

POTOWMACK NEWS

Potowmack Chapter of the Virginia Native Plant Society

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Making a Living on the Dark Forest Floor: Plant Strategies

By Margaret Chatham



FOREST FLOOR IN EARLY APRIL: DUTCHMAN'S BREECHES (*DICENTRA CUCULLARIA*), BLOODROOT (*SANGUINARIA CANADENSIS*) AND LARGE-FLOWERED BELLWORT (*UVULARIA GRANDIFLORA*). ALL PHOTOS FOR THIS ARTICLE BY MARGARET CHATHAM.

Ah, Spring! Season of Spring Beauties (*Claytonia virginica*) and Cutleaf Toothwort (*Cardamine concatenata*), Virginia Bluebells (*Mertensia virginica*) and Dutchman's Breeches (*Dicentra cucullaria*)! But even as we feast our eyes on this floral abundance, we know it will not last long. The tree canopy is leafing out, the forest floor will soon be dark, and the spring ephemerals will die back to wait as seed or corm, root or tuber until next spring brings a brief span of time with enough warmth, moisture, and light on the forest floor to photosynthesize and bloom again.

There are some variations on forest floor time-sharing. Grape Ferns (*Sceptridium* sp.) come up in the late summer or fall, make their spores

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Upcoming

First Wednesday Plant Sales

Wednesdays, June 5, July 3, Aug 7, Sept 4, Oct 2, 10 am-1 pm or so
VNPS Propagation Beds
Green Spring Gardens Park

Ferns at Fraser Preserve

Led by Margaret Chatham
Saturday, June 15, 9 am-noon or 1 pm-4pm

While some of Fraser's ferns can be seen from trails, we'll have to venture off-trail to see Adder's Tongue or Crested Woodferns, so come prepared for bushwhacking.

Barcroft Magnolia Bog

Led by Alonso Abugattas and Greg Zell
Saturday, July 13, 9 am-12 noon

Step carefully as you explore this rare endemic plant community. Named for Sweetbay Magnolias (*Magnolia virginiana*), Fall Line Magnolia Bogs occur where springs and seeps emerge from the lower slopes of steep hillsides.

And watch for additional walks not finalized by publication date, to Arlington Cemetery old-growth forest, Patuxent Magnolia Bog, Mason Neck, and additional looks at grasses and ferns, with leaders including Rod Simmons, Bill Harms, Bob Williams, Charles Smith, Kit Sheffield, and our own Grass Bunch.

2019 Statewide Annual Meeting and Conference

Hosted by VNPS Piedmont Chapter
Friday, Sept. 27-Sunday, Sept. 29
Holiday Inn Blue Ridge Shadows,
Front Royal

All local events are free and open to the public. Walks require preregistration. To receive email notices with walk registration links and other chapter news, send an email to vnps-pot-subscribe@yahoo.com.

To manage your VNPS Membership online, including requesting a paper newsletter, follow these steps:

1. Go to <https://vnps.z2systems.com/>
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Congratulations to Cathy Ledec

VNPS member, Fairfax Master Naturalist, Audubon-at-Home Program Ambassador, President of the Friends of Huntley Meadows, Chair of the Fairfax County Tree Commission, Cathy Ledec was (so deservedly!) chosen by the Fairfax County Federation of Citizens' Associations as Fairfax County Citizen of the Year for 2018.

Not only does she remove invasive exotic plants from our parks and participate in citizen science activities with Fairfax County Parks and National Audubon Society, she has led the landscaping efforts to bring native plants to the Mount Vernon Government Center and her HOA, create a native pollinator meadow at Mount Eagle Park (applications! research! grants! Inspiring and organizing volunteers!), and she has headed off two incursions into Huntley Meadows' uninterrupted natural landscape: getting a power transmission line redesigned to protect viewscape and birds, and heading off two proposed paved cut-through bike trails.

Wow!

What is that bee?

Well, there's an app for that (thanks to Kirsten Ann Conrad for cluing us in) <https://www.wildbeeid.org/get-the-app>

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Submissions to *Potowmack News* may be sent to The Editor at vnps.pot@gmail.com

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Virginia Native Plant Society**

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right away, but keep their sterile fronds up and photosynthesizing all winter, then die back in the spring to wait out the summer. Cranefly Orchid (*Tipularia discolor*, shown at left) separates its photosynthesizing time from its seed-making time. Its leaves are up all winter, when their purple backs help them capture more of the winter sunlight: “discolor” means two colors, found in this plant on the two sides of the leaf. It doesn’t bloom until the middle of the summer, when it has no leaves at all.



Another of our local orchids separates its leaves from its flowers less completely: Puttyroot (*Aplectrum hyemale*) also has leaves all winter long, but blooms early enough in the spring that its leaves may still be visible when its flower stalk comes up.

Like all orchids, Cranefly and Puttyroot require a mycorrhizal partner. Cranefly orchid can partner with a number of different fungi, while Puttyroot requires one specific fungal partner. This may explain why, at least at Fraser Preserve, Cranefly orchids are common, while Puttyroot is found in only a few places. For our other native orchids, the story is complicated: some (like one third of our *Spiranthes* or Ladies’ Tresses species) grow leaves in the spring that wither by the time they grow flowers. Most others follow more normal growth patterns. Most grow like any ordinary herbaceous perennial, like Lady’s Slippers (*Cypripedium* species) or Showy Orchis (*Galearis spectabilis*). A few are evergreen, like Downy Rattlesnake Plantain (*Goodyera pubescens*).

And then there are the orchids that don’t bother to photosynthesize for themselves at all, but depend entirely on sugars as well as water and minerals they take from their mycorrhizal associates. Usually, the fungus supplies the green plant with water and minerals it gathers from the soil, and the green plant manufactures sugars in its leaves and supplies them to the fungus. Both organisms benefit. (A plant that can photosynthesize is an “autotroph” – able to feed itself. A plant that depends on fungi for its food is a “mycotroph.”) The flow of nutrients is governed by the laws of chemistry, each compound flowing to where its concentration is lower, so once a freeloader hooks into the system, there isn’t much either the fungus or the photosynthesizing plant (usually a tree) can do to cut off the orchid’s supplies. Our only completely mycotrophic orchids are Coralroot (*Corallorhiza* species) and Crested Coralroot (*Hexaleptis spicata*). – No, I’ve never seen a Crested Coralroot, but will now know to watch for flesh-colored flower stalks with touches of madder-purple but no leaves in late summer in rich mesic forests, dry woodlands over calcareous rocks or on Coastal Plain shell-marl slopes.





Indian Pipe

Indian Pipe (*Monotropa uniflora*, left) is another mycotroph.

Then there are parasitic plants that have haustoria to connect directly with the roots of host plants without a fungus as a go-between. Lousewort or Wood Betony (*Pedicularis canadensis*) is one of these. It is hemiparasitic, having roots that can take up some of their own nutrients and green leaves that can do some of their own photosynthesizing. It is a wide-ranging plant, growing in deep woods where it probably parasitizes oaks and other trees, but also growing in prairies, where it batters on tall grasses.

We have a few true, completely parasitic plants as well. Beechdrops (*Epifagus virginiana*) is a parasite on Beech (*Fagus grandifolia*). Bearcorn



Bearcorn

(*Conopholis americana*) is a parasite on Oak (*Quercus* sp.) Either can grow in the darkest shade a tree can cast.



Lousewort

Botanical and Natural History Library at the Ford Nature Center

Rod Simmons sends: A reminder to folks - especially science students, Virginia Master Naturalists, Tree Stewards, and others - of the Ford Nature Center's Botany, Horticulture, and Natural History Library collection!

Well-known botanical photographer and lecturer Jessie Harris kindly donated her extensive library of botanical and natural history books to the Ford Nature Center in 2017. This collection was supplemented with a large number of horticultural and resource management publications ex libris Fran Uhler – kindly donated to the City of Alexandria Natural Resources Division by the National Park Service.

Many of these books are out-of-print and hard to find. Herbaria and institutional botanical libraries such as the Smithsonian Libraries have many of these titles, but most folks don't have access to those places.

All are encouraged and welcome to peruse this collection at the Ford Nature Center.

Directions: 5750 Sanger Avenue. Shirley Highway (395) to King St. (Rt. 7) west exit. Gradually move to the left lane after exiting and take left onto N. Beauregard Street at bottom of hill (N. Beauregard Street becomes Walter Reed Drive at this intersection at edge of the City of Alexandria and Arlington County). Follow N. Beauregard Street south and uphill past Seminary Road and downhill to Sanger Avenue. Take right onto Sanger Avenue and continue a short distance to its end. Turn left into parking area (shared entrance with school) and proceed to parking lot at woods edge and park. 703-746-5525 (front desk).

Watch Out for Spotted Lanternfly!

By David Gorsline

I recently attended a workshop focused on early detection of Spotted Lanternfly (*Lycorma delicatula*) (SLF) in Fairfax County. Speakers represented the Virginia Cooperative Extension, the Virginia Department of Forestry, and the Fairfax County Urban Forest Management Division.



[Spotted Lanternfly](#) is native to China, and has also been found in India, Vietnam, and Japan. Introduced in Korea in 2006, it is considered a pest in that country. The insect was first detected in the US in September 2014, in Berks County, Pennsylvania, where it was likely imported as egg masses laid on landscaping stone. The first Virginia populations were detected in the Winchester area last year.

A hemipteran, *L. delicatula* is highly invasive and can expand its range rapidly; it can use at least 70 North American host species, although it has a particular association with Tree of Heaven (*Ailanthus altissima*). A phloem feeder, the lanternfly sucks sap from its host plant, leading to wilting and reduced photosynthesis. Spotted Lanternfly also exudes honeydew, which promotes the growth of sooty mold, further impairing the health of its host plant.

Because its American hosts include species of grapes, hops, stone fruits, and *Malus*, the threat of significant economic losses looms.

Egg masses are laid on the roughened, brocaded bark of *A. altissima*, other tree species, and even weathered stone, concrete, and metal. SLF undergoes [incomplete metamorphosis](#), the eggs hatching into nymphs that go through several instars before transforming into winged adults. It is conjectured the lanternfly extracts and isolates toxins from its ailanthus host, and hence that the bright red coloration of its later instars and adults constitutes aposematic coloration. The adult, about an inch long, resembles a colorful black-brown-and-red moth.

In Virginia, first instar nymphs for this season were observed on 26 April 2019. If you see an egg mass, nymph, or adult that you suspect to be Spotted Lanternfly, please report it via <https://ext.vt.edu/spotted-lanternfly>.

Here in Fairfax County, foresters hope to monitor possible sites where SLF might first appear, and that means monitoring populations of *A. altissima*, itself a non-native invasive species. To recap field ID of this plant, look for compound leaves with 11 to 41 leaflets; each leaflet bears a small "thumb" with glands. Yellowish flowers are borne in panicles; the fruits are yellowish or brown samaras. Twigs are stout and hairless; leaf scars are large and triangular, with numerous bundle scars. When crushed, the plant produces an odor (in the words of Jim McGlone) "of burnt peanut butter." It turns out that our map of *Ailanthus* patches in the county is incomplete, especially on private property. Therefore, please report any Fairfax County observations of [Tree of Heaven](#)



(*Ailanthus altissima*) to the [MAEDN](#) (Mid-Atlantic Early Detection Network), either via its mobile app or the web site.

Photos, from top: First instar SLF on fox grapes (USDA photo by Lance Cheung); SLF adult (Rkillcrazy [CC BY-SA 4.0 (<https://creativecommons.org/licenses/by-sa/4.0>)], via Wikimedia Commons); Tree of Heaven (Luis Fernández García [CC BY-SA 2.1 ES (<https://creativecommons.org/licenses/by-sa/2.1/es/deed.en>)], via Wikimedia Commons)



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Word of the Month: Anthesis

Anthesis: the period when a plant's flowers are fully expanded, ready to shed or receive pollen, or the time when flowers are expanding. Clearly, the leaves of the Ramps (*Allium tricoccum*) shown at left will have completely withered by anthesis.

Ramps flower buds above dying leaves, 5/14/19, photo by Margaret Chatham.