# Sempervirens

Fall/Winter 2018-2019 The Quarterly of the Virginia Native Plant Society

## Winter Workshop

## *Save the date!*

"Reforestation" is the theme of the 2019 VNPS Winter Workshop. This year's day-long event will be held March 9. The workshop has been moved to Piedmont Virginia Community College in Charlottesville. The new venue has a much larger capacity so members will not have to worry about being placed on a waiting list for this popular annual event. Watch the Society website for more information and registration details. See you in Charlottesville in 2019!❖


Turn to pages 10-11 to learn more about educator and naturalist Betty Gatewood's personal journey into nature journaling. Two journal pages from December of 2017 are seen here.

## *Visit 'The Bruce' and its special plants with VNPS*

Join the Society on a trip to the Bruce Peninsula, Ontario, situated between Lake Huron and Georgian Bay. We will stay at the rustic, all-inclusive Evergreen Resort on the shore of Lake Huron and visit sites including Flower Pot Island, the singing sands of Dorcas Bay, and several fens and limestone pavements. Along the way we hope to see many species of orchids and carnivorous plants and other treasures. Cabins have been reserved for the week of June 2-9, 2019. More details including exact cost should be available soon.

A stone flower pot from a promontory on Flowerpot Island at the northern end of the Bruce Peninsula. (Photo courtesy Sally Anderson)

Send an email to vnps.org@gmail.com or phone the office to be put on the list for trip information. We will need to confirm cabins during February so please send your $200 deposit to "VNPS Bruce Trip," 400 Blandy Farm Lane #2, Boyce, VA 22620 or call 540-637-1600 to use your credit card. Deposits need to be received by February 8. Don't forget you will need a passport to travel to Canada.❖

**INSIDE!**

**WILDFLOWER OF THE YEAR BROCHURE**

**NEW JERSEY TEA**
***CEANOTHUS AMERICANUS***

*From the President*

# Expanding horizons, overcoming obstacles

We are landowners! Thanks to a DuPont–Waynesboro Settlement Grant, the Virginia Native Plant Society now owns approximately 85 acres next to the 359-acre Mount Joy Pond Natural Area Preserve in Augusta County. This area is home to the rare Virginia Sneezeweed (*Helenium virginicum*). Our stint as a landowner will not be long as we will be transferring the property to the Virginia Department of Conservation and Recreation's Division of Natural Heritage.

What a challenge the John Clayton Chapter experienced in hosting our Annual Meeting this year! The threat of a devastating hurricane named Florence scuttled plans for our event in September, but Cortney Will, Lucile Kossodo, and their team stepped up and rescheduled the entire event for a date three weeks later. While attendance was affected by the date change, those who attended enjoyed the more intimate gathering and engaging field trips with smaller groups. Harry Glasgow was lucky enough to score a personal tour of the trees on the campus of the College of William & Mary led by herbarium curator Beth Chambers. I was one of about 10 of us who went far afield for a day-long trip to the Blackwater Ecological Natural Area Preserve in the Zuni Pine Barrens of Isle of Wight County. Led by Old Dominion University graduate student Nick Flanders, we had a fabulous time exploring an area with Longleaf Pines (*Pinus palustris*) overhead and lovely fall-blooming flowers such as Sheep Laurel (*Kalmia angustifolia*) and chaffheads (*Carphephorus* sp.) on the ground. We thank Cortney and the members of the John Clayton Chapter for hosting this memorable weekend. You'll find more about the annual meeting elsewhere in this issue.

Also, at the Annual Meeting, we re-elected members of our board of directors. I had the honor of being re-elected to another term as your president, and John Hayden (Botany), Peggy Troyer (Fund-raising), Mark Murphy and Caitie Cyrus (Web Co-administrators), and Erika Gonzalez (At-Large) were also re-elected to three-year terms. Roxanne Paul completed her term as Membership Chair, and we thank her for her service and dedication to accurate records. I am pleased to report that Alex Fisher volunteered for the important Conservation Chair post, and the board appointed him to a one-year term at its December meeting. Alex hails from Richmond, majored in environmental studies at UNC-Wilmington, and currently works as an environmental technician for an engineering firm. Welcome!

Nick Flanders amidst Longleaf Pines. (Nancy Vehrs photos)

Our 2018 fundraiser is winding down and I hope that you will support "Flora II: Keeping the Science Current" with a generous contribution. The scientific world is not static, and the *Flora of Virginia* was printed with 2011 data. The Flora App for smartphones and tablets is a flexible medium and will be the vehicle for updates. Our goal is $25,000; please help us meet this sum.

Best wishes for the new year!

Picnicking at Blackwater Ecological Natural Area Preserve are (l-r) Nick Flanders, Ashley Moulton, Tana Herndon, and Tamara Johnson.

# *Annual Meeting*
# Through the President's Lens

# *Natural Area Preserves: Conservation Through Partnership*

***From Your Natural Heritage Program***
**By Rob Evans**

In a 2016 *Sempervirens* article, Jason Bulluck wrote, "We are so fortunate to have such a robust and successful Natural Area Preserve System in Virginia. … [T]here is much to treasure and be proud of in our system, and we work very hard to share these places wherever and whenever we can."

As members of the Virginia Native Plant Society, you have really embraced this message. Many of you have joined field trips to one or more Natural Area Preserves this year, perhaps during the Annual Meeting, or you took one of Gary Fleming's western Virginia trips, or participated in The Cedars and Powell River Appreciation Days. Many of you also helped expand the preserve system through your donation to the annual VNPS fundraiser that resulted in three significant additions to The Cedars Natural Area Preserve in Lee County. And all of you, by virtue of your membership, played a role in the recent purchase of an 85-acre addition to the Mount Joy Ponds Natural Area Preserve, the first conservation purchase ever made by the VNPS!

Additions to those two preserves highlight the evolution of land conservation here at the Virginia Natural Heritage Program, and VNPS is part of it. We have become strongly focused on improving the resiliency of existing preserves, shoring up investments made previously in these essential places. The VNPS addition to Mount Joy Ponds will improve the long-term viability of one of the world's best sinkhole ponds and at least six significantly rare species, while also protecting part of a U.S. Important Bird Area and one of the largest ecological cores in the region. Similarly, protection of the new Cedars tracts was necessary in efforts to reconnect and reassemble the jigsaw puzzle that collectively makes this area a true biodiversity hot spot and essential conservation site, with a host of species restricted to this site in Virginia.

We haven't abandoned the establishment of new preserves, because there are still essential conservation sites that need protection, but we also have to finish what we've started. Many of our existing preserves (like Mount Joy Ponds and The Cedars) need to be bigger to be better. Many of our 63 preserves protect the single largest aggregation of rare species and natural communities across the commonwealth, but they may not stand up to the stress test posed by a growing list of external threats. We have carefully analyzed our portfolio and identified which Natural Area Preserves need to be expanded to reduce those threats and mapped resiliency areas around each. This effort was based on the premise that larger sites maximize the chances that many species, including common ones, will persist into the future. Larger Natural Area Preserves are also more resilient because they better enable the reintroduction of fire, which is essential across much of the commonwealth, where the landscape and many native species have evolved with fire. For this reason alone, simply protecting undeveloped land adjacent to certain preserves, to serve as smoke buffers, could make a strong case for acquisition.

But this means that we have a huge job ahead. In fact, the job is too big to do alone, which is why the partnership of VNPS is so important and, moreover, appreciated. We welcome and encourage Society members, as well as other conservation partners and citizens, to partner with us through contributions to the Natural Area Preservation Fund, where tax-deductible donations of any size support our ongoing mission of biodiversity protection.

Having supporters who truly embrace the primary charge of the Natural Heritage Program is a really special thing. We want you to know all of our staff appreciate it. And, your ongoing support sends a critical message. There are citizens out there who care and want preserves to be a part of the Virginia landscape—now and for future generations!❖

Exploring the recent addition to Mount Joy Ponds Natural Area Preserve. (Courtesy DCR-Natural Heritage Program)

# In the field with ferns, mosses, and Helen Hamilton

I became fascinated by bryophytes (liverworts, mosses, and hornworts) several years ago, so when the Annual Meeting featured a field trip titled Ferns and Mosses at Freedom Park, I jumped at the chance. I had already met two of the attendees online (as members of the Facebook group VNPS Ferns, Fungi, Lichens, and Mosses), so I knew I'd be in good company. The trip was led by Helen Hamilton (also a member of the Facebook group) and included nine eager participants.

As we stepped out of our cars, Helen immediately pointed out Goblet Moss (*Physcomitrium pyriforme*) growing under our feet between the paving stones and curbs. She told us that goblet moss was mostly a spring (but occasionally fall) ephemeral. Unfortunately, right next to the parking area was a patch of invasive Beefsteak Plant (*Perilla frutescens*), a member of the mint family, Lamiaceae.

We walked past the GoApe Treetop Adventure Course, looking at various lichens, mosses, and ferns along the way. We spotted Christmas Fern (*Polystichum acrostichoides*), which has fertile frond tips that are much smaller than the nonfertile parts. The fern moss (genus *Thuidium*) we saw has a leaf structure similar to that of ferns, hence the common name.

Descending down into a small stream bed, we found Worm Moss (*Bryoandersonia illecebra*) with its many parts that look like small green worms stretching up above the surface. Tree Skirt Moss (*Anomodon attenuatus*) seemed to be growing up around nearly every available tree trunk. There was some confusion over a vine growing up a tree that had suspicious poison ivy–like aerial rootlets, but after looking it up we quickly determined that it was something else, later identified as Climbing Hydrangea (*Decumaria barbara*), a.k.a. Woodvamp, a native to this coastal part of Virginia.

Passing by patches of Broad Beech Fern (*Phegopteris hexagonoptera*), we made our way to a rotting log on the forest floor that was covered with a light green coating of Rustwort, the tiny liverwort *Nowellia curvifolia*. Helen explained that downed trees, with retained bark would likely have moss growing on them, but that this liverwort was commonly found on trees that have lost their bark.

We then spotted a Netted Chain Fern (*Woodwardia areolata*) near the stream and Hook Moss (*Forsstroemia trichomitria)* and liverworts (*Frullania* spp.) growing on the sides of trees. Healthy patches of Woollywort (*Trichocolea tomentella*) grow along the sides of the stream and elsewhere throughout the ravine. This plant looks like moss, but no, it's a liverwort, as examination under a lens reveals its hairlike, liverwort-leaved structure.

Working our way up the hill to another small ravine, we followed Helen to a site with yet another liverwort, *Pallavicinia lyellii* (no common name). With lenses, we could clearly see the male (antheridia) and female (archegonia) structures growing from the green thallus.

On the return path, we discovered a nice group of Large Twayblade (*Liparis liliifolia*) in fruit, growing near several Nuttalls Lobelia (*Lobelia nuttallii*). We finished up with some Brocade Moss (*Hypnum imponens*) before making our way back to our cars.

I know I missed some of the many specimens Helen identified on the trip, but I was struck by how many of the liverworts (and ferns) she pointed out were the same ones I had discovered in Bull Run Mountains Natural Area Preserve in Prince William and Fauquier counties. It's nice to know that when you start to pay attention to the small things in nature, you can rediscover old friends no matter where you go!

*—Janis Stone, Prince William Wildflower Society*

This liverwort, *Pallavicinia Lyellii, was spotted* on a field trip at the Annual Meeting. (Photo by Janis Stone)

**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: Jan. 30, 2019**

# *Fungus Creates Zombie Insects on Dogwood*

Articles and illustration by W. John Hayden, Botany Chair.

I have something I need to get off my chest. I have an obsession with, of all things, a fungus! And not just any fungus, but a fungus that infects, I am embarrassed to admit, Flowering Dogwood, the VNPS Wildflower of the Year for 2018. Yes, maybe I've gone off my rocker. But this fungus is so cool, so devious, so elegantly convoluted and weird—in a creepy sort of way—that I find myself utterly enthralled. Perhaps sharing my obsession with this fungus will prove therapeutic and permit me to return to my more socially respectable obsessive fascination with plants.

No, I am not writing about Dogwood Anthracnose, *Discula destructiva,* which certainly is a severe problem for *Cornus florida*. Though serious, Dogwood Anthracnose is a rather ordinary parasite; it infects (in effect, it consumes) leaves and floral bracts of Flowering Dogwood. Under cool and moist conditions favorable to *Discula,* it can also spread to stems and even the main trunk, in which case it can prove lethal. But there are thousands of parasitic fungi that go about their plant-destroying life cycle in a generally similar way, i.e., by mounting direct attacks on the cells and tissues of their hosts—nothing special there.

It is not *Discula* but the genus *Septobasidium* that has seized my imagination. If you spend time in nature observing plants, you may have encountered one or more species of this fungus and not given it a second thought. To the naked eye, *Septobasidium* appears to be nothing more than a fuzzy, discolored patch on the surface of relatively small twigs and branchlets. Some species can be mistaken for harmless lichens. Colors range from white to tan, brown, or charcoal black; species that form dark patches tend to have distinct white margins. The fungal body (thallus) may be just a fraction of an inch in size, but large specimens may extend across several inches of stem surface. Sometimes *Septobasidium* completely encircles the branch upon which it lives.

Paradoxically, *Septobasidium* never enters the host plant. Rather than feed directly on the plant, *Septobasidium* parasitizes scale insects that parasitize the plant. The creepy and convoluted part of the story is how this fungus manipulates the scales that feed it. But first, let's review how scale insects feed on plants. At maturity, scale insects look like minuscule turtles clamped onto the surface of plant stems or leaves. Immobile, adult scales have tubelike mouthparts that extend several cells deep into the plant stem, often terminating inside cells in or near the nutrient-rich cambial layer. Once its food source has been secured, the life of the scale consists of sucking up nutritious plant sap and making little baby scales, which, by the way, are born live from their mothers. Locked in place by their mouthparts, adult scales can neither flee nor hide from predatory birds or insects. They are, so to speak, highly nutritious sitting ducks.

Patches of *Septobasidium* hyphae are always found in association with scale insects. Tangled mats of fungal hyphae (threadlike chains of cells) cover the scales, effectively hiding them from view. Careful dissection of the fungal mat reveals distinct chambers in which the scales reside. But it is not a life of protected luxury for all the scale insects in a colony, because some scales are infected with *Septobasidium*. The infection process starts with fungal spores that germinate on the surface of newly hatched scales. Hyphae force entrance into the body of the scale insect and quickly form specialized absorptive cells called haustoria. By means of these haustoria, nutrients pass from the scale to the rest of the *Septobasidium* thallus. In summary, the scale insect steals nutrients from the plant and the fungus takes what it needs from some of the scales that it protects. Infected scales lose the capacity for reproduction and become, in essence, zombie-like food pumps for the fungus. Other, luckier, scales under the protective fungal blanket are uninfected and remain capable of reproduction, a regular supply of new baby scales being crucial for the long-term survival of both the insect and the fungus.

As I was first learning about *Septobasidium* and their scale insect associates, I pondered how such simple organisms could effectively manipulate each other or coordinate with each other in order to achieve the appropriate balance of uninfected, reproductively competent insects and sterile fungus feeders. The answer turns out to be quite simple. Scales are born throughout the warm months; in that same period, the fungus makes its infective basidiospores. Scales born during rainy and humid times succumb at high frequency to infection by *Septobasidium* as they disperse from their mothers. Scales born during dry weather disperse and establish themselves unimpeded by *Septobasidium*. In the Southeast,

## Bizarre Fungi Are Plentiful!

Not only are *Septobasidium* fungi just plain bizarre, but there are a lot of them! Couch's 1938 monograph enumerates 173 species found with their scale insects on a wide variety of trees and shrubs in warm temperate and tropical regions. Five different species of *Septobasidium* can be found on Flowering Dogwood (*Cornus florida*) in the southeast U.S.; these species can be distinguished as follows:

*S. appiculatum* – grows as a flat mat of felty, off-white, hyphae forming discrete, tufted, mounds over the bodies of the scales (see Figure 1)

*S. castaneum* – potentially as large as several feet in extent, brown when dry, black when wet, with bright white margins when rapidly growing; internally complex with discrete chambers for scale insects and tunnels contained within the mat-like thallus

*S. curtisii* – resembles black sooty molds that exploit sugary exudates from aphids; margins of the colony consist of patches of hairy black hyphae that envelope individual scales

*S. pseudopedicellatum* – variable in color, pale gray, to tan, cinnamon or chocolate brown; internally characterized by a series of post-like hyphae that support a roof layer under which the scales reside

*S. sinuosum* – characterized by mousy gray to slightly purple mats of hyphae, the surface of which is complexly divided into a series of anastomosing ridges

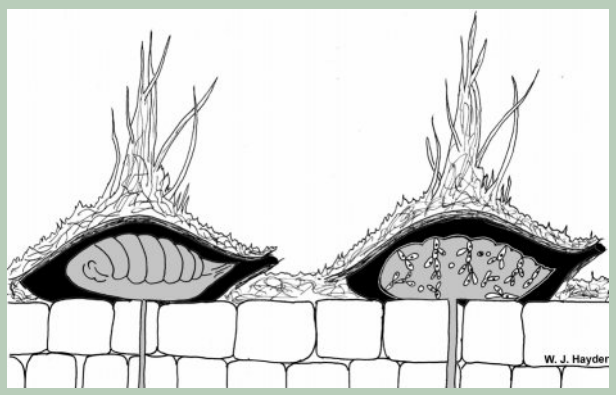


Figure 1. *Septobasidium appiculatum* enclosing scale insects feeding on a Flowering Dogwood stem; surface view of scale on left, section view of scale on right, with fungal haustoria. Redrawn after the frontispiece in Couch (1938).

Who knows, there may be more species awaiting documentation on Flowering Dogwood. These same species, and six others, also occur on Sweet Gum (*Liquidambar styraciflua*) and Sweetbay (*Magnolia virginiana*)—for particulars, see Couch (1938). But beware, you, too, may become obsessed!

then, many scales born in late spring and early summer become zombies, but those born in late summer and fall tend to settle down to fecund lives under their protective fungal mantle.

Ah, but this is not just a story about scales and fungi. There is another devious player in this microcosm that adds another ghastly twist to the tale. As many readers of *Sempervirens* already know, there are parasitic wasps that prey on all sorts of other insects. It turns out that certain parasitic wasps specialize on scale insects. Female wasps of these species penetrate the scale insect's exoskeleton and oviposit directly inside the scale's body cavity; wasp larvae grow by eating their scale hosts from the inside. There are wasps that parasitize free-living scales, and others that parasitize scale species protected by *Septobasidium*. The protection provided to scales by *Septobasidium* is not total!

So how did these intricate parasitic relationships come about? Apparently not much is known about the details, but one conclusion about the origin of *Septobasidium* is undisputed. The closest relatives of this fungus are parasitic rusts, fungi that attack a variety of host plant species. Hollyhock Rust and Black Stem Rust of Wheat are two well-known examples. Their close relationship with *Septobasidium* is revealed in shared details of their spore-producing structures and has been confirmed by DNA sequence data. Presumably, then, fungi ancestral to *Septobasidium* were plant parasites that evolved to exploit the feeding habits of scale insects.

Having told this devious tale, I do feel better; sharing these insights does seem to have lessened my obsession with *Septobasidium*. I can now move on to other matters. But I may never look at Flowering Dogwood the same way. Who could have imagined that our handsome and beloved Dogwoods could host such a cunning den of parasites? To paraphrase Hamlet, "There are more things in our beloved Dogwoods, Horatio, than are dreamt of ..."❖

MOST OF THE INFORMATION IN THIS ARTICLE IS BASED ON:

Couch, J. 1938. The genus *Septobasidium*. University of North Carolina Press, Chapel Hill. 480 pp.

# *Something is afoot in Virginia*

## 2018 Annual Meeting, October 5-7

Article by Peggy Troyer, Fundraising Chair.

This fall has been filled with unusual phenomena. When this was written in early October, Hurricane Michael had just made landfall on the Florida Coast as a Category 4 hurricane. In September, during the time scheduled for the Virginia Native Plant Society's Annual Meeting, Hurricane Florence was barreling into North Carolina, and prudent thinkers canceled the meeting for that weekend. We ended up meeting in early October in Williamsburg at the William & Mary School of Education.

Perhaps the theme for this year's meeting should have been "I'm All Shook Up," because, in addition to our rescheduling issues, handled with a great deal of grace by the John Clayton Chapter, we had two very interesting speakers who took us in all-new directions.

Friday evening we heard from Jessica Hawthorne, director of programs at the Virginia Center for Inclusive Communities, in Richmond. She was not discussing plant communities, but human groups. How do we speak to and welcome those who have not traditionally been a part of VNPS? With the membership of VNPS graying, she helped us ask questions such as "How do we make a place for fresh faces, who may have a different take on things?" and "Do we manage to be diverse, with some on the fringe not really involved, or can we be inclusive, embracing necessary change without being threatened?" She definitely gave us food for thought. We looked at our mission statement, which is available on the web. I realized there were three branches to our mission: conservation of wild spaces, legislation to keep protections intact, and, finally, shall we say, urbanization. By that I mean bringing natives into private and public landscapes where they can be seen and enjoyed by humans, and simultaneously put to good use by pollinators and the birds that eat them.

Annual Meeting participants gather under the magnificaent Virginia Champion Compton Oak. When measured in 2014, the circumference of the trunk at chest height was nearly 16 feet and the crown was 119 feet wide. The walk was led by Phillip Merritt. (Janet Pawlukiewicz photo)

Saturday we launched into a variety of field trips and workshops. Participants in the day-long Blackwater Preserve trip headed out not to be seen again until dinnertime. Other folks went to Freedom Park with Helen Hamilton for the ferns and mosses adventure, to Colonial Williamsburg for a look at some large old trees, as well as the Saturday farmer's market, and out to Dragon Run, the Grafton Pond marshes, a beaver dam on White Oak Trail, a shoreline paddle, or the Virginia Living Museum in Newport News. Adrienne Frank and her husband Gary Driscole took folks through some great pollinator territory, and Donna Ware substituted for Caitie Cyrus at William & Mary's College Woods.

By Saturday evening we had had a wonderful sampling of the calcareous rock that allows mountain disjuncts to flourish in ravines of the warm and humid coastal plain, butterfly species we'd never seen before, a tennis ball covered in moss, and those crazy mop-headed Longleaf Pine babies, shooting their taproot down and then leaping up in height from a two-needle sprig to a gangly teenager. Others participated in the PRISM workshop, which bedecked each table with a lovely invasive centerpiece. (Eew! Do I care to sit next to that bittersweet vine?)

On Saturday evening we had talk number two, by Kevin T. Bryan, who canceled a family trip to Pittsburgh to attend our rescheduled meeting. He is with the Keystone Policy Center in Washington, where he leads the environment, energy, and climate practice area. More important for us, he advises the Next 100 Coalition, a collection of civil rights, environmental, justice, and grassroots conservation organizations pursuing a shared vision of a more diverse and inclusive culture in the management and preservation of our nation's public lands.

His catchphrase was "Something is afoot in Virginia."

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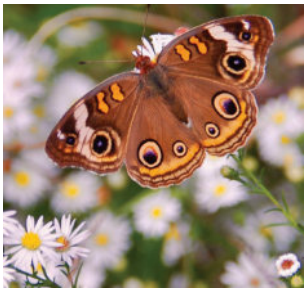
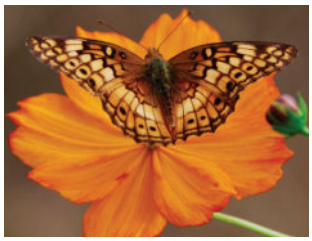
# Butterfly bonanza at the Annual Meeting

Article and photographs by Janet Pawlukiewicz, 1st Vice President.



Common Buckeye on an aster



Variegated Fritillary on a cosmos

Adrienne Frank and Gary Driscole, of the John Clayton Chapter, are experts on "Butterflies and the Plants that Love Them." Using the brochure by that title that they developed for the Williamsburg area, they teamed up with entomologist Ken Lorenzen to teach a group of Annual Meeting–goers more about local butterflies. Even though the meeting had been delayed due to Hurricane Florence, we still saw many beautiful butterflies in the community garden, under power lines, and along the edge of the Warhill drainage pond. Dr. Lorenzen even caught several so that we could get up close and personal.

Many of the butterflies were drawing nectar from nonnative garden plants, but native plants will serve as hosts for their larvae. For example, the larvae of the Variegated Fritillary, whose adult is seen here on a Cosmos, is hosted by Passion-flower (*Passiflora*), which we saw in the area. Plantains (*Plantago* sp)White Vervain (*Verbena urticifolia*), and Purple False Foxgloves (*Agalinis purpurea*) are hosts to the larvae of the Common Buckeye, shown feeding from a native aster. Of course, Monarch larvae, the adult shown here on a thistle, are dependent on milkweeds.❖

Monarch on a thistle

Sphinx Moth caterpillar

Fiery Skipper on Pickerel Weed

Warhill drainage pond

## Continued from previous page

What does that mean to us, exactly? Well, while Jessica spoke of inclusion, Kevin spoke of joining forces with organizations like Outdoor Afro, Latino Outdoors, and the Greening Youth Foundation, all "people of color who find themselves on the fringe of opportunity." He wasn't so much interested in us integrating our group with new members as he was with our partnering with groups representing minorities who have not had access to wilderness areas and outdoor experiences. He stressed that there was often a shared vision that made such partnerships strong, that increasing access to public lands for those who have been more often on the fringe strengthens that shared vision and was positive for all involved.

He felt that, rather than reinventing the wheel, we can easily partner with other organizations to broaden our base of common interest, serving as resources and collaborators rather than forming diversity within our group.

"Leading from behind" and "thinking differently" about how to achieve one's mission, with an eye to how other organizations can help expand that mission, are important steps he suggested for strengthening our mission and becoming more effective.

Sunday some were off on final wrap-up tours, while others stayed in for a tutorial on the Flora of Virginia Mobile App, the upgrade of which is the focus of our fundraising this year. The day presented a diverse offering, something for every taste, whether local landscaping, a palm-size but powerful plant guide, getting out your loupe for a close-up, or scrambling down a ravine to find the elusive walking fern.

Jessica and Kevin got us thinking. Joey, Gary, Donna, Darl, Randy, Susie, to name but a few, got us hiking. The air was sweet and clear; the plants still had a few blooms to share, and the college was most gracious. Although we may have started out "all shook up" with our reworked plans, perhaps "Something is afoot in Virginia" will keep us open to new possibilities as they come our way in 2019. As we wished each other safe travels home, we were sorry for those who could not reschedule and be with us and grateful for the John Clayton Chapter's grace under fire–or threat of hurricane! ❖

# A Personal Journey into Nature Journaling

Article and illustrations by Betty Gatewood.

*"What are you doing now? Do you keep a journal?"* After Thoreau was pointedly asked this in 1837 by his mentor, Ralph Waldo Emerson, Thoreau responds in his journal on October 22, 1837: *"So I made my first entry today."*

Nature Journaling, why do it? Thoreau had a mentor. I have family members who journal and are my mentors in documenting important things. My husband Mark has always kept records in his garden, bird, travel, house, and hiking journals. We have a box full of his dad's daily note-filled pocket calendars that are a family treasure. Our daughter Betsy diligently kept journals during her college years, and during her year as an *au pair* in France, she kept a blog.

Over the centuries, scientists, artists, researchers, and writers have kept notes in some format or another. I just found it difficult to do. What was wrong with me? It seemed like an assignment. I had to want to do it and had to have a reason for doing it.

Finally, driven by family inspiration, and other "artsy" mentors, I made my first entry on January 1, 2007! The key for me was that I was able to incorporate my love for science, art, hiking and "collecting stuff" in my journals, along with personal reflections on family and travels. And then I realized that the word *journey* (travel!) is the base word for *journal*. Traveling into the world of journaling has been quite a journey for me, and now I am uncomfortable without my journal nearby. I need it to help keep me in tune with the natural world and my life.

What is it? For some, a "journal" might be a personal memoir, like a diary. Perhaps a journal is simply written words—opinions expressed, poetry written, or philosophies stated. But a nature journal or a "naturalist's notebook" is what I keep. It can be a quick and rewarding way to document an outdoor experience. It can simply be a record of the day, but it also can be liberating, meditative, and a reflective way of connecting with nature. That pretty much sums up what I do.

What good is it? Your reflections might be of use in the future for family or local history. Take these inspirations from American history. Over several years, Thoreau kept notes when local wildflowers bloomed in Concord, Massachusetts. His wildflower blooming data have since been used in recent climate change studies by Richard Primack in his book, *Walden Warming*. Lewis and Clark's journals documented the then unknown world of the Louisiana Purchase. In 1792 Thomas Jefferson wrote "The greatest service which can be rendered any country is to add an useful plant to its culture. *Thomas Jefferson's Garden Book*, a volume of his published journals, has meticulous notes about weather, crops yields, and his gardening experiments, successes, and failures.

How to do it? Here are some considerations: First, you must want to do it. Remember, there are reasons to do it! Think of making a family or local record, if nothing else.

Second, find a format such as a journal, book, or notebook that works for you. Maybe a pocket journal would work for you, but if you want to tape stuff in and sketch and paint like I do in the field, I would recommend a sturdier format.

In my case, I had to have a book that contained paper without lines! This gave me more freedom. Also, the weight of the paper was very important to me because I write, sketch, paint, and tape stuff to the pages. The size and binding have also been critical since I like to stick it into a pack when I go afield. I like a 6x9 inch double-spiral bound unlined sketch book that is at least somewhat textured paper and at least 90 weight paper. I tried out several types and found this to be the best for me.

Third, don't make it an

assignment. If daily works for you, fine, but if weekly, or monthly works, that's fine too. Lara Call Gastinger, main illustrator of *The Flora of Virginia*, a nature journalist and botanical illustrator, introduced me to the idea of keeping a perpetual journal. Her idea was to take a journal and divide it into 52 double pages and label them with a certain week. I now try to do a brief half-page journal entry for some time during that week on those pages and have for several years. Right now, I have four years of nature journal info on weekly double pages that I can see and compare at a glance.

Fourth, have some organization to your journal. I like to begin each entry by noting the day, date, location, and weather at the top of the page, which is sometimes called the metadata of the journal entry. Usually I'll then write a little reflection or description about where I am, what I'm doing, and most often I find something to sketch or paint that complements my writing.

Finally, decide whether to put everything in one journal (like me—I'm a "lumper" as one friend says), or have several journals for different things (like my husband Mark who's a "splitter").

Do you need more help getting started on the journaling journey? There are many mentors who have helped me on my journey—Clare Walker Leslie, Susan Leigh Tomlinson, and John Muir Laws. They all have wonderful books, websites, and/or on-line resources for help and inspiration, and many offer workshops! One of the first resources I discovered (in 2005) was Leslie's seminal book, *Keeping a Nature Journal: Discover a Whole New Way of Seeing the World Around You*. She writes, "You can experience a spirited, yet tranquil exploration of the living world by creating your own nature journal." At Texas Tech University in Lubbock, Texas, Susan Leigh Tomlinson teaches an introductory field craft course "with the focus being on thoughtful explorations into the field" in which students "….record what they find, and put this knowledge about the natural world into a context that enriched their lives." In her book *How to Keep a Naturalist's Notebook*, she mentions that it is not about creating a work of art; it is about careful observation and documenting what you observe.


A page from Betty Gatewood's journal documenting observations that she made while visiting Canaan Valley State Park in West Virginia.

Laws, author of many books on nature journaling, says in his book, *The Laws Guide to nature Drawing and Journaling* that "The goal of nature journaling is not to create a portfolio of pretty pictures but to develop a tool to help you see, wonder, and remember your experiences."

When I teach nature journaling workshops or conduct sessions, I use many quotes from these gurus, plus often these as journaling prompts:

"Be creative, and if you don't like what you have done, you can paint or tape over it, or tear it out!" says Rhonda Roebuck (friend and nature journalist extraordinaire).

Once a frustrated teacher asked the famous scientist, Ernst Mayr: "How can I make my students better scientists?" Mayr replied: "Teach them how to be good observers."

Being around others who are taking the journaling journey can help get the creative juices flowing. The Shenandoah Nature Journal Club, which meets the second Sunday of each month, is celebrating its second anniversary this November in Shenandoah National Park. Come join us for a non-judgmental, fun, and sharing afternoon with fellow nature journalists.

So in summary, quoting Laws again now, "You can learn to do this. You do not need to be an artist or a naturalist. These are skills you will develop as you go. The time to begin is now. I draw and work in my nature journal for three reasons: to see, to remember and to stimulate curiosity. Pick up your journal, walk outside, and cultivate a richer experience of being alive."

*—Award-winning educator, naturalist, artist, and frequent contributor to* Sempervirens *and the Society's Wildflower of the Year brochures, Betty Gatewood prefers to paint plants in their natural state even if they are torn, tattered, and bug eaten.*

# Communications Workshop: Growing & Diversifying

At the beginning of December, 16 participants from seven chapters (Jefferson, John Clayton, Piedmont, Pocahontas, Potowmack, Prince William, and South Hampton Roads) met to discuss ways to increase diversity and grow membership. The meeting was inspired by challenges presented by two compelling speakers at our Annual Meeting — Jessica Hawthorne and Kevin Bryan.

Facilitated by First Vice President Janet Pawlukiewicz, the participants reviewed the VNPS mission and current work. Through small and large discussions, they "brainstormed" potential actions and challenges to address. Then, to identify priorities, each participant had five votes to distribute over the proposed actions.

Here are some identified actions that you might want to consider in your chapter:

• Encourage localities to adopt an official native wildflower.

• Publicize events to non-traditional groups. Choose publicity photos that reflect the diversity you'd like to encourage. Consider offering a native plant "Meet Up" (use meetup.com).

• Engage youth, for example 4-H, Boys and Girls Clubs. Provide nature camp scholarships. Ask them to help out at plant sales. Arrange transportation to events and field trips and provide docents for outings.

• Actively reach out to make contacts and offer presentations or sponsor tables at non-environmental meetings and festivals. Reach out to groups such as Outdoor Afro (outdoorafro.com), Latino Outdoors (latinooutdoors.org) and the Student Conservation Association (thesca.org) to meet and discuss potential common goals and activities.

The group also recognized some challenges (and solutions) for taking these actions such as limited staffing and capacity at the chapter and state levels. We need to find the members with passion for the activities and support them in their endeavors. Also, there is a need to balance these actions with other important priorities—be strategic. Clearly, it is not always easy to approach groups with apparently different interests and cultures. So, it is important to start by sitting around the table together in order to search for an intersection of goals. Finally, it is most important to focus on inclusion in addition to diversity. Make people feel welcome and included once they do join us.

In conclusion, the group decided to send the proposed actions identified at the workshop to all members and the board. So, be on the lookout for these. Give some feedback and additional ideas. Let us know what inspires you.

*—Janet Pawlukiewicz, 1st Vice-President*

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