NEWSLETTER OF THE PIEDMONT CHAPTER OF THE VIRGINIA NATIVE PLANT SOCIETY

The Leaflet

Lichen Walk by Ed LeGrand **SPRING 2026**

On December 13, 2025, Bert Harris, Co-director of the nearby Clifton Institute, gave a presentation on lichens to members of the Piedmont chapter atop Wildcat Mountain near Warrenton. Bert is a self-taught expert on lichens, noting that because lichens are visible year-round, they are good for winter study when most plants and insects are dormant. Following an hour of background information in the warm house of Jocelyn (Lili) Alexander, we went outdoors and tried our hand at applying what we learned.

In the house, Bert went through his very useful handouts, both on general principles and on identification tips for some of the more common ones. Lichens are a combination of a fungus along with an alga (usually green algae, but sometimes blue-green), with the species name based on the fungal part. The algae don't need the fungus (though the fungus may provide a moist environment), but the fungal portions require the algae for the food the algae make through photosynthesis. Essentially, the fungal portion cultivates (or parasitizes) the algae. The algae live in the upper part of the lichen, or cortex, covered by a thin layer of fungal cells. Below the cortex is the medulla, consisting entirely of fungal elements—this is often white since it lacks the color from the algae, Below this are the thin, tiny rhizines which hold the lichen to the bark or rock—but unlike roots, they do not provide any nutrition.


Powdery Axil-bristle Lichen (*Myelochroa aurulenta*). The numerous tiny wart-like structures are soralia, the asexual reproductive structures.

There are three main categories of lichens: 1) foliose—leafy, with a distinct cortex and medulla, 2) crustose—very thin and can't be removed from the substrate without destroying the lichen, and 3) fruticose—shrubby (as with Reindeer Moss, which is a lichen, not a moss). The three main types of reproductive structures are essential to learn: apothecia (cup-like structures containing sexual spores); soralia (pale asexual raised foci where tiny clumps of algae and fungi are rupturing from the surface), and isidia (tiny raised sausage-like asexual (continued on page 2)

Lichen Walk (continued)

structures containing algae and fungi). As with plants, one can really get "into the weeds," going well beyond the hand lens (which is an essential starting point). Some similar-appearing lichens can be told apart by applying a droplet of bleach or potassium hydroxide and checking for color changes. A few lichens are fluorescent, detectable with a UV light. Going further, a dissecting scope can be useful (as Bert demonstrated with one that he projected for all to see), and a regular compound microscope is needed for spore identification, a level of detail that Bert has delved into.

Once outside, we readily found lots of lichens. BUT taking our classroom learning to the real world was something else again! We could readily tell foliose from crustose and fructose, but those soralia (containing nearly microscopic soredia) sure were hard to tell from isidia, even with our hand lenses. But the tiny cup-like apothecia (which hold microscopic spores) on several of the lichens were distinctive. Bert helped us through our bafflement and pointed out 10-15 different species. While his handout includes common names along with scientific names, he noted that common names aren't established for many lichens. Among those that we saw were Common Greenshield (*Flavoparmelia caperata*), a very common foliose lichen on trees; Powdery Axil-bristle Lichen (*Myelochroa aurulenta*), another common foliose lichen on trees; Board Lichen (*Trapeliopsis flexuosa*), a crustose lichen growing on the fence rails; Star Rosette Lichen (*Physcia stellaris*) a small gray lichen on twigs with lots of dark apothecia; and Candleflame Lichen (*Candelaria concolor*), a thin bright yellow lichen that looks crustose until one gets out the hand lens and sees the tiny "leaves," confirming that it's foliose.

It was both an eye-opening and humbling experience for most of us. While we immediately found lichens on most of the trees (and twigs), rocks, and even wooden fences in the yard, I think most of us were amazed at how much effort Bert has invested in learning the lichens! We were certainly pleased to have him share his knowledge and especially his enthusiasm. (continued on page 3)

The Virginia Native Plant Society (VNPS), founded as the Virginia Wildflower Society in 1982, is a non-profit organization of people who share an interest in Virginia's wild plants and habitats and a concern for their protection.

The Piedmont Chapter is a sub-group of VNPS in the northern point of Virginia east of the Blue Ridge Mountains. It includes Loudoun, Fauquier, Culpeper, Rappahannock, Warren, Clarke, and Frederick counties.

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Lichen Walk (continued)

Bert's iNaturalist photos of lichens can be seen at https://www.inaturalist.org/observations?nelat=38.795808746049325&nelng=-77.83713529332744&swlat=38.78169249328558&swlng=-77.85507390721904&taxon_id=372740&user_id=bertharris&verifiable=any

The Tuckerman Lichen Workshop is an annual gathering of lichenologists. In 2024 the Clifton Institute hosted the meeting, described in this link. https://cliftoninstitute.org/2024/10/04/tuckerman-lichen-workshop-comes-to-clifton/

Winter Speaker Series: Jack Monsted on "Reading the Forest" by Karen Hendershot

Have you ever wandered a forested path and wondered what magic produced the canopy of leaves above you and delicate spring flowers at your feet? February 4, Assistant Curator of the State Arboretum of Virginia and Piedmont Board Member Jack Monsted presented a Zoom lecture on *Reading the Forest*, a substitute for our January Winter Speaker event that was cancelled because of snow. Jack showed how common-sense observational skills backed by scientific investigation can help us understand a forest's history and its plant communities.

Deciduous forests are Jack's favorite ecosystem. He began with an almost poetic introduction of the latticed tree branches, dappled light, and leaf shapes that make up a forest. The surface layer might consist of wildflowers forming a "pastel patchwork over ferns flush in a sea of green," while "above an entirely other world exists," traversed by squirrels and birds that "visit for a moment or a month." One forest might be dense with undergrowth while another might be clear like a "green ballroom held up by pillars of tall trees."

The amazing variety should cause us to ask not just *what* we see in a forest, which implies it is static, but think about the processes: *why* and *how* a particular forest came to be. Myriad interactions of plants with animals, time, environment, and human land use influence what grows in a forest. Among the things we should consider are light availability, soil condition (pH, texture, moisture), propagule availability (seeds, stolons, etc.), and plant enemy pressure (disease, consumption by fauna, competition from other plants).

Jack stepped us through two pictures representing macro and micro views of a forest.

In the first, we detect human use evidenced by smoothly cut tree trunks. Trees were of different sizes, indicating an older forest. Light around the edges points to a disturbance. Tree canopy composition was determined by the types of trees. The slope and aspect (which direction the land faces) all play a role in what grows. At the base of a tree, we can see moss growing, pointing to abundant moisture.

In the second picture, we observe the micro habitat of the herb layer. Running Cedar (*Diphasiastrum digitatum*), which spreads by stolons, had grown in a straight line before turning abruptly for more advantageous conditions. A Common Greenbrier (*Smilax rotundifolia)* vine, which would normally climb toward the light, lay on the ground because the branch to which it was attached had fallen.

Among the most important considerations for forest growth is **time**: Plants react to the conditions around them, causing forests to change considerably. The Virginia's Department of Conservation and Recreation (DCR) estimates that the State was 93 percent forested in 1630 but dropped down to 40 percent by 1909, then recovering to 61 percent by 2021. But the percentages only tell part of the story. Old growth forests (100 to 400 years old) may make up less than 5 percent of the current area.

Studying plant communities of similar attributes but of different ages, known as *chronosequencing*, helps understand how they change with time. These studies provide data on *canopy formation*. They show young forests have high stem density – as much as 850 stems per hectare (about 2-1/2 acres). Density remains high for 40 to 60 years but then declines as some trees die and others (continued on page 4)

Winter Speaker Series: Jack Monsted on "Reading the Forest" (continued)

flourish. Simultaneously, basal area (trunk size) of the remaining trees increases as they age. Light in the forest decreases for about the first 50 years and then evens out before falling again in forests more than 100 years old

The *herb layer* of the forest accounts for 80 percent of its diversity and is also strongly influenced by forest age. Forest-adapted plants tend to be small, resulting from low forest light, and they have limited propagules. While Common Wild Ginger (*Asarum canadense*) has two methods of spreading, neither yields abundance. Short stolons constrain how far it can go. Its seeds, like those of Trillium (*Trillium spp*.), are spread when ants eat the nutrient-rich elaiosome attached to the seed. But ants don't travel far – only about 7 feet. Trillium seeds require three to seven years before flowers appear – a long wait for a seed that has moved no more than 10 feet! Thus, abundance and diversity of spring ephemerals point to a well-established forest.

Human land use has been a prominent feature of American forest for tens of thousands of years. Native Americans burned some land for hunting and cultivation, planting strawberries and grapes. Settlers cut forests for housing, fuel, food and pasturage.

Sites historically used for pasture may be identified by the presence of barbed wire, stumps left from cut trees, and "wolf trees" (as in "lone wolf"). Wolf trees were left to provide shade for livestock. Encompassed by sunlight early in life, they have low hanging limbs and are much older than surrounding trees and may have different herbal plants around them. Previously pastured sites are somewhat more welcoming to native plants than cultivated sites.

Land that is even (with no dead tree stumps) was likely used for crop cultivation. It tends to be somewhat more prone to invite invasives.

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Winter Speaker Series: Jack Monsted on "Reading the Forest" (continued)

Topography is of course also significant for the development of a forest and interacts with the underlying geology of an area.

- Higher-elevation properties tend to be drier and more acidic, due to leaching of the soil. One would find such plants as Mountain Laurel (*Kalmia latifolia*) and Blueberry (*Vaccinium spp.*)
- Floodplains tend to be richer with higher pH indicating alkaline conditions. The richness of floodplains means greater desirability for cultivation but also fosters plant diversity when left alone.
- Hillsides may vary in their soil properties but are more likely to have remained forested because of the difficulty of clearing them.

Disturbance of the land can come not only from human use or also from natural sources, such as tree falls or fire from lightning strikes. Such events can be beneficial for forest diversity. Trees such as Redbuds (*Cercis canadensis*) are edge-adapted and tend to spring up where disturbance occurs. Tree falls allow for more light and decaying wood enriches the soil, promoting new plant communities. And some plants are fire-adapted, such as Dwarf Spiraea (*Spiraea corymbose*), or even require fire such as Bristly Sarsaparilla (*Aralia hispida*). Jack also noted that some plants, such as Hay-scented Fern (*Dennstaedtia punctilobula*) are prominently influenced by *lack* of disturbance and will densely spread if not interrupted.

The many influences that determine forest composition interact with each other and take a very long time to develop. Jack encouraged us to appreciate the long processes of forest formation and enjoy our own attempts to "read a forest", especially in the spring when ephemerals will be visible. He also provided this link to the Old Growth Forest Network. Happy Forest Reading!

Registration notices for Chapter events will be sent out three weeks before the event. Business meetings will conclude with a discussion of a current topic. Members are encouraged to join us.

Tuesday Mar 3 3-5pm Piedmont Chapter Business Meeting

Clarke County. Blandy Experimental Farm Library. All Chapter members are welcome to join the Chapter Board at these Meetings. Discussion will be about Phragmites, Pros and Cons.

Saturday Mar 14 1pm Walk at Ferry Hill

Rod Simmons, Alexandria Natural Resource Manager and Plant Ecologist, will lead a walk at Ferry Hill, an old age forest on limestone bedrock above the Potomac and C&O Canal in Maryland. We will see many large trees and ferns.

Sunday Mar 29 1pm G. Richard Thompson WMA Invasive Removal

Fauquier County. We will look for early signs of spring while we pull Garlic Mustard, led by Sally Anderson. Bring gloves and drinking water.

Tuesday Apr 7 3-5pm Piedmont Chapter Business Meeting

Clarke County. Blandy Experimental Farm Library. All Chapter members are welcome to join the Chapter Board at these Meetings.

Saturday Apr 11 10am-noon Calmes Neck Bluebell Walk

Clarke County. **VNPS members and Calmes Neck residents only**. See early spring wildflowers along the Shenandoah River. Walk is moderate and a walking stick is recommended. Bring lunch, water, and insect repellent.

Sunday Apr 12 10am-noon Spring Wildflowers at Rockland Farm

Loudoun County. Join the VNPS Piedmont Chapter and Loudoun Wildlife Conservancy for a field trip to explore this beautiful area near White's Ferry for the early spring wildflowers. Limit 15.
Questions: Contact info@loudounwildlife.org.
Register at https://loudounwildlife.org/event/spring-wildflowers-at-rockland/

Friday Apr 24 5pm G. Richard Thompson WMA Trillium Walk

Fauquier County. Master Naturalist Sally Anderson will lead this evening walk to see millions of Trilliums and other spring flowers.

Tuesday May 5 3-5pm Piedmont Chapter Business Meeting

Clarke County. Sky Meadows Picnic Area weather permitting or Blandy Experimental Farm Library. All Chapter members are welcome to join the Chapter Board at these Meetings.

Saturday & Sunday May 2 & 3 Wildflower Weekend at Shenandoah National Park

Appreciate the diversity of wildflowers growing in the Blue Ridge. More than 1,300 species of plants thrive in Shenandoah National Park.

Saturday & Sunday May 9 & 10 9am-4:30pm State Arboretum Garden Fair

Clarke County. Several native plant vendors and lots of information available. Another opportunity to help us by sitting at a Piedmont Chapter booth (includes free admission), contact piedmont@vnps.org.
See https://blandy.virginia.edu/garden-fair for more information.

Saturday May 16 10am Shenandoah River State Park Walk

Warren County. See late spring flowers along the south fork of the Shenandoah River.

Tuesday Jun 2 2-4pm Piedmont Chapter Business Meeting

Clarke County. Blandy Experimental Farm Library. All Chapter members are welcome to join the Chapter Board at these Meetings.

Mulling over Marcescence by Natalie Izlar

The Piedmont Chapter of VNPS Board ended our February 3 meeting with a discussion of marcescence, where some deciduous plants retain their dead or senesced leaves during the winter.

According to "The Green Thumb"

> In the area where the petiole of the leaf (the small "stem" of the leaf) joins the twig, there's an abscission zone made up of two kinds of tissue – the abscission layer and the protective layer. The protective layer is closest to the twig; the abscission layer is between the protective layer and the petiole. Both of these layers are only a few cells thick. During the growing season this layer of cells is healthy and keeps the leaves attached to the tree. But when the days become shorter, things begin to change in this zone.
>
> The protective layer begins a process called suberization in which suberin, a waxy chemical found in cork, builds up in the cells. This provides an area of tissue that's impervious to the outside elements. The suberized protective layer prevents leaf fall from leaving open wounds on the twigs.
>
> While the protective layer is becoming filled with corky tissue, the abscission layer also transforms. Chemical changes in the tree cause this layer of cells to break down. When the cell walls have broken down sufficiently, the leaf will fall and the protective layer will show on the twig as a leaf scar.

We discussed how the abscission zone changes are triggered by decreasing auxin production. Auxin is a plant hormone which causes the elongation of cells in shoots and is involved in regulating plant growth.

Chapter president Emily Southgate brought up a November 1955 Scientific American article where researchers cut a Coleus leaf blade to see if it would produce an abscission layer in the cut.

Marcescence occurs more often on younger trees or on lower branches of trees. When spring comes, the senesced leaves on a marcescent tree drop quickly, within a two-week period (Heberling and Muzika) .

We debated why plants do this. Is it a byproduct of evolution. Do marcescent plants protect themselves from deer browse, high winter winds, and nutrient loss through this mechanism?

Ed LeGrand countered with a different question, what is the advantage of dropping leaves? The assumption that leaf fall in deciduous plants is the default is worth pondering. [Editors note: Dropping leaves conserves moisture within the trunk and keeps it from drying out. It allows wind to blow through the branches and reduces the area for collecting heavy ice and snow, putting less strain on the tree. Evergreens offset the strain by having flexible branches.]

Marcescent trees are often in the Beech family (Fagaceae), so looking for young trees with dead leaves can be a great way to identify an Oak or Beech in the forest during winter. We enjoyed puzzling over the mystery of marcescence, and we hope these musings inspire you to dig deeper into this interesting plant behavior.

Have any thoughts to share about marcescence or cool photos? Send them our way at piedmont@vnps.org

Heberling, J. Mason, and Rose-Marie Muzika. "Not All Temperate Deciduous Trees Are Leafless in Winter: The Curious Case of Marcescence." Ecosphere, vol. 14, no. 3, 2023, p. e4410. Wiley Online Library, https://doi.org/10.1002/ecs2.4410.

The Green Thumb
https://thegreenthumb20.wordpress.com/tag/abscission/#:~:text=In%20the%20area%20where%20the,protective%20layer%20and%20the%20petiole.

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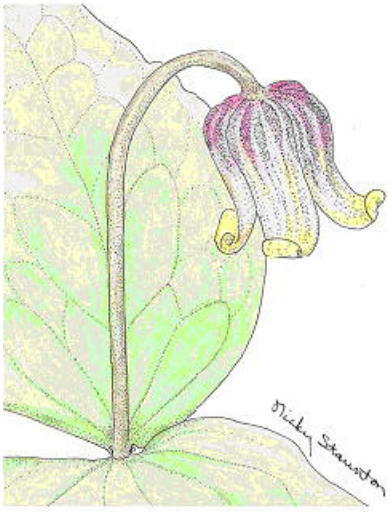

Curlyheads (Clematis ochroleuca)