service on the Environmental Protection Agency's federal advisory committees – timely topics that affect our natural world – and us.

Dean Arkema has been planning the field trips for a year now. He too is in the workforce, as an economist for the federal government. In his spare time he creates habitat native to Arlington in his yard in addition to making restorations himself to his historic neighborhood home, plus planning VNPS activities and guiding a high school senior to college.

Wishing Laura and Dean well and hoping to see our members on the trails on our walks and in the evenings at our talks. If you have an idea for a walk or a talk, you can contact them from your personal email at [vnps.pot@gmail.com](mailto:vnps.pot@gmail.com).

## WINTER WEEDING AT FRASER PRESERVE

Winter is the time to root out Japanese barberry (*Berberis thunbergii*), when the ticks it shelters aren't active, when perhaps a little snow makes it easy to spot. There isn't as much barberry at Fraser Preserve as there used to be, but some large plants still linger in odd corners of the preserve, and seedlings have sprouted after large plants were removed. This year, Margaret Chatham will lead workdays every weather-suitable Wednesday in January & February, 10 am-1 pm. If you'd like to join the good fight, contact her at [margaret.chatham@verizon.net](mailto:margaret.chatham@verizon.net) to learn where to meet that week. Bring heavy leather gloves against the prickles, hand clippers and a garden fork or weed wrench if you have one; and as always, water and whatever you need to work in the woods.

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Submissions to *Potowmack News* may be sent to The Editor at [vnps.pot@gmail.com](mailto:vnps.pot@gmail.com)

**Potowmack Chapter  
Virginia Native Plant Society**

**P. O. Box 5311**

**Arlington, VA 22205**

<http://www.vnps.org/potowmack>

## PLANT SECRETS FROM PAGE 1

Plants that bear non-opening cleistogamous flowers also bear chasmogamous flowers, which are the showy ones that attract and are pollinated by, well, pollinators. The word “cleistogamy” comes from the Greek kleistos, meaning closed, and gamos, meaning marriage, union or fertilization. “Chasmogamy” comes from the Greek khasma or chasma, meaning chasm or opening; thus, open marriage or fertilization. Bearing both kinds of flowers is one of the many redundancies in the natural world, which in this case enables the plant to propagate even if it is not fertilized by pollinators in the spring.



Deer-tongue spring inflorescence

Remembering my seed collection experience, I remarked that what we were observing “was not the seed head, because the actual seeds were hidden lower in the sheath.” The looks Alan and Margaret gave me, assured me that it was indeed a seed head, as I realized with some embarrassment.

Now I know it is only the fall seeds that are hidden in the sheath. The chasmogamous spring flowers are wind pollinated and develop into the familiar prominent seed heads. In late summer the cleistogamous flowers of *Dichanthelium clandestinum*, or Deer-Tongue Grass, develop seed independently and “clandestinely” without emerging much if any beyond the leaf sheathes around their autumnal culms.

Cleistogamy and Chasmogamy are just two of the multiple reproductive strategies that botanists study in vascular plants. Chasmogamous flowers typically require more energy to produce the petals, nectar and anything else needed to attract pollinators. Consequently, they have lower seed set compared to the more efficient cleistogamous flowers. The progeny of cleistogamous flowers are clones, but what the seeds lack in genetic diversity they make up for in low cost numbers. And in the Lyre-leaf Sage provide a second season of seed for the Goldfinches!

The largest genus of cleistogamous plants is *Viola*. Some species of Violets produce little budlike structures that are folded in the soil under the basal leaves. They contain self-fertilized seeds that have small attachments called eliasomes, nourishing delicacies that ants relish. The fruits develop underground and release their seeds directly into the soil or close to the surface, where the ants find them and carry to their nests. The dispersed seeds then germinate.

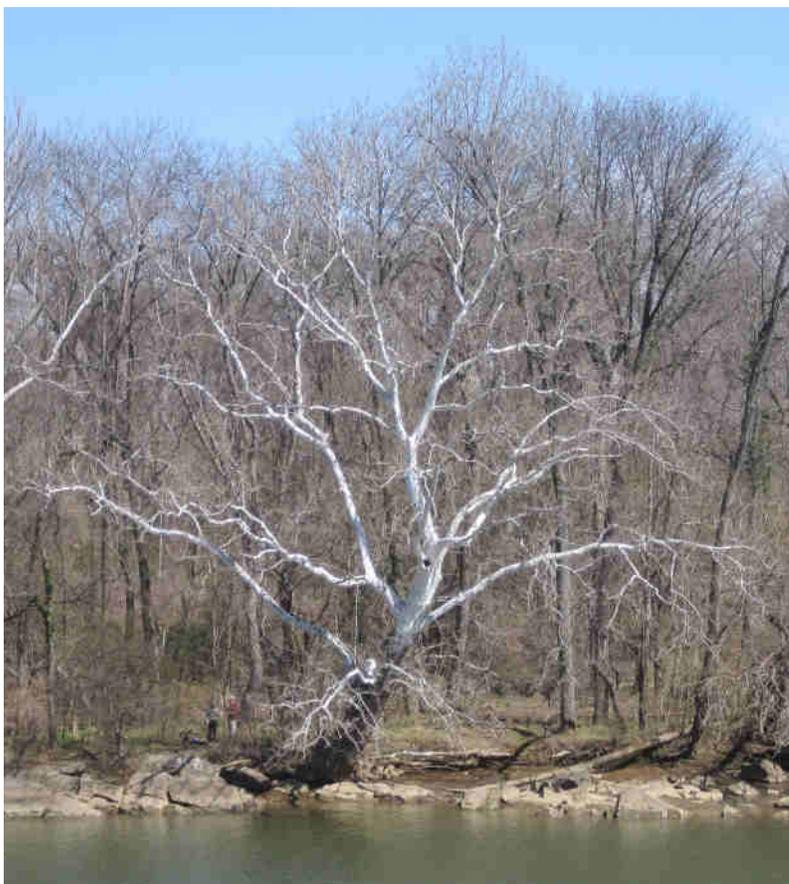
Jewelweed, *Impatiens capensis*, is another plant that can reproduce cleistogamously, when either it grows in too deep shade or when deer trim too many of its flowers off.

Cleistogamy is recognized in peanuts, peas, and is widespread in the grass family, which brings me to an amusing story. Years ago, one of the first field trips I went on was collecting seed with Lisa Bright of Earth Sangha. It was in the fall and we were collecting deer-tongue grass seed. Lisa instructed us to collect a good portion of the branching culms. She said the seed was down inside the sheaths.

Fast forward to one day last summer, working with Margaret Chatham and Alan Ford at the VNPS propagation beds at Green Spring Gardens. We were looking at deer-tongue grass with its early summer inflorescence. As a casual member of the Grass Bunch, I had learned that a grass’s inflorescence often resembles a seed head, but you may be mistaking florets or spikelets for the seed.



Deer-tongue fall inflorescence



# Long-distance Tree ID

by Margaret Chatham

Over the past six months, I have spent far too many hours plying the highways between Fairfax County, Virginia, and Monmouth County, New Jersey, where the only plant identification I could practice was of the long-distance, high-speed kind. A few spots along the way stood out: a fine crop of persimmons, a stand of wild rice — but which sumac was that? How many of those trees can I identify? Now that the leaves have fallen, the challenges of the game have changed, but some identifications are still possible, even from the highway.

There are some easy targets, like the Sycamore (*Platanus occidentalis*) with its white winter bark shining out as you cross the Potomac. The tree shown here is on Roosevelt Island. On foot, one can

sometimes fail to notice Sycamores, since the rough, brown bark on their lower trunks doesn't jump out at you. If you see a street tree with white or light, patchy bark extending all the way to the ground, suspect it might be a London Planetree (*\*Platanus x acerifolia*) instead, a cross between our *P. occidentalis* and the Asian *P. orientalis*. A tiered arrangement of seed balls, one above the other on the same stem, will confirm that it is a London Planetree, but that distinction is hard to see from a car window, and London Planetree is an unlikely find along these highways anyway.

Several evergreens are easy to identify: American Holly (*Ilex opaca*) and Southern Magnolia (*Magnolia grandiflora*), for instance, or White Pines (*Pinus strobus*) with their grayish green, limber needles and Virginia Pines (*Pinus virginiana*) with its short needles and scrubby growth. Then are all the pines with robust puffs of longer needles Loblolly (*Pinus taeda*)? Can't stop to find out.

Big, sturdy oaks catch my eye, but are they all oaks? The ones with lots of marcescent leaves are sure bets, and the marcescent leaves on understory or small edge trees identify them also as oaks. What kind of oak? Only rarely can I catch a glimpse of leaf shape on a tree near the highway to say, "That's a White Oak (*Quercus alba*)," or see drooping lower branches to say, "Pin Oak (*Quercus palustris*)," or a fine-grained specimen tree to say, "Willow Oak (*Quercus phellos*)." Beech trees (*Fagus grandifolia*) also hang onto some marcescent leaves, but the lighter color of those leaves, along with bark color and branch structure all make Beeches easy to identify. Where they stand alone, Tuliptrees (*Liriodendron tulipifera*) often display the interrupted arches of partially lost branches.



## By Their Fruits Shall Ye Know Them

The branches tipped with the cups of Tuliptree seeds, the long cylinders of Catalpa (*Catalpa speciosa*) seed pods, the panicles of Princess Tree (*\*Paulownia tomentosa*) seed pods [Princess tree seed pods shown at right] all offer high-speed identifications. I was surprised at the prevalence of Sweetgum (*Liquidamber styraciflua*) along my route, but the gumballs don't lie. The puffs of Ailanthus (*\*Ailanthus altissima*) seeds remind me of grubby cotton flocking pretending to be snow, but I have to remind myself that only the female trees bear seed, and the male Ailanthus show up as clonal colonies of very stout-twiggged trees, taller than any Sumac. The female Sumac twigs are topped with pyramids of red fruits, though only some of the Staghorn Sumac (*Rhus typhina*) still stand stiffly upright. Are all the ones with fruit panicles that have flopped sideways Smooth Sumac (*Rhus glabra*)? I think I can distinguish the more open panicles of Shining sumac (*Rhus copallina*), but male clones will always require closer inspection to identify.



There are more trees in those forests, but I've filled my newsletter space, so will stop here.

## Remembering Gaylan Meyer

By Margaret Chatham

VNPS will sorely miss Gaylan Meyer (May 8, 1944-October 21, 2018), cheerful compiler of life lists. He started with birds, but when the Grass Bunch started in 2013, he was ready to expand his horizons from work with Fairfax County's ED/RR program to explore grasses with us. Making a proper life list of grasses meant knowing just which grass species he'd seen, which in turn required learning how to read and apply the grass keys in the *Flora of Virginia*. He once counted the number definitions he had to look up in order to understand just one of those descriptions (lots!) Then he needed a microscope attachment for his computer so that he could see all the tiny features the keys described. Gaylan translated the keys for the rest of us and compiled the lists of where he had seen each species. And he posted his microscope photos for the rest of us to look at. The Grass Bunch was never exclusively about grasses only, so he did the same for sedges and rushes. When the pace of finding new species for his life lists of grasses, sedges, & rushes slowed, Gaylan went on to mosses and lichens, giving them the same careful treatment, and sharing his discoveries and observations with anyone who was interested.

You can still enjoy the fruits of his study. His lists are posted on GoogleDocs:

Master VNPS Grass List-Read Only: [https://docs.google.com/spreadsheets/d/1XxrmC-iqkveN\\_GcVJwlkqCQtmC62pht5aWVz2u1S5Fg/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1XxrmC-iqkveN_GcVJwlkqCQtmC62pht5aWVz2u1S5Fg/edit?usp=sharing)

Master Sedges and Rushes List-Read Only: <https://docs.google.com/spreadsheets/d/1D4N6GGYfiCyU7kDQEtTiWTKb8hwhlt3tiuRThhD1bRg/edit?usp=sharing>

Master VNPS Bryophyte List-Read Only: <https://docs.google.com/spreadsheets/d/13FIkUsGIEDiuwlxmOpGzSgGrmSy48f9YvXAkDqS6xg0/edit?usp=sharing>

Master VNPS Lichen List-Read Only: <https://docs.google.com/spreadsheets/d/1vyy22pVnNRjXF6URRWaexEqt-IVZGNpxZrChwdcMXZ4/edit?usp=sharing>

Master VNPS Forbs, Nonwood Plants List-Read Only: [https://docs.google.com/spreadsheets/d/1gAwnrtQ1aQeDqTVDNYaPzUVVa3eOYxjS1VKxtY\\_HH4M/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1gAwnrtQ1aQeDqTVDNYaPzUVVa3eOYxjS1VKxtY_HH4M/edit?usp=sharing)

Where the above lists have a "Y" in the column "Picture," Gaylan posted his photos to back up his plant identifications here: <https://www.flickr.com/photos/124484193@N02/>

Now whenever I see an aluminum can in the woods as I walk, I want to save it for Gaylan, who sold them to a metal recycler. When I see a puzzling grass or sedge, I want to consult Gaylan on its identification. After a morning in the field, I miss going to lunch with Gaylan in the group. Good memories all of someone who took such a vital interest in our natural world. It's hard to say, "Rest in peace, Gaylan."

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Virginia Native Plant Society  
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## Word of the Month: Ballochory



Seed dispersal by ballistic means or “explosive dehiscence.” Think how ripe Touch-me-not (Jewelweed, *Impatiens capensis*) seed pods explode to shoot their seeds out, or of that tiny but ominous popping sound when you brush against invasive Hairy Bittercress, *Cardamine hirsuta*. That’s ballochory at work. Shown here is *Ruellia caroliniensis*, Carolina Wild-petunia, which over the years has spread its progeny from my back yard to the side yard, across the driveway and into the front. It’s always fun to see where it will turn up next.

Photo by Margaret Chatham

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