NEWSLETTER OF THE PIEDMONT CHAPTER OF THE VIRGINIA NATIVE PLANT SOCIETY

# The Leaflet

**Walk at Clifton Institute** text and photos by Brigitte Hartke **SUMMER 2025**

Fabulous floral forays are my favorite thing these days, only now learning what I ought to have learned in my childhood; but we never stop learning, so here I was on March 8 at the Clifton Institute in Warrenton, on a walk led by Institute Director Bert Harris. The walk was enriched by the contributions of several naturalists, including Emily Southgate and Sally Anderson. The native blooms we found were mainly tree blooms, but many things were of interest in the woods.

The Clifton Institute is a special place. Its mission is to inspire a deeper understanding and appreciation of nature, to study the ecology of our region, to restore habitat, and to conserve native biodiversity. It provides environmental education, conducts ecological research, and restores habitat for native plants and animals. Here children, the future generations of ecologists and naturalists, can learn, find inspiration, and develop a lifelong love of Nature.


Smooth Alder

Down by the lake behind the over 200-year-old Clifton farmhouse, we stopped to examine the catkins of a wind pollinated Smooth Alder (*Alnus serrulata*).

Along the trail we encountered a plant that was of great interest to Bert; he thought it might be a Prickly Gooseberry (*Ribes cynosbati*), common in southwest Virginia but not known in this area. He will have to catch it when it blooms before it can be confirmed.

Bob Lee, vice president on the Board of Clifton Institute, told me that there has been a huge number of downed trees and large tree branches in the fall and winter. We came upon an old White Oak (*Quercus alba*), possibly 250 years old, but Emily Southgate pointed out that small trees can be older than much larger trees, and that size is not the only factor in determining age. You really can't tell the age of a tree unless you can count its rings, and that can't be accomplished without felling the tree or taking a core sample. The 4,853-year-old Great Basin Bristlecone Pine, Methuselah, came to mind. It is dwarfed by Redwoods and Sequoias, though they, too, are of a venerable age.

Bert commented that their staff tries to concentrate on 'low-hanging fruit' such as working on eradicating the Autumn Olives (*Elaeagnus umbellata*). The staff spent the whole winter cutting them down, and painting the stubs with herbicide. The Oriental Bittersweet (*Celastrus orbiculatus*) is very discouraging and almost impossible to remove, climbing high into the trees, its berries eaten and spread by foraging birds. Bert also spoke of an entire patch of Yellow Lady's-slippers (*Cypripedium parviflorum*) that had been taken over by Bittersweet. They do not have the staff to do all the removal tasks needed. Multiflora Roses (*Rosa multiflora*), too, are a problem, and in more ways than one: when a patch of (continued on page 2).

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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## Walk with Bert Harris at Clifton Institute (continued)

Multiflora Roses were removed, the next day the deer came and ate the now-exposed Marsh Marigolds (*Caltha palustris*) that had been protected by the roses. Clifton Institute's best method of funding their work has been through grants, but they are really understaffed for the magnitude of the work involved in restoring the property.

I was happy to take the occasion to catch up on my annual donation for this year because I will be taking advantage of their many programs such as guided bird and botany walks. They also have invasive removal and open-access days for Friends of the Clifton Institute (minimum annual donation of $40.). They do not discourage people from coming out to see what they are all about: check out a vernal pool, search for an American Kestrel, bring your children to find the Piedmont Polliwogs.

## Calmes Neck Walk text and photos by Jack Monsted

Saturday, April 12, a group of VNPS members and local residents went on a walk through some of the ridges and ravines of Calmes Neck.

We started by exploring a prodigious patch of Twinleaf (*Jeffersonia diphylla*). While most of the plants had already bloomed and some were cowed by the rainy weather, we appreciated their unique leaf shape. This area was also home to a handful of Dwarf Delphinium (*Delphinium tricorne*), which were just starting to flower.

Then we headed down into a valley between two hills. It was carpeted with Virginia Bluebells (*Mertensia virginica*), quite a magical sight. We learned

about the variation in Bluebell flower coloration – the color of the blooms is determined by the acidity within the flower – blooms with low pH are more blue, while those with higher pH are more pink. This natural color gradation is distinct from the occasional pure white bluebells we saw, which are the result of an uncommon genetic mutation.

We followed the ravine to the Shenandoah River, where we began to see large numbers of both Dutchman's Breeches (*Dicentra culcullaria*) and Squirrel Corn (*D. canadensis*). We examined a few exposed corms of each to find a sure-fire way to differentiate the two similar plants when they are not in bloom: Dutchman's Breeches has a pink corm while squirrel Corn has a yellow one.

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**Calmes Neck Walk** (continued)

Other notable flowering plants in this area were Blue Cohosh (*Caulophyllum thalictroides*) and Yellow Trout Lily (*Erythronium americanum*).

Finally, we ascended a steep hill along a mossy, limestone rock outcrop to examine some species unique to that habitat. We saw Early Saxifrage (*Micranthes virginiensis*), Walking Fern (*Asplenium rhizophyllum*), Wild Columbine (*Aquilegia canadensis*), Wild Ginger (*Asarum canadense*), Cliff Stonecrop (*Sedum glaucophyllum*), Roundleaf Ragwort (*Packera obovata*), Pussytoes (*Antennaria* sp.), Black Cohosh (*Actaea Racemosa*), Spring Beauty (*Claytonia virginica*), and Rue Anemone (*Thalictrum thalictroides*), among others.

Despite the cool, wet weather we had a lovely time and Sally Anderson did a great job guiding us through the astounding plant diversity of this special little part of Virginia.

Mossy rock outcrop featuring Spring Beauty, Wild Columbine, and Rue Anemone

Squirrel Corn

**Thompson Trillium Walk** by Rebecca Symmes

My husband, David Anderson, and I recently moved back to our Fauquier County family property, and one of the first things we did was to join VNPS. My father, Harrison Symmes, was a long-time member, and introduced David and me to native plants many years ago. We are now the stewards of the wonderful gardens he created at our family farm.

We were excited about going on our first VNPS walk on April 25 at Thompson WMA -- known as a "go-to" place for Trilliums. It did NOT disappoint! The weather was cloudy and cool, with the possibility of some drizzle. About a dozen of us, including board members Kristin Zimet and M.K. Ruffner, joined Sally Anderson, native plant expert and past VNPS president, for an exploration of seemingly endless drifts of Trillium Grandiflorum in the understory of the emerging woods. Mostly white, with some lighter and darker pinks, the trilliums were in their full glory. (continued on page 4)

**Thompson Trillium Walk** (continued)




But trilliums were not the only spring ephemerals we saw. Some sharp eyes found a Showy Orchis (*Galearis spectabilis*) about to bloom and then seeing one actually in bloom for the first time was a real thrill! There was also plenty of Wild Ginger and Bloodroot (foliage, no blooms), along with a variety of Violets. The Mayapples (*Podophyllum peltatum*) were almost as abundant as the Trilliums, but only a few were showing flowers. Occasionally someone in our group would sight Jack-in-the-pulpits (*Arisaema triphyllum*), but there weren't many to be found. Then we had a particular treat with the Early Meadow Rue (*Thalictrum dioicum*) in bloom – and Sally pointing out how some were male plants, and others were female (*i.e.* dioecious).



One of the biggest surprises of the day – and a completely new item for a few of us – was Bear Corn (*Conopholis americana)*! According to Wikipedia and Sally, it is a perennnial, non-photosynthesizing plant that is parasitic on the roots of woody plants, especially oaks and beech, with the only part generally seen being the cone-shaped inflorescence. Very interesting and most unusual.

And we found a few examples of the dainty Perfoliate Bellwort (*Uvularia perfoliata*), which was also new to some of us. Although there was some Trout Lily (*Erythronium americanum*) foliage in evidence, we saw none in bloom during our walk. (One of our members had seem some in bloom the previous week.) And while the Virginia (or Eastern) Waterleaf (*Hydrophyllum virginianum*) may have also passed its bloom, the newer leaves showed the white spots characteristic as they mature.

Our delightful, nearly two-hour walk ended in a gentle rain walking uphill, but we all felt enriched by new discoveries as well as renewed acquaintance with old favorites. We are so fortunate to have sites like the Thompson Wildlife Management Area and must do all we can to protect and preserve them.

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Registration notices for Chapter events will be sent out three weeks before the event. Business meetings will conclude (about 3:30-4) with a discussion of a current topic. Members are encouraged to join us.

**Tuesday June 10 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.

**Saturday June 14 10am** **Royal Shenandoah Greenway Walk**
**Warren County**. Master Naturalist Richard Stromberg will lead a walk to see a completely different set of wildflowers than we saw here in April.

**Tuesday July 1 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.

**Saturday July 12 10am** **Appalachian Trail Walk**
**Clarke County.** Walk along the Appalachian Trail from Morgans Mill Road

**Tuesday Aug 5 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.

**Saturday Aug 9 10am** **Ice Mountain Walk**
**Hampshire County, WV.** Visit a unique Nature Conservancy preserve with Sally Anderson and Kristin Zimet.

If you are not receiving regular emails from the VNPS Piedmont Chapter, please contact our Vice President Mitzi Fox at fox57va@gmail.com. We send emails for every walk and for other events. To search for your emails from us, search "PiedmontVNPS@gmail.com" in your email folders including the spam folder.

## **Thompson Trillium Walk** (continued)




## **Plant Behavior and Intelligence: Books to Stretch the Mind** by Edmund LeGrand

Several excellent books have come out recently describing the latest advances in recognizing and understanding plant behavior and intelligence, but not consciousness (yet). Since we are all interested in plants, I guarantee the subject is interesting. For almost all of us, we will come away with a much greater respect for the challenges that individual plants face and respond to.

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## Plant Behavior and Intelligence: Books to Stretch the Mind (continued)

I started with the recent *The Light Eaters: How the Unseen World of Plant Intelligence Offers a New Understanding of Life on Earth* (2024), by Zoe Schlanger. Then I realized I had already read *What a Plant Knows: A Field Guide to the Senses* (2012), by Daniel Chamovitz, which I skimmed again. So I looked on Amazon.com to see what else is out there and got and read three more books: *Planta Sapiens: The New Science of Plant Intelligence* (2022) by Paco Calvo with Natalie Lawrence; *The Revolutionary Genius of Plants: a New Understanding of Plant Intelligence and Behavior* (2024) by Stefano Mancuso; and *The Mind of Plants: Narratives of Vegetal Intelligence* (2021) edited by John Ryan and others.

All of these books were rated at least 4 of 5 stars on Amazon; and I highly recommend any and all, except *The Mind of Plants*, of which only 3 of the 40 essays actually discussed plant behavior and intelligence. Each of the other books discuss the recent findings in numerous cutting-edge biology labs, along with the professional flak the researchers received, especially when they had gotten beyond the scientific establishment's comfort zone. (I might add that the scientific establishment has come a very long way in my lifetime, now granting consciousness [sentience, subjective experiences, wants, motivation, etc.] to non-human animals. Currently, it is pretty much accepted that bees have consciousness, in part since they can be rewarded with sugar. The frontier pushes on!*) The longtime leader of the field, Anthony Trewavas at the University of Edinburgh, has a markedly more expensive textbook, *Plant Behavior & Intelligence* (2015) that I skipped. Of the five books I read, I most preferred philosopher-scientist Paco Calvo's *Planta Sapiens* because I liked the well-reasoned and very understandable philosophical discussions of behavior, intelligence, and consciousness.

If one thinks only of plants as machines having no choices and being compelled to take up water and air and make stems, leaves, flowers, and seeds, then you need not wonder why anyone would call it behavior or why intelligence would even be useful. But each of the books explores the potential information available to plants and how they might capitalize on it if only they could. For instance, if a plant could recognize that a leaf-chewing caterpillar causes a specific pattern of vibration, as opposed to being rustled by the wind, and then it could do something about it, such as making toxic chemicals in other leaves, that would be a good use of intelligence coupled with behavior. Spoiler alert: they can. And if an individual plant could anticipate events and do something about it based on past experiences, this learned behavior would require memory. They can remember and learn. If the information about soil moisture, minerals, and soil consistency acquired by each of myriad root tips could be integrated and transmitted to the leaves, which have to regulate stomata opening and closing for gas exchange (and water loss), that could be quite useful. Probably at least some of this necessary within-plant information is conveyed by cell-to-cell electrical impulses, much like those our heart muscle cells use to coordinate the timing of the muscle contractions. This "phytonervous system" is one of the richest areas of science currently—my belief anyway! And of course, we have heard about plant communication, often via volatile chemicals, with other parts of itself, fungi, related individuals, plant competitors, their predators, and their predators' predators. Lots of strategy is involved, with information sometimes being directed, truthfully or deceitfully, and sometimes simply being overheard. There are lots and lots more that these several books document and entice us to consider!

* For those not content to stop at plants, but also want to explore intelligence and behavior in bacteria, protozoa, and in cells within multicellular organisms, I highly recommend *Wetware: A computer in every living cell* (2009) by Dennis Bray. His discussion of the vast amount of information that every cell constantly processes to reach innumerable decisions is so powerful that he has to emphasize that he is staying away from the dreaded word: consciousness. In contrast, Arthur Reber's 2019 book, *The First Minds: caterpillars, karyotes, & consciousness* takes it further. He argues that all organisms, from bacteria on up, necessarily have consciousness/sentience (i.e., a subjective sense). But he claims that rapid movement, hence rapid decisions, necessitates consciousness—therefore plants do not need it. Paco Calvo in *Planta Sapiens* said he took Reber to task for that slight against plants, (continued on page 7)

## Plant Behavior and Intelligence: Books to Stretch the Mind (continued)

whereupon Reber came around to accept consciousness in plants, too. To me it certainly makes sense that if protozoans are conscious, then consciousness would be retained in evolution to include their descendants. I will take this to a logical conclusion that if protozoans have consciousness, then that it went away when the cells joined together is not likely. That is, if you believe that amoebas have consciousness, why wouldn't you accept that your own white blood cells and all other cells have it also? If this view were accepted, I do not see any new implications for how you should live differently from how you currently do. Same as if it were found that plants were conscious.

## Great North Mountain Walk text and photos by Richard Stromberg

Ten people joined Richard Stromberg to get a spring view of the flora on a Tuscarora Trail section we visited last November (see page 4 of the Winter 2024 *Leaflet* https://vnps.org/piedmont/newsletter/).

Already in the parking lot we were excited to see perfect Solomon's-seal (*Polygonatum biflorum*) plants with flowers dangling under the leaves. Later we would see similarly structured False Solomon's-seal (*Maianthemum racemosum*) plants except the flowers were in a plume at the end of the plants.



The first flower noted as we started to walk was Minniebush (*Rhododendron pilosum*) [Until 2011, this species was known as *Menziesia pilosa*…Based on cladistic analyses of DNA data, Craven (2011) found that *Menziesia* is clustered within *Rhododendron*, so he transferred all species to *Rhododendron*.] The plant and flower look like Blueberry, but Kristen Zimet pointed out that it can be differentiated by the white, short, sharp point at the end of a Minniebush leaf called a mucro.

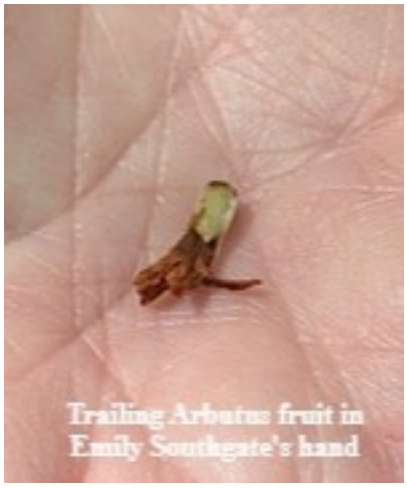

We saw several Mountain Bellworts (*Uvularia puberula*) with fruits, but no flowers. Its leaves are sessile (attached directly by its (continued on page 8)

## Great North Mountain Walk (continued)

base without a stalk) rather than perfoliate (extended at the base to encircle the node, so that the stem apparently passes through it) like the Perfoliate Bellwort pictured on page five.

We noted that Trailing Arbutus (*Epigaea repens*) is a shrub, though barely one inch tall. Ed LeGrand wondered where the woody stems were. They are usually hidden under the leaves, creeping along the ground, as the common and species names imply. Richard and Emily Southgate wondered where the fruits were. We see flowers above the leaves in early spring, but never see fruit. Emily rooted under the leaves and found a berry-like capsule less than a centimeter in diameter.






We saw several populations of Downy Rattlesnake-plantain orchid (*Goodyera pubescens*) with its handsome patterned leaves and some Pink Lady's-slipper (*Cypripedium acaule*) leaves, and, finally, one in bloom. Altogether we saw six Pink Lady's-slipper flowers.



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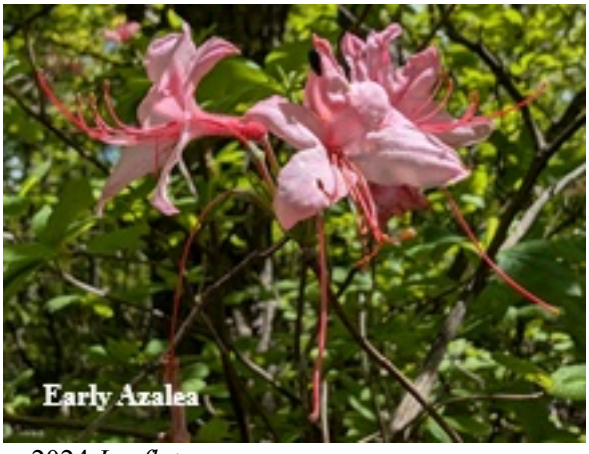
## Great North Mountain Walk (continued)

We stopped at a large pine and decided it was Pitch Pine (*Pinus rigida*) because of the needles sprouting directly from the trunk. Emily said it is the only pine that does this. Sally Anderson said the term for this is "epicormic." We had this discussion on the November walk too. Later we saw Table-mountain Pine (*Pinus pungens*) distinguished by sharp spines on the cones.


Pitch Pine


Table Mountain Pine

We saw several Mountain Laurel bushes (*Kalmia latifolia*) in bloom, and near the end of the climb, an Azalea was blooming. The perfume in the air said Early Azalea (*Rhododendron prinophyllum*), and we confirmed it by seeing that the underside of the leaves was completely hairy. The similar Wild Azalea aka Pinxterflower (*R. periclymenoides*) has hairs only on the veins.


Early Azalea


Mountain Laurel

Then we came to area that had burned a week before our walk last November. (see page 6 of the Winter 2024 *Leaflet* https://vnps.org/piedmont/newsletter/). Green plants were sprouting from the blackened duff, especially a lot of Whorled Loosestrife (*Lysimachia quadrifolia*).

We turned around after enjoying the spectacular view from Eagle Rock. The one mile, 450-foot climb had taken one and a half hours with all the stopping and discussing. The walk downhill back to the cars took only a half hour.

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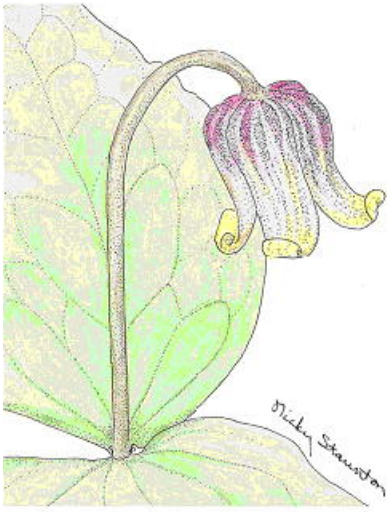

Curlyheads (Clematis ochroleuca)