Sempervirens

Spring 2020 | The Quarterly of the Virginia Native Plant Society

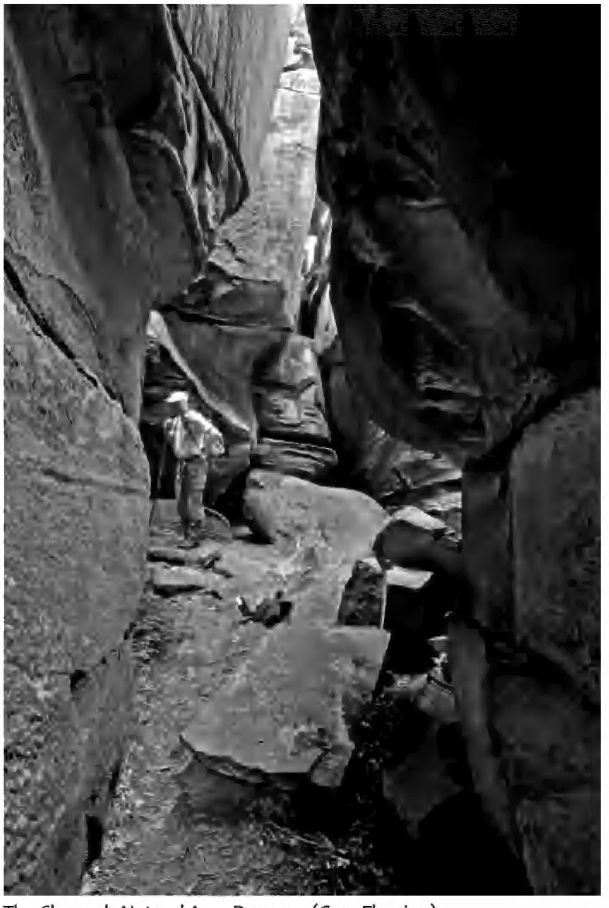
Sept. 25-27
Annual Meeting far afield in SW Virginia

Article by Nancy Vehrs, Society President

This year we go far afield to Southwest Virginia and the charming town of Abingdon for our annual meeting September 25-27. Located at Exit 14 off Interstate 81, the Southwest Virginia Cultural Arts Center will be our venue. Formerly known as Heartwood, this center offers a unique setting and opportunities to purchase local handicrafts. We also plan to have a local band to entertain us.

Geographically Abingdon is found in the Blue Ridge Highlands. Nearby natural areas offer a diversity of botanic species and stunning scenery. Virginia's highest peak, Mt. Rogers at 5,729 feet, lies within the nearby Mt. Rogers National Recreation Area, which adjoins Grayson Highlands State Park. Also in that area is Whitetop Mountain and such treasures as the Elk Garden Trail.

Southwest Virginia Cultural Arts Center Silo (Nancy Vehrs)



The Channels Natural Area Preserve (Gary Fleming)

A number of natural area preserves are in the general vicinity. These include The Channels, The Pinnacles, and Cleveland Barrens. The Virginia Creeper Trail, a 34-mile rail-to-recreation trail, begins in Abingdon and follows a former railroad bed through Damascus and up to Whitetop Station. Abingdon itself is a walkable town and has many trails.

Because so many participants will be traveling from the north, Sunday's field trips may include a range of options northward along the I-81 corridor. Hungry Mother State Park, Saltville, New River Trail State Park, and Natural Bridge State Park all offer botanical interest.

Abingdon is renowned for its Barter Theatre so you may want to plan to extend your stay a day or two before or after the meeting. You may enjoy exploring The Crooked Road, Virginia's Music Trail, or visiting some state parks even farther west such as Breaks Interstate Park, on the border with Kentucky, or Natural Tunnel State Park. Plan now to experience the hospitality of Southwest Virginia. ❖

From the President, Nancy Vehrs

Society mission important to know

When I received a draft of our wildflower of the year brochure with its photographic and artistic images of Wild Geranium, I was struck by its beauty. I perused the text and learned more about this exquisite spring wildflower and then I read some of our boilerplate text about conservation and digging from the wild. "Some of that can be struck," I thought. Everyone should already know now not to buy plants dug from the wild, right? When I raised this with my fellow proofreaders, I realized how naïve I was to think that this conservation message is understood by everyone in our audience.

Have you read our conservation statement on our website? (https://vnps.org/position-on-conservation/) It reads, "The Virginia Native Plant Society is dedicated to the protection and preservation of the native plants of Virginia and their habitats, in order to sustain for generations to come the integrity of the Commonwealth's rich natural heritage of ecosystems and biodiversity for purposes of enjoyment, enlightenment, sustainable use, and our own very survival. To this end, we advocate and follow practices that will conserve our natural endowment, and we discourage and combat practices that will endanger or destroy it. We are committed to do all we can to slow the accelerating conversion of natural landscape to a built-and-planted landscape and to reduce its damage to natural ecosystems." We encapsulate that important statement into our short motto, "*Conserving Wild Flowers and Wild Places*."

The VNPS is now 38 years old. In its early years, when it was founded as the Virginia Wildflower Preservation Society, "plant rescues" were a major activity. Land development was rampant in Northern Virginia, where the society originated, and members wanted to save the flowers from the bulldozer. As a society, we try to influence decisionmakers by encouraging them to preserve sensitive ecosystems. Plant rescues are truly a last resort with decisions made by chapter leaders on a case-by-case basis.

While we are primarily a *conservation* organization, we recognize the value of planting natives on our own plots of earth and built-up spaces such as schools and places of worship. We recognize the interrelationships between plants, insects, birds, and other wildlife. We can create habitat where it ceased to exist.

On our website under "Growing Natives," we emphasize the use of reputable nurseries that source their native plants from division of nursery stock, responsibly collected seeds, plugs and liners. VNPS does not tolerate selling plants that are dug from the wild. These actions severely damage natural habitat and deplete plants in their natural environment. We keep a list of reputable native plant suppliers online and encourage our members to use it. Only nurseries that specialize in natives are included. If you know of new nurseries to be added, please let us know. Laura Beaty, our Horticulture Chair, will investigate.

As we talk about native plant gardening, I must share some very good news: our *Plant Virginia Natives* Fundraiser has raised more than $32,000. Thank you all! This funding will be used as seed money for new regional native plant guides for three Virginia regions: Northern Ridge and Valley, Southwest, and Southern Piedmont. In addition, some of the money can be used for reprints for current regional guides.

The campaign has not closed, and we welcome further contributions. Virginia Witmer of the Virginia Department of Environmental Management's Coastal Zone Management program has been the driving force for the statewide efforts to date and secured funding through National Oceanic and Atmospheric Administration (NOAA) grants. Unfortunately, these grants have been available only to regions on the Coastal Plain. Carol Heiser of the Virginia Department of Game and Inland Fisheries has been a partner, and Dot Field of the Department of Conservation and Recreation's Natural Heritage Division has been involved since the beginning 10 years ago. VNPS Upper James River Chapter President Jan Smith is leading the effort for the Northern Ridge and Valley Region. Nicole Hersch of the New River Valley Regional Commission is seeking additional grant funding as she manages the Southwest Region, and Master Naturalist Kathy Fell is heading up the Southern Piedmont Region. The current Piedmont Region, centered around the Charlottesville area, will be renamed the Northern Piedmont Region. For more information about the Virginia Native Plant Marketing Partnership, see www.plantvirginianatives.org.

Our annual workshop tackles the subject of climate change. I hope to see many of you in Charlottesville on March 14. ❖

Blue Ridge Parkway field trip offers wide array of ecosystems and native plants

During the week of May 10-17 we will be offering six days of plant tours and cultural history along or near the Blue Ridge Parkway in Virginia. With elevations from 600 to 4,000 feet, there will be an array of ecosystems to see, including high mountain wetlands, prairie-glade communities, rugged mountain terrain, table mountain pine communities, oak-hickory forests, and mountain stream communities. The diversity of the Parkway with its pastoral settings and its magnificent vistas will make a memorable trip. The Flame Azalea (three different shades) is usually in full bloom at this time of year. It is truly a photographer's paradise.

Flame Azalea comes in three different shades. (Sally Anderson)

Lodging during the week will be at Peaks of Otter (three nights) and Hotel Floyd (four nights). Lodging, breakfast and lunch, and a donation will be included in the trip price of about $1,200. Dinners will be on your own.

The Blue Ridge Parkway is aflame with color in the spring. (Sally Anderson)

From Peaks of Otter, we will explore sites such as Trail of the Trees on the James River, Apple Orchard overlook that, at 3,950 feet, could take us back to early spring, and the area around the Peaks.

Further south we may visit an array of habitats along the Parkway and several historic sites. The plants that we might encounter should include Flame Azalea, Catawba Rhododendron, Indian Paintbrush, Pirate Bush, Pink Lady's-slipper, Yellow Lady's-slipper, Three-toothed Cinquefoil, Appalachian Fir Club-moss, Balsam Ragwort, Fetterbush, and Bear Oak.

Off the Parkway, we will visit the Buffalo Mountain Natural Area Preserve and perhaps other preserves run by the state's Natural Heritage Program. While our pace will be slow, please be prepared to walk up to four miles per day.

Trip organizers are Sally Anderson and Butch Kelly. Sally is a former VNPS president and frequent Piedmont Chapter field trip leader. Butch, also a former Society president, is a retired teacher and has led many trips for the Blue Ridge Wildflower Society. Butch was also a National Park Ranger on the Blue Ridge Parkway for 13 seasons. Additional guides will be taking us to some of these special places.

A $200 deposit will save your space. Full payment will be due by April 13. There are three ways to register: at www.vnps.org; send a check to VNPS, 400 Blanch Farm Lane #2, Boyce VA 22620; or contact Karen at the VNPS office at 540-837-1600 (mornings).❖

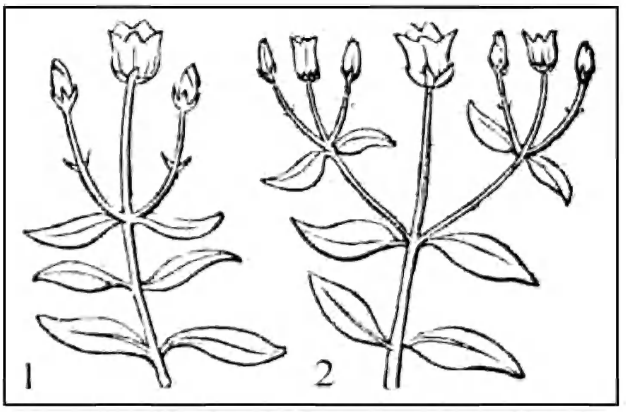
You will find this year's Wildflower of the Year brochure inserted in this newsletter. We think you will enjoy learning more about Wild Geranium, *Geranium maculatum*. The text and photographs, by Society Botany Chair John Hayden, are beautifully complemented by Betty Gatewood's color illustration and Nicky Staunton's pen and ink drawings. If you need more copies of the brochure, email the Society office at vnps.org@gmail.com and we will be happy to get some to you.

Wild Geranium

Wildflower of the Year—Cymes, not Corymbs!

Article by W. John Hayden, Botany Chair

I hit a snag while composing the text for this year's wildflower of the year brochure on Wild Geranium, *Geranium maculatum*. The problem concerned the proper descriptive term for its inflorescence, i.e., the pattern in which its flowers are grouped. In more than one source, I read that, for the family Geraniaceae, inflorescences are cymes (Figures 1 and 2), but those same sources indicated that inflorescences of *Geranium maculatum* are corymbs (Figure 4). That conflict caused me to scratch my head because cymes and corymbs are fundamentally different kinds of inflorescences.



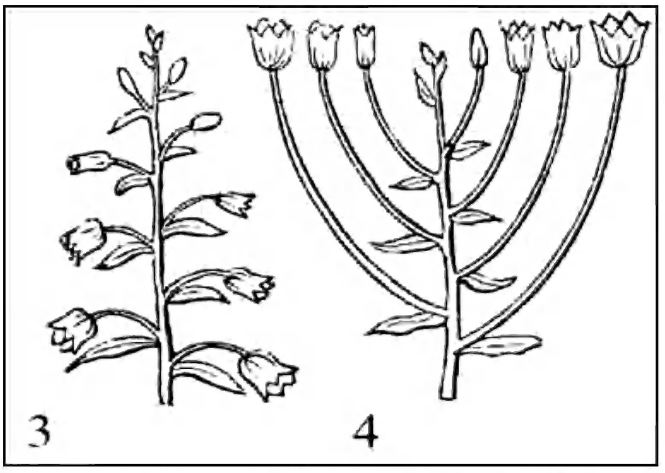
Figures 1 and 2. 1. Simple cyme (dichasium), the first-to-open flower terminates this determinate inflorescence; one pair of flowers form below the terminal flower. 2. Compound cyme (dichasium), a determinate inflorescence in which the cyme pattern of flower formation repeats below the terminal flower of each branch. Images from Gray (1868).

If the Geranium family is characterized by cymes, how could *Geranium maculatum* have corymbs? Eventually, I decided that, from a morphological and phylogenetic perspective, cymes made more sense than corymbs. Consequently, the word "corymb" does not appear in this year's WOY brochure. But I still worried that someone might challenge me on this detail. I could imagine someone suggesting that I could have, or should have, consulted the *Flora of Virginia* (Weakley et al. 2012), or *Gray's Manual* (Fernald 1950), more carefully, where the inflorescence of *Geranium maculatum* is clearly described as "terminal corymbs." This article explains why I opted to contradict these respected sources.

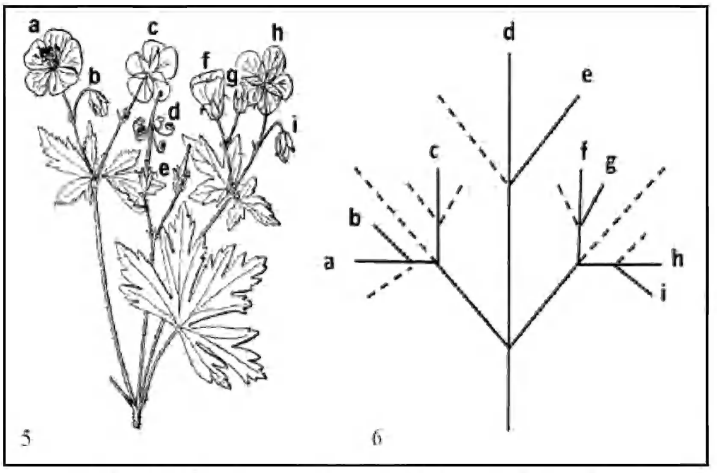
To a morphologist, the corymb versus cyme issue is a big deal. Corymbs and racemes (Figures 3 and 4) are indeterminate inflorescences, i.e., they have at least some potential for protracted extension growth; older flowers develop at the base of the inflorescence, younger flowers (or flower buds) are located at the tip, where a meristem provides the potential for continued growth. In contrast, cymes (Figures 1 and 2) are determinate inflorescences; the first flower to develop is located at the stem tip and subsequent flowers grow from lateral buds on stem segments below the terminal flower. To some extent, the contrast is a matter of developmental sequence, bottom-up (indeterminate racemes and corymbs) versus top-down (determinate cymes). All branches of a corymb are lateral to a single central axis (stem); cymes branch repeatedly, forming complex branch patterns. Note also that the sequence of flower opening differs, as suggested by the relative sizes of open flowers and flower buds in Figures 2 and 4.

Corymbs are especially common in Brassicace and some common, non-native, members of this family provide good examples: Shepherd's Purse (*Capsella bursa-pastoris*), Rockets (*Barbarea* spp.), and Garlic Mustard (*Alliaria petiolata*), to mention just a few. Because of the progressive elongation of pedicels during flower development, the oldest flowers of a flat-topped corymb are toward the outside of the cluster, and the youngest at the center.

Cymes and cyme-derived inflorescences are also relatively common. Some real examples that closely match textbook diagrams can be found, for example, in species of *Stellaria* or *Silene* (Caryophyllaceae). Often, however, the fully developed, idealized, cyme pattern is modified in various ways. Bracteal leaves may be foliose, rendering subtle the distinction between inflorescence and vegetative growth. Or the relative lengths of flower pedicels and subtending stem segments may be greatly prolonged, or severely contracted, or altogether absent, again, obscuring the fundamental cyme pattern. Trickier still, is the elimination of some branch stem segments or some pedicels (and, hence, loss of some flowers) from the theoretical, fully developed, cyme pattern. It is this latter variation of cyme structure that



Figures 3 and 4. 3. Raceme, an indeterminate inflorescence, oldest flowers or fruits at the base, youngest flowers or flower buds at the tip, pedicels of approximately equal length. 4. Corymb, an indeterminate inflorescence similar to a raceme, but with pedicels of markedly different lengths resulting in a relatively flat-topped pattern of flowers and flower buds. Images from Gray (1868).



Figures 5 and 6. 5. *Geranium maculatum*, Wild Geranium, flowering stem; image from Britton & Brown (1913). 6. Branching pattern of a compound cyme corresponding to the inflorescence in Fig. 5; dotted lines depict elements of the ideal, fully developed cyme that are absent in this particular example; letters correspond to the letters on flowers and fruits in Fig. 5; diagram by W. J. Hayden.

is at the heart of the corymb versus cyme conflict in *Geranium maculatum*.

To my eye, the inflorescence of *Geranium maculatum* is a cyme with just a few orders of branching, but with a significant fraction of potential branch stem segments and flower-bearing pedicels absent. Consider the images compared in Figures 5 and 6. Figure 5 is a rendition of the flowering portion of the plant. The diagram in Figure 6 represents my interpretation of the inflorescence depicted in Figure 5: a central, simple, cyme flanked by two compound cymes, but all three with some cyme elements missing, the missing elements represented via dotted lines. To support this interpretation, I have arbitrarily labelled the flowers in Figure 5 with letters that are matched with the solid line segments of the cyme depicted in Figure 6. I should hasten to add that perfunctory examination of a few herbarium specimens and inspection of published illustrations of flowering *Geranium maculatum* indicate that these plants do not always conform strictly with the pattern illustrated in Figure 5 and diagrammed in Figure 6; nevertheless, all conform, generally, with a group of cymes in which a significant fraction of stem segments and pedicels are absent—just not the same exact pattern in each case. *Geranium maculatum* has cyme-derived inflorescences, not corymbs!

Is cyme versus corymb a big deal? I think so! Detailed and accurate description of form is at the core of taxonomy; for an organism to be "known to science" means, minimally, that the entity has a name and a description that distinguishes it from all other life forms. Morphological terms constitute this first step in establishing the essence of a species. Beyond establishing taxonomic identity, patterns of shared morphological characters among organisms are the foundation of biological classification, i.e., the grouping of species into genera, genera into families, families into orders, etc. Morphology, of course, is now supplemented with chemical characters for classification. Nevertheless, descriptive terminology remains essential to the understanding of biodiversity. We need to get it right. ❖

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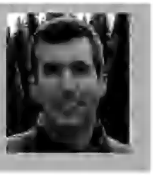
Managing access to protect biodiversity at Buffalo Mountain

Stone steps on the Ridge Trail. (Z. McGee)

Buffalo Mountain, located within the southern Blue Ridge of Floyd County, Virginia, is a regionally iconic and nationally significant ecological treasure. This 1,146-acre state natural area preserve harbors nine natural communities, 15 rare plants, and three rare animals. Two state and globally rare natural communities—a Southern Blue Ridge High-Elevation Mafic Barren (G1/S1) and two types of High-Elevation Outcrop Barrens (G1/S1)—blanket the nearly-4,000 foot exposed summit. These communities feature imperiled rarities including Mountain Sandwort (*Minuartia groenlandica*) and Three-toothed Cinquefoil (*Sibbaldia tridentata*).

From Your Natural Heritage Program

By Ryan Klopf



In addition to providing habitat for multiple rare plants and animals, humans have also long been drawn to the beauty of Buffalo Mountain. The view from the summit is certainly spectacular! On clear days, both Sharp Top Mountain, 60 miles to the northeast, and Pilot Mountain, 30 miles to the south, are visible. Prior to state acquisition and dedication into Virginia's Natural Area Preserve System managed by the Department of Conservation and Recreation's Natural Heritage Program (DCR), access to the summit was via a steep unmaintained woods road originally constructed to access a fire lookout tower. A few years following acquisition by DCR in 1996, this old forest road was replaced with a one-mile hiking trail.

Three-toothed Cinquefoil (*Sibbaldia tridentata*) – an imperiled plant in Virginia – grows on the summit of Buffalo Mountain. (Gary Fleming)

Over time, DCR's natural area stewards observed and documented ecological degradation resulting from increased visitation at Buffalo Mountain. Atop the open summit, more and more visitors were spreading out to explore while enjoying the views. This intensive foot traffic injured rare plants and compacted and eroded fragile soils, reducing plant cover within rare natural communities. In addition, hikers descending from the summit increasingly used shortcuts to the parking area, creating multiple social trails that cut off existing trail switchbacks or that utilized sections of the old closed firetower road. Further, social trails had formed leading from the preserve parking area into the surrounding forest due to many visitors heeding "nature's call." This caused soil erosion and facilitated invasive plant colonization by Japanese stilt-grass and other non-native species. To address these multiple threats to the biodiversity and ecological integrity of the preserve, DCR's Natural Heritage staff developed a plan in consultation with conservation partners including the National Park Service and the Appalachian Trail Conservancy.

First, DCR staff and volunteers constructed a wooden privacy surround at the parking area which housed a contracted port-a-jon. This immediately reduced the social trails spreading out from the parking lot. Concurrently, efforts to control Japanese stilt-grass in these areas were intensified. Second, social trails cutting off switchbacks on the existing summit trail were blocked using steel cable barriers and brush. Third, a new "Ridge Trail" was constructed from the summit to the parking area, providing visitors with

a means of returning to their vehicles along a more direct, downhill route. DCR's Mountain Region Operations Steward, Wes Paulos, led the design and construction of this trail project – with assistance from volunteers and other DCR staff. The Ridge Trail was built according to exacting specifications of sustainable slope and grade, and features approximately 80 stone and oak steps in its steepest sections.

A final project phase currently underway is the construction of a Barrens Loop Trail that will focus public access to the fragile summit within specific areas using both hard (blocked and obfuscated social trails) and soft (nylon ropes strung between short steel posts) barriers. This phase will include multiple new interpretive panels to provide information about the natural history of Buffalo Mountain as well as the rationale for the new access pattern.

Summit soils and vegetation are influenced by climate and geology. High, cool, mountains can serve as refugia for certain species during changing climate. (I. Wilson)

To inform similar management actions at other fragile summit locations, Natural Heritage staff will monitor rates of revegetation within fenced-off, denuded areas of the Buffalo Mountain summit. Monitoring began in early 2019 when Virginia Tech students, using an aerial drone, developed a high-resolution vegetation map of the summit. A standard protocol for replicating this map will be used after completion of the Barrens Loop Trail in 2020.

With focused efforts, protecting biodiversity can be compatible with providing recreational use opportunities even at fragile sites like Buffalo Mountain. Doing so may be necessary if natural areas stewards wish to cultivate an appreciation and respect for our natural heritage. The lessons learned by DCR stewards in their efforts to balance sustainable public access with rare species conservation are being shared with partner agencies and organizations in order to better protect other popular fragile montane habitats facing similar challenges. ❖

Ryan Klopf is the Virginia Department of Conservation and Recreation's Mountain Region Natural Areas Steward.

White oak steps leading out of the parking area on the Ridge Trail. (Z. McGee)

VIRGINIA NATIVE PLANT SOCIETY

Sempervirens (ISSN 1085-9632) is the quarterly newsletter of the Virginia Native Plant Society, Blandy Experimental Farm, 400 Blandy Farm Lane, Unit 2, Boyce, Va. 22620, 540-837-1600, info@vnps.org. Nancy Vehrs, President; Nancy Sorrells, Editor; Karen York, Office Manager. Original material in *Sempervirens* may be reprinted if credit is given to the Virginia Native Plant Society, to *Sempervirens*, and to the author of the material, if named. Readers are invited to send letters, news items, and queries for consideration. E-mail items to Nancy Sorrells at lotswife@comcast.net.

Next submission deadline: April 15, 2020

Difficult Creek, difficult management choices

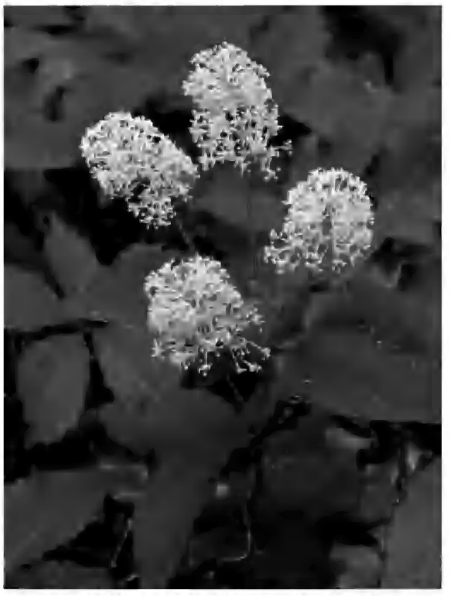
Virginia is blessed with many botanical wonderlands; see Chapter 4 of the Flora of Virginia (Weakley et al. 2012) for thumbnail sketches describing 50 of these special places. One such treasure, Difficult Creek Natural Area Preserve, is home to a thriving population of the 2019 VNPS Wildflower of the year, *Ceanothus americanus* (New Jersey Tea). Paradoxically, however, our featured wildflower of last year is inextricably linked to a difficult conservation management decision.

Difficult Creek Natural Area Preserve is located in Halifax County, between the Dan and Roanoke Rivers, a few miles northwest of their now inundated confluence, known as Buggs Island Lake (Kerr Reservoir). In pre-settlement days, it is believed that the natural plant community in this part of Virginia was open, fire-adapted, savanna, consisting of scattered Shortleaf Pines, Oaks, and Hickories, interspersed with a diverse assemblage of grasses and other herbaceous plants. When Alton Harvill and his wife, Barbara, botanized the area in the early 1970s, a long tradition of fire suppression had certainly altered to some degree the original nature of the vegetation; nevertheless, they were able to document many rare plant species from the area. A few years later, circa 1980, a new force of change entered the scene: much of this botanical treasure was converted to Loblolly Pine plantation. As the canopy of Loblollies closed, the original assemblage of herbaceous species that thrive in sunny conditions became restricted to smaller and smaller patches. In June of 1993, Chris Ludwig of the Division of Natural Heritage first visited the site; he was able to relocate many of the rare plants found by the Harvills, but only along a power line right-of-way and on roadsides, places where periodic mowing kept shade-casting woody plants in check. But that was enough to demonstrate the site's potential for conservation of rare plants. Over time, 819 acres of land encompassing the power line right-of-way and adjoining parcels was acquired and new management practices, primarily selective cutting of trees and periodic controlled burns, were instituted to restore the pre-settlement savanna habitat.

How special is the Difficult Creek preserve? Here grow: Tall Barbara's Buttons (*Marshallia legrandii*), known from one other extant population in nearby Mecklenburg County (and two other, now extirpated, populations); Carolina Thistle (*Cirsium carolinianum*), the only other known Virginia population of which is in Franklin County; and American Ipecac (*Gillenia stipulata*), a rare outlier from its range further west—to name just a few noteworthy plant species.

The Difficult Creek Natural Area Preserve also supports a vigorous population of New Jersey Tea (*Ceanothus americana*) which, though relatively common in Virginia, thrives at this site because of the periodic controlled burns that constitute a core feature of the current management regime. Fire consumes above-ground shoots of *Ceanothus*, but this is a fire-adapted plant; well-established plants rebound quickly from resources stored in stout roots. Fire benefits such plants by removing saplings of trees that, if permitted to grow, would shade out the sun-loving herbs. In this habitat, burning is good, not just for New Jersey Tea, but also for other herbaceous species of the region, many of which are both rare and fire-adapted.

But, are controlled burns beneficial for **all** the biodiversity



New Jersey Tea, *Ceanothus americanus* (John Hayden)

deserving of protection at Difficult Creek? Mottled Duskywing butterflies (*Erynnis martialis*) present a complicating factor. These butterflies were discovered at Difficult Creek in 2008 by Virginia Natural Heritage zoologist, Anne Chazal. The Mottled Duskywing is a type of Skipper, and it is completely dependent on *Ceanothus* species as its larval food plant. Notably, this species of Duskywing is in decline throughout most of its historic range in eastern North America.

Here is the problem: Controlled burns, necessary to maintain healthy populations of New Jersey Tea and the other rare plants of Difficult Creek, will inevitably have some adverse effect on populations of Mottled Duskywings. The problem is that, as fall approaches, second brood Mottled Duskywing caterpillars, having eaten their fill of New Jersey Tea leaves, form weak cocoons of silk-bound, folded, leaves; these cocoons are soon shed from the plant with the rest of its leaves and become part of the

(Continued next page)

Mottled Duskywing, *Erynnis martialis*, on New Jersey Tea (Mike Reese, wisconsinbutterflies.org)

(Continued from page 8)

leaf litter where the fully-grown caterpillars overwinter. Pupation and metamorphosis to adult Mottled Duskywing butterflies occur in the spring. Controlled burns for rare plants, generally scheduled during the dormant season, will inevitably incinerate the cocooned caterpillars. As a matter of fact, fire at just about any time of year can be a catastrophe for this Duskywing; fire during the growing season would remove eggs and actively growing caterpillars. Fire would also temporarily remove oviposition sites. The irony is that Mottled Duskywings need fire for their only food plants, *Ceanothus americanus*, to thrive, but those same fires inevitably reduce the population of this already rare butterfly.

What is the responsible land manager to do? The management question becomes, not whether to burn or not burn, but how best to manage fire in this critical habitat. The solution is to treat the Difficult Creek preserve as a series of patches, each to be burned in different years. The idea is that, yes, some rare Mottled Duskywing pupae will go up in smoke with every fire, but if only a portion of the reserve is burned, only a portion of the butterfly population will be eliminated in any given year. Every year, unburned portions of the reserve will produce new generations of Duskywings, some of which will disperse into recently burned regions where vigorously regenerated shoots rising from the unharmed roots of New Jersey Tea will beckon egg-laying females. The idea is to sacrifice some portion of the Mottled Duskywing population at the preserve in order to maintain the habitat at large, thus ensuring the long-term survival of the butterflies and their required larval food plant. In the big picture, small controlled burns make sense. Nevertheless, it must be difficult to strike a match knowing that the ensuing fire will destroy some portion of this rare butterfly's population.

Why, one might ask, are Mottled Duskywings rare when their host food plant, New Jersey Tea, is relatively common? Four factors have been implicated in the decline of Mottled Duskywings: 1) competition for *Ceanothus* foliage by voracious deer; 2) fire, which at any season, will exact a toll on population size; 3) lethal sprays intended to control Gypsy Moths; and 4) decline of open grassland and savanna habitats. Of these factors, the fourth may be most critical.

Mottled Duskywings not only require New Jersey Tea, but they require their only food plant to be in or adjacent to open, not densely forested, habitat. This requirement springs from the butterfly's mating strategy. Male Mottled Duskywings are "hilltoppers;" during the mating season, they seek high points like open hilltops, or perhaps an isolated shrub or tree, from which to watch for the approach of females. Evidently, this innate mating behavior does not work well in forested areas where New Jersey Tea could well be present. Certainly, there are multiple factors involved, but the Mottled Duskywing's requirement for a rare open habitat that also supports New Jersey Tea places a stringent limit on the habitats where it can thrive.

At Difficult Creek, fire is essential. Fire helps New Jersey Tea to thrive, and vigorous New Jersey Tea plants feed the Mottled Duskywings, and fire keeps the habitat sufficiently open so that Mottled Duskywings can mate efficiently. But the amount of fire needs to be carefully controlled, lest this one essential environmental factor, now in the hands of human land managers, inadvertently wipes out these rare and declining Skippers. (Johnny Townsend and Chris Ludwig provided information useful in preparation of this article.)❖

—John Hayden, Botany Chair

Tallamy discusses new book, *Nature's Best Hope*

The Prince William Wildflower Society recently hosted a talk by Dr. Doug Tallamy, author of *Bringing Nature Home*, published in 2007, and now *Nature's Best Hope: A New Approach to Conservation that Starts in Your Yard*. With a capacity crowd that left many people unable to attend, B.J. Lecrone of Loudoun Wildlife Conservancy volunteered to livestream the February 23 event on YouTube. The recording is now available online at https://youtu.be/EuNyc4Itni0. See our blog for Sue Dingwell's review of the book as well. Remember, WE are nature's best hope.

An interview with Instagram administrator Ashley Moulton

Thanks to the initiative of Pocahontas Chapter Member Ashley Moulton, the VNPS now has a presence on Instagram, **@virginianativeplants.** Ashley volunteered to administer the account and away she went. Society president Nancy Vehrs recently had a conversation with her. . . .

Nancy: Ashley, tell us a little about your childhood and how you developed an interest in plants.

Ashley: *Oddly enough, I like to think that my curiosity for plants probably stemmed from staring out of the car window while growing up in the suburbs of D.C. I think I was very fascinated by the visual differences in landscapes I encountered during family vacations, including to the Eastern Shore and to my parent's hometowns in Iowa in comparison to what I saw from the back seat of my parents' car in Northern Virginia. I think I really wanted to understand what factors drove these places to look so different.*

Nancy: You're an alumna of Virginia Commonwealth University, both undergrad and grad. What did you study?

Ashley: *I thought I was going to go to art school initially at VCU, but ended up studying environmental science with a minor in urban planning. One of the most exciting adventures during my undergraduate degree was when I jumped head first into the ecological field while conducting an undergraduate research study at the Rice Rivers Center. I studied wetland seed bank dynamics in response to saltwater intrusion projected with sea level rise that I mimicked at the greenhouse at VCU. I then was persuaded by faculty to come back and complete a master's degree in biology at the Coastal Plant Ecology Lab where I experimented with nutrient dynamics to better understand how a coastal swale grassland community responds to nutrient limitations that occur on Hog Island, a barrier island off the coast of Virginia. This is now part of an annually recurring long term study.*

[During my graduate studies,] I worked at Chesterfield County's Extension office, which was a total juggling act that I did not realize I was getting into at the time. While working here I realized that I had a passion for Virginia native plant outreach, which was at the expense of the Master Gardener group that I coordinated, but thankfully they were very eager to learn about these very special plants.

Nancy: You recently returned from a trip to Costa Rica. What botanical treasures did you experience there?

Ashley: *Botanizing in another country always seems to be a very special and visually overwhelming experience. Most visually interesting was the Taquilla Palm (*Carludovica palmata*), which actually is not a true palm. Besides being the sole plant traditionally used to make Panama Hats in Ecuador, it has a unique reproductive structure that caught my eye, which has been described somewhat accurately by "if corn and ramen had a baby" by others on the internet. Also of note was a member of the Euphorbiaceae family called the Manchineel Tree (*Hippomane mancinella*) that grew alongside a popular beach within the famous Manual Antonino National Park with "do not touch, toxic" signs hung around its trunk. Our tour guide warned us that if you stand underneath the tree during rain it will cause blistering of the skin from mere contact with the white milky sap that causes a strong allergic contact dermatitis.*

Nancy: At your young age, you have already worked as Master Gardener volunteer coordinator and environmental educator for Chesterfield County Extension and pursued professional wetland and stream restoration work in the private sector. What have you learned, and what's next?

Ashley Moulton in the wild.

Ashley: *I learned that Virginians want to do their part to help wildlife and pollinators at their home and are really excited about incorporating native plants into their homes and backyards, but do not always know how to get started. Thankfully some really great resources are now available to help thanks to partnerships VNPS has with state agencies in developing regional guides.*

What's next is a really good question. I would love to continue my work in the restoration field. I think opportunities that improve the science of quality ecological restoration work here in Virginia or help facilitate more restoration statewide really appeal to me. Scale doesn't matter. Whether it is a pollinator/rain garden or other type of vegetated best management practice or on a much larger scale affecting the successional trajectory of acres of forest and wetlands in the state, I want to make sure people have the best resources to make sound ecological decisions. We will see what the future has in store for me.

Nancy: Thank you so much for taking on this new social media venture for the VNPS! We look forward to having many more Instagram followers. And good luck to you professionally. ❖

Elizabeth Rawlinson: Pioneering Plant Lady

Almost a century ago, a bright, intelligent woman named Elizabeth Seymour Rawlinson roamed the Augusta Country countryside looking for plants and writing about her observations of the natural world. She was a well-known horticulturalist and writer and I would also categorize her as an early Shenandoah Valley environmentalist. I have been interested in Elizabeth for a number of years and was recently asked by the Augusta Garden Club to do a presentation about her as part of the club's centennial celebration, so I have been delving into her story in greater detail.

Let me tell you a little more about her and put out a plea for any information that you might have as well that could help me make her story "blossom" so to speak. Elizabeth, born in 1901, was the only child of Lionel B. and Anne Cochran Rawlinson. Her mother was from Folly Farm, a 19th-century estate just south of Staunton. Her father was a British aristocrat from England.

Like her mother, Elizabeth was a member of the Augusta Garden Club and the two women used their family home Herringstone as a horticultural experimental station. Much of their work can still be seen today in the trees, shrubs, and flowers that continue to grow there. Elizabeth received her formal education at Stuart Hall and at an all-girls preparatory school called St. Hilda's in Charles Town, W.Va. Where she received her horticultural and botanical training is uncertain. What is certain is that she was more than an amateur in the field. In the 1930s her writings were given top billing as a regular columnist in the *New York Times*, and she had articles in *House and Garden* and other horticultural journals. She was the editor of *Garden Gossip*, a newsletter published jointly by the Garden Club of Virginia and the Virginia Federation of Garden Clubs. And she apparently lectured widely on botanical topics. Her will describes camera equipment, a projector, and a screen.

But there was another most intriguing side of her life that I have just started to peer into. She apparently explored many of the natural areas in Augusta, Nelson, Highland, and Rockingham as well as other places in Virginia. Not only did she explore and write about these special areas with their unique plants, but she collected plant specimens, preserving and documenting them like a trained professional. Where she received training for that and who she corresponded with are all still shrouded in mystery.

Elizabeth Rawlinson's life was tragically cut short in 1942 by cancer—a long and very painful illness according to all accounts—during which she still soldiered on with her botanizing and writing until the very end.

Her will, recorded in the Staunton courthouse, mentions a number of items from her garden and horticultural exploits that now appear to be lost or mostly lost to time. The will mentions a collection of Kodachrome color slides, which no one can find, as well as plant collecting equipment, and, to Robert C. Moncure she bequeathed "the black books in which I kept my gardening records." A 1946 newspaper article notes that "Among her bequests was a remarkable collection of wild flowers, dried and mounted, the complete plant, including roots and blossom, with descriptions of the plant habits."

Elizabeth Rawlinson

The slides and black garden books have not yet been rediscovered. I have discovered bits and pieces of her herbarium collections, however, but nothing like the hundreds of specimens that she obviously collected. I have found eight or so items that have been digitized and are on line, scattered in a half dozen institutions, and about 40 at Massie Herbarium at Virginia Tech. Fellow Society member Jay Shaner and I spent a day at the herbarium where the staff there pulled everything they could find from Rawlinson's collection and digitized it for me. However, judging from her numbering system, there should be hundreds of plant specimens. What I have seen are indeed remarkable—the work of a true professional. The plants, gathered and preserved by her in the 1930s, were collected from places such as Shenandoah National Park, Magnolia Springs (near Stuarts Draft), Stingy Hollow (near her home), Three Ridge (near Tyro in Nelson), Franklin Hollow (near Craigsville), Briary Branch (near Stokesville), Spring Pond (near Sherando), and a Cold Springs bog (near Greenville).

She was a pioneering conservationist in the 1920s and 1930s.

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Rawlinson

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A newspaper article from the time period talked about her speaking to a Roanoke garden club group on the importance of not collecting plants from the wild. "Stressing the need of preservation of native flowers, Miss Rawlinson pointed out that certain flowers cannot be transplanted but are nevertheless sold on markets to be planted in cultivated gardens. Thus, she said, the plant is lost both to the forest and the buyer, and the flowers are becoming scarce through such mistreatment," the article noted.

Rusty Cliff Fern (*Woodsia ilvensis*) found growing on exposed rocks in a hot, dry habitat along the Calfpasture River in Augusta County, July 15, 1936.

She was also a frequent contributor and correspondent in *Claytonia*, the Virginia botanical journal published by the Virginia Academy of Science. She had an article or a note or a query in nearly every issue. She helped document many of the bogs and sinkhole pond ecosystems as well as many of the rare plants in the Augusta County area. For instance, in 1934, the October issue of *Claytonia* had an article by her about Roundleaf Sundew (*Drosera rotundifolia*), which she documented in southeastern Augusta County. In her botanizing excursions she traveled with some of the state's most eminent botanists. On some of her southeastern Augusta trips she was in the company of Ruskin Freer, editor of *Claytonia*.

Elizabeth Rawlinson must have been a remarkable and self-assured woman. If you can help me learn more about her and the botanical circles she traveled in during the early to mid-20th century, feel free to email me at lotswife@comcast.net and help me learn more about Augusta County's very own "plant lady."❖

—Nancy Sorrells, Editor

Pink Lady's-slipper (*Cypripedium acaule*), collected May 16, 1936, in Nelson County.