

# Sempervirens

Winter 2017-2018 The Quarterly of the Virginia Native Plant Society

## Mount Joy Pond Society Receives Mercury Settlement Funding

It has been more than 50 years since the DuPont fiber manufacturing facility in Waynesboro last released mercury into the South River. In December, Virginia Governor Terry McAuliffe announced the first round of grant projects aimed at mitigating that toxic contamination from long ago. The Virginia Native Plant Society is among the many recipients of the \$50 million settlement designed to improve water quality and habitat in order to offset the environmental impacts of the contamination.

The \$1.275 million award from the DuPont Waynesboro Natural Resource Damage Assessment and Restoration settlement will allow the society, for the first time in its 35-year-history, to actively participate in land acquisition in order to, among other things, protect the habitat of the globally rare Virginia Sneezeweed (*Helenium virginicum*). One of the world's largest populations of the plant is found at the Mount Joy Pond Natural Area Preserve in southeastern Augusta County.

The Mount Joy Special Area Acquisition and Restoration Project was one of 16 designated awards announced in a special ceremony attended by many local, state, and federal leaders and held in the Waynesboro city council chambers. Included in the awards were three projects within the city, where the mercury contamination took place in the first half of the 20th century.



A camouflaged crab spider waits for its next meal while perched on Virginia Sneezeweed at Mount Joy Pond. (Nancy Sorrells photo)

“With these grants, we are addressing longstanding contamination, restoring ecosystems, and continuing Virginia’s legacy of sound environmental stewardship,” said Governor Terry McAuliffe.

The 274-acre Mount Joy Natural Area Preserve, owned by the Virginia Department of Conservation and Recreation’s Division of Natural Heritage, is home to a rare sinkhole pond where the water levels fluctuate seasonally. The sandy, acidic soil, combined with conditions that range from very wet in the winter to very dry in the summer, have created unique flora evolved to thrive in such harsh conditions. The ponds are formed by carbonate rocks that underlie an acidic colluvium and alluvium from the Blue Ridge.

The conditions found in these rare sinkhole ponds, located in Augusta County and Rockingham County to the north, replicate those found on the coastal plain, giving rise to several disjunct species found in eastern

Virginia and along the flanks of the Blue Ridge Mountains, but nowhere in between. Core borings in the pond itself indicate that this habitat has persisted for at least 15,000 years. In addition to Virginia Sneezeweed, Mount Joy is also home to several other rare plant species including Swamp Pink (*Helonias bullata*) and Prairie Loosestrife (*Lysimachia quadriflora*), as well as the state endangered Eastern Tiger Salamander (*Ambystoma tigrinum*).

In addition to protecting the globally rare habitat, the acquisition will protect and enhance habitats for migratory songbird species as well as several threatened bat species.

Some other plants of interest at the sinkhole pond are Winterberry Holly (*Ilex verticillata*), Forked Bluecurls (*Trichostema dichotomum*), Virginia Meadow Beauty (*Rhexia virginica*), and American Persimmon (*Diospyros virginiana*).

With the award, the Society proposes to purchase and restore about 120 acres of land surrounding the current DCR parcel. The land will create a buffer to the current sinkhole pond complex as well as provide water quality protection for over 8,000 feet of headwaters streams. Work on the project will take place in partnership with DCR’s Division of Natural Heritage, and eventually the proposed purchases would become part of the Mount Joy Preserve.

—Nancy Sorrells, Editor

## Va. Natural Area Preserves are for Plant Lovers

The Virginia Natural Heritage Program recently updated its brochure, which provides a guide to our publicly accessible Natural Area Preserves. (The brochure is available online here: <http://www.dcr.virginia.gov/natural-heritage/document/napbook4web.pdf>). I used the new brochure to suggest an itinerary for any of you who, like me, have limited time to visit some of the botanical wonderlands in our Natural Area Preserve system. The itinerary will provide you with a chance to see many of our beautiful native plants growing in some of the commonwealth's most pristine natural habitat. If you take your time and aren't afraid to key out a few grasses and sedges, you can observe more than 350 native plant species on these six visits.

### Trip 1. Late April Pinnacle Natural Area Preserve, Russell County

Fact sheet: <http://www.dcr.virginia.gov/natural-heritage/document/pgpinnacle.pdf>

Late April is a magical time at the Pinnacle. Everywhere you look, spring is bursting forth with a great diversity of spring ephemerals. Because the preserve is underlain by calcareous bedrock, the soils are very rich and many uncommon and rare species inhabit this preserve. Along the three-plus miles of trails, look for Kentucky Coffee-tree (*Gymnocladus dioica*), Spotted Mandarin (*Prosartes maculata*), Canby's Mountain-lover (*Paxistima canbyi*), and Carolina Saxifrage (*Saxifraga caroliniana*).

### Trip 2. Mid May Crow's Nest Natural Area Preserve, Stafford County

Trail map: <http://www.dcr.virginia.gov/natural-heritage/document/cnnap-trailmap.pdf>

By mid-May, most plants of the forest and marshes have emerged and the neotropical migrant birds are back and setting up breeding territories. The experience of this preserve



Rich forest at Pinnacle Natural Area Preserve. © DCR-DNH, Gary P. Fleming



Freshwater tidal marsh along Accokeek Creek at Crow's Nest Natural Area Preserve. ©DCR-DNH, Gary P. Fleming



Open summit at Buffalo Mountain Natural Area Preserve. ©DCR-DNH, Gary P. Fleming



## From Your Natural Heritage Program

By Jason Bulluck

is greater than the sum of its parts. Here, relatively close to Washington, you can enjoy deep forest and expansive tidal marsh views. One bonus of a mid-May visit: a large population of the rare Marsh Pea (*Lathyrus palustris*) grows in the marsh on the east side of the boat-launch boardwalk on Accokeek Creek.

**Trip 3. Late June**  
Buffalo Mountain Natural Area Preserve, Floyd County  
**Preserve guide:** <http://www.dcr.virginia.gov/natural-heritage/document/pgbuffalo.pdf>

Any time of year deserves a visit to Buffalo Mountain. The natural communities of this preserve are beautiful, and there are few if any invasive plants over large tracts. The summit is incredible with 360° views and spectacular large, natural, invasive-free, open, grassy barrens! In the barrens, look for these rare or uncommon plants: Three-toothed Cinquefoil (*Sibbaldia tridentata*), Rusty Woodsia (*Woodsia ilvensis*), Silverling (*Paronychia argyrocoma*), and Mountain Sandwort (*Minuartia groenlandica*).

**Trip 4. Late July**  
Poor Mountain Natural Area Preserve, Roanoke County  
**Preserve guide:** <http://www.dcr.virginia.gov/natural-heritage/document/pgbuffalo.pdf>

Two features will stand out to the botanist visiting this preserve. First, the sprawling dry forests of Table Mountain Pine (*Pinus pungens*) and oak species are as beautiful as they are sparse in species richness. The

soils here are highly acidic. Second, in consolation for the low number of species, there is a vibrant population of an extremely rare large shrub, Piratebush (*Buckleya distichophylla*). If it's not too hot, you can try the vigorous four-mile trail!

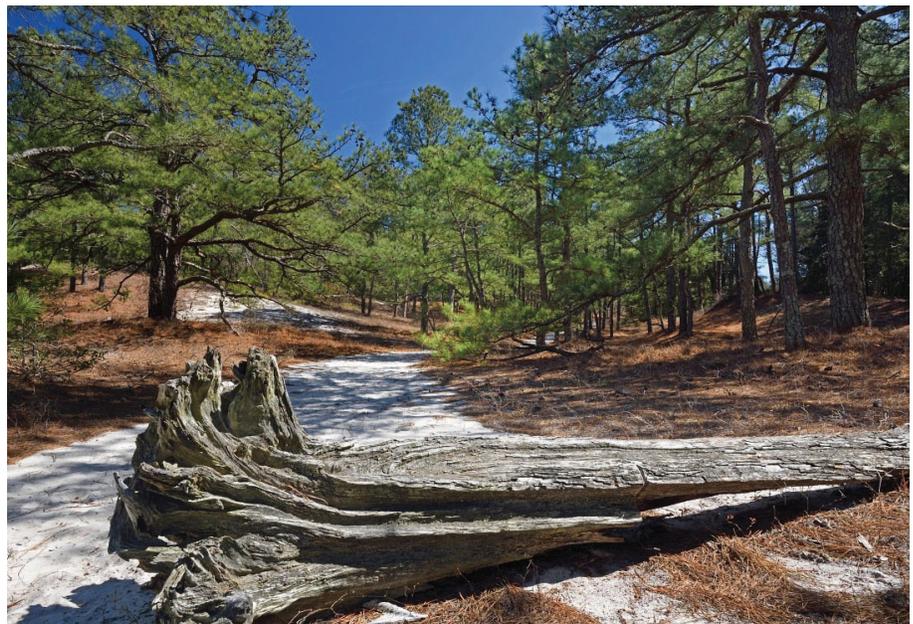
**Trip 5. Late August**  
Chub Sandhill Natural Area Preserve, Sussex County  
**Preserve guide:** <http://www.dcr.virginia.gov/natural-heritage/document/pgchub.pdf>

In contrast to the low number of plant species found at Poor Mountain, you will rack up plant after plant at this preserve, particularly legume species that are most common in the drier, open, sandy locations. This preserve provides an opportunity to see our native Longleaf Pine (*Pinus palustris*) restoration—look for interpretive signs and more than 200 acres of young longleaf forest along the road as you approach the Nottoway River from the east. Don't be surprised to see char and signs of fire—we use prescribed burning regularly to promote the health of the Longleaf Pine and its associated flora.

**Trip 6. Late September**  
Savage Neck Natural Area Preserve, Northampton County  
**Preserve guide, visit:** <http://www.dcr.virginia.gov/natural-heritage/document/pgsavage.pdf>

Savage Neck gives you a chance to walk along a secluded Chesapeake Bay beach and stroll among high dunes sparsely wooded with scattered Loblolly Pine (*Pinus taeda*). You may be a bit late for the large population of the federally threatened northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*), but it will be a wonderful time for migrating songbirds and monarch butterflies. The beach and dune vegetation is particularly interesting and you should watch for Sand Heather (*Hudsonia tomentosa*) in the higher dunes and the globally rare Sea-beach Knotweed (*Polygonum glaucum*) near the beach in the lower sandy dunes. ❖

*Jason Bulluck is director of the Virginia Natural Heritage Program, a division of the Department of Conservation and Recreation. Learn more about Virginia's Natural Area Preserves at [www.dcr.virginia.gov/natural-heritage](http://www.dcr.virginia.gov/natural-heritage)*



Open dune woodland at Savage Neck Natural Area Preserve. ©DCR-DNH, Gary P. Fleming



*From the President*

## Kudos to our Society for a job well done!

What a way for the Virginia Native Plant Society to end 2017! As the lead story in this issue indicates, the governor and secretary of natural resources awarded a grant to us of \$1.275 million for the purchase of 120 acres of land adjoining Mount Joy Ponds Natural Area Preserve in Augusta County. Funds were part of a legal settlement with DuPont for mercury poisoning to the South River in Waynesboro many years ago. We are charting new territory here and will have much to learn about the process of acquiring the land in accordance with the grant agreement. Stay tuned.

Many of you had the distinct pleasure of attending our Tri-State Native Plant Conference in Shepherdstown, W.Va., at the end of September. What an extraordinary training facility and setting for outdoor education! The planning committee from Maryland, West Virginia, and our own Potowmack Chapter outdid themselves in preparation and execution of this huge event. Our original worry about filling enough rooms to break even was for naught as we wound up having to cap participation and administer a waiting list. In addition to fabulous field trips to a variety of habitats, this time we offered workshops and labs as well. The food was abundant and varied; no one could go hungry at this venue! The 250-seat auditorium for the evening lectures was exceptional and there was not a bad seat in the house. Many thanks to our partners in West Virginia and Maryland, especially Karyn Moline, and kudos to Potowmack Chapter President Alan Ford and his able crew. Well done!

With the election for members of

the Board of Directors at the annual meeting, we welcome some new faces and express our appreciation to members who stepped off the board as their final terms ended Nov. 1. Congratulations to Janet Pawlukiewicz, Kathleen Stasulis, Peggy Troyer, and Laura Beaty, who are all profiled in this issue. Thanks to both Cathy Mayes and Joyce Wenger, who are staying on the board, but in different capacities. Cathy retired as our longtime treasurer, but is staying on as an at-large member who serves on our Executive Committee along with our officers. Joyce has moved from Publicity Chair to an at-large post, where she chairs the research grant selection committee. She and Cathy have served on that committee since its inception a few years ago. We also congratulate Second Vice President Sally Anderson and Secretary Betty Truax who were re-elected to a three-year term.

Thanks go out to Nick Ferriter, who volunteered to serve a one-year appointment as First Vice President when he saw that no one seemed willing to fill that vacancy last year. He brought a different perspective to the Executive Committee and helped us make better decisions. He also worked hard to find someone to fill the remainder of his term, a former member of his Northern Neck Chapter, Janet Pawlukiewicz.

We thank John Magee, a busy native plant landscape designer who served as our Horticulture Chair this past term. One thing that he began is a Native Plant Podcast, in which he has hosted interviews with important people in the native plant trade. You can view these at <https://www.nativeplantpodcast.com/>.

Kathi Mestayer of Williamsburg served as an at-large director for several terms. She has been a champion of Doug Tallamy and his teachings about the importance of native plant habitats. Thank you, Kathi, for your years of service on the board.

We were fortunate to have Marcia Mabee, owner of Naked Mountain Natural Area Preserve and author of the memoir *Naked Mountain*, serve as our Conservation Committee Chair. She was a tireless advocate for increased funding for the Virginia Natural Heritage Program and diligently built relationships with General Assembly members to advance our cause. She also succeeded in having the Society join coalitions in opposition to proposed gas pipeline projects through our western mountains. Marcia will be sorely missed; we have yet to find someone to take her position.

A longtime conservationist and passionate environmentalist, Shirley Gay, served on the board for many terms in different positions and decided to take a well-deserved break. For many years Shirley was Education Chair and, as such, coordinated the annual workshops. She was adamant that they should be science-based botanical lectures rather than gardening seminars. She created a new niche for us. Shirley also organized many of our field trips and always seemed to know just the right botanical leader. She has promised to continue to help us with some field trips. Thank you, Shirley.

As we look back over 2017 let's give ourselves a collective "Bravo!" for a job well done and then look forward to a new year filled with productive conservation successes. ❖

# Welcome to our four new board members

At our annual meeting held in Shepherdstown, W.Va., on September 29, we elected several new members to the Board of Directors. Please welcome them.

## **JANET PAWLUKIEWICZ**

First Vice President (2017–2019)

Janet (her last name is pronounced pahv-loo-KEV-itch) is a member of both the Northern Neck and South Hampton Roads chapters. In 2013, she founded the Plant Northern Neck Natives campaign and was its director through 2016. Now living in Virginia Beach, she volunteers for the Dolphin Discovery and Ocean Collection tours at the Virginia Aquarium and occasionally helps with bird surveys at Back Bay National Wildlife Refuge. At the beginning of her career, she worked at the Smithsonian Institution, managing the Discovery Room, an educational exhibit in the National Museum of Natural History. Later, she joined the U.S. Environmental Protection Agency, where she led efforts to foster watershed partnerships across the country, was chief of staff for the drinking water program, and, following 9/11, was appointed as the first director of EPA's Water Security Division. At the end of her career, she became an EPA Fellow at the Trust for Public Land, helping local communities design land-conservation programs aimed at protecting water quality. Janet has a B.A. degree in biology from Long Island University and a master's in public administration from George Washington University.

## **KATHLEEN STASULIS**

Treasurer (2017–2020)

Kathleen has more than 30 years' experience in accounting, computer consulting, business management, and taxation. She graduated from UC-Berkeley with a B.S. in business administration. She joined the tax department of Cherry Bekaert LLP in 1995. She is semiretired, working primarily during the busy tax season. Her professional affiliations include the Virginia Society of Enrolled Agents, where she is an active member and served as director of membership services for the Hampton Roads Chapter. She is also the treasurer of the South Hampton Roads Chapter of the VNPS. She lives in Virginia Beach with her husband, Steve.

## **MARGARET (PEGGY) TROYER**

Fund-raising (2017–2018)

Directly from Peggy: "I come to you from the mother ship of native plant interest, the state of Texas, where Lady Bird Johnson had the medians and berms of the interstates seeded with wildflowers and had them hold off mowing until the flowers had a chance to reseed. That's an area where civilization is new enough, if you just pull up the nonnatives then all kinds of interesting seeds buried under the hybrids will spring forth with wonderful natural gifts. Here in Norfolk, the gardens have been civilized for a long time, so that method only gets you greenbrier and Bermuda grass brought in by the birds! Still, there is a plethora of natives, and interest is growing. Shifting from dry alkaline to wet acid soil, I've been in need of guidance, and the VNPS has been a great resource. While serving on the fund-raising committee, I hope to assist in the painless enhancement



New board members, left to right, Peggy Troyer, Janet Pawlukiewicz, Laura Beaty, and Kathleen Stasulis. (Nancy Vehrs photo)

of our scholarship opportunities, the development of the Flora app, and other fine projects as they arise."

## **LAURA BEATY**

Horticulture Chair (2017–2020)

Laura has been volunteering at the Potowmack Chapter's propagation beds for more than 25 years, managing them for more than 15. She continues to enjoy opportunities to talk with groups about how native plants in wild communities and in home landscapes help support biodiversity, with a special interest in pollinators. She received a degree in horticulture in 1986 from Northern Virginia Community College.

## **RE-ELECTIONS, CHANGED CHAIRS, AND EMPTY CHAIRS**

Several members were re-elected (2017–2020): Sally Anderson, Second Vice President; Betty Truax, Secretary; Emily Ford, Education Chair; Rod Simmons and Charles Smith, Registry Site Co-Chairs. Two members switched to different positions, for the same term: Joyce Wenger, Director-at-Large, Research Grants, from Publicity; Cathy Mayes, Director-at-Large, from Treasurer.

We are still looking for enthusiastic volunteers for Conservation and Publicity chairs. ❖

## BLACK COHOSH

## Seed Germination and Conservation

Article and illustrations by W. John Hayden, Botany Chair

Like many plant enthusiasts, I have spent a considerable amount of time planting seeds. Every year I grow many vegetables—my garden always includes some annual bedding plants—and I sow seeds of cover crops (winter wheat, winter rye, and buckwheat) by the tens of thousands. While I have committed vast numbers of propagules to moist soil, I cannot say that I have watched every single one sprout. Nevertheless, I certainly have observed the germination process many, many times for lots of different seeds. For these seeds of garden plants, germination is quite rapid, just a few days to maybe as much as two weeks, tops—provided that temperature and moisture are appropriate. Further, in the usual case, the embryonic root (radicle) emerges first, followed in short order by embryonic leaves (cotyledons) and the first bits of the seedling shoot (epicotyl). Sometimes, as in Garden Peas, the cotyledons stay below ground, but the pattern of radicle shortly before epicotyl is still the typical situation.

In contrast, anyone who has grown temperate zone trees, shrubs, or wildflowers from seed knows that our wild native plants do not always follow the quick and straightforward pattern described above for domesticated plants. Often, germination of native plant seeds can be a protracted process requiring months of patient waiting. Further, our native species may require a particular sequence of moisture and temperature exposure before dormancy breaks and germination begins. Usually, native species time the germination processes to match

the natural progression of seasons. Seeds that mature and disperse in late summer or fall will be exposed, first to warmth and moisture, and then to the cold temperatures of winter, before germinating in the warmth of spring. The savvy native plant gardener employs a process called stratification to mimic this natural cycle; seeds sown in moist soil, or merely wrapped in moist paper towels, are given a winter-like cold treatment in order to prompt germination when brought back to warmth.

*Actaea racemosa* (Black Cohosh), our 2017 VNPS Wildflower of the Year, exhibits an interesting twist on the usual cold stratification requirement: within each seed, the radicle and epicotyl have different requirements for breaking dormancy. In nature, Black Cohosh seeds (Figure 1) mature and disperse while temperatures are still reasonably warm. Sooner or later the seeds will be moistened by autumnal rains, and the germination process commences with emergence of the radicle. The epicotyl, however, at this time, remains dormant. Time passes, fall becomes winter, and winter brings cold temperatures that provide the necessary “stratification” effect required by the epicotyl.

When warm spring temperatures return, the epicotyl becomes active and emerges, establishing the shoot system of a Black Cohosh seedling. Baskin and Baskin (1985) studied seed germination in Black Cohosh. For seeds sown in late September and exposed to ambient temperature conditions of Lexington, Kentucky, radicles emerged in early November,

but epicotyls remained inactive until mid-March. Seeds of *Hepatica* (*Anemone acutiloba*), also studied by Baskin and Baskin (1985), show a similar pattern.

Baskin and Baskin (1985) offered several hypotheses for the adaptive value of epicotyl dormancy observed in Black Cohosh and *Hepatica*. For example, cotyledons that remain inside the seed may suffer less predation than would be the case if these young and tender tissues were exposed all winter long. Further, retention in the seed may ameliorate extreme fluctuations in winter temperatures experienced by the epicotyl meristem. Finally, the Baskins noted that precocious development of a root system could help provide water and mineral nutrients for the epicotyl in spring better than if both root and shoot were developing simultaneously.

It occurs to me that there may be another perspective on precocious radicle and delayed epicotyl germination in *Actaea* and *Anemone*. Both of these plants are members of Ranunculaceae, a family in which seeds characteristically have “underdeveloped” embryos. “Underdeveloped,” of course, is in comparison with seeds of other plants. Figure 2 shows a Black Cohosh seed that has been sectioned longitudinally with a razor blade. Most of the seed consists of endosperm cells full of stored food for use by the embryo. The embryo of this fully mature seed is the remarkably small heart-shaped blob near the narrow end of the seed, the size and shape of which is much like a

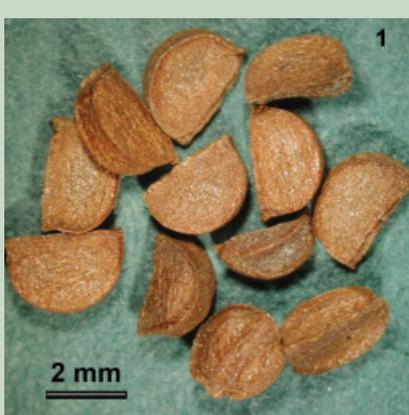


Figure 1. Dormant seeds of *Actaea racemosa*.



Figure 2. Dormant seed of *Actaea racemosa*, longitudinal section. Embryo is the small heart-shaped structure (bottom), everything else contained by the seed coat is food-storing endosperm.

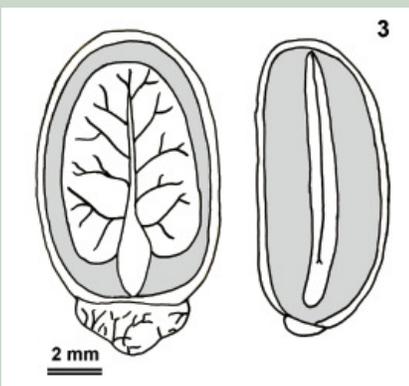


Figure 3. Dormant seed of *Ricinus communis*, longitudinal sections. Endosperm is the gray shaded area between the seed coat and the well-developed embryo. Redrawn from J. Sachs (1887) *Die Vorlesungen über Pflanzenphysiologie*, Wilhelm Engelmann, Leipzig.

textbook example of an early embryo shortly after fertilization of the egg. In other plant families, seeds generally have much larger embryos at maturity. Castor Bean (*Ricinus communis*) (Figure 3) provides a convenient example; though endosperm volume is still greater than that of the embryo, cotyledons of Castor Bean embryos are well-developed, and the whole embryo extends for nearly the full length of the seed. Perhaps epicotyls of *Actaea racemosa* have delayed emergence from the seed because they are anatomically and physiologically too immature to germinate when the seeds disperse in autumn. I wonder if the cotyledons and epicotyls of Black Cohosh are truly dormant and inactive during winter. Might they continue to develop through the winter, whenever temperatures are warm enough to permit growth? There certainly is ample food stored in the endosperm, and the precociously developed root would be able to supply water and minerals. Perhaps it is not until spring that the cotyledons and epicotyl are developmentally competent to emerge. It should be a simple matter to monitor Black Cohosh seed structure over the full course of

germination to determine whether epicotyls are truly winter dormant or whether they are opportunistically active, following a cryptic post dispersal developmental process and getting ready for eventual germination in spring.

Why do the details of Black Cohosh seed germination matter? As pointed out by Kaur et al. (2013), the growing popularity of Black Cohosh in herbal medicine threatens unsustainable overharvesting of wild populations for its roots and rhizomes. Cultivation of Black Cohosh could alleviate pressure on wild populations; thus, efficient propagation by seed could be an important step to make that conservation-worthy goal a reality. ❖

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- Kaur, B., J. McCoy, and E. Eisenstein. 2013. Efficient, season-independent seed germination in Black Cohosh (*Actaea racemosa* L.). *Amer. J. Plant Sciences* 4: 77-83.



Travelers on the Society's upcoming trip to the Great Smoky Mountains are in for vistas such as this one from Clingman's Dome. (Photo by Sally Anderson)

#### FIELD TRIPS: SAVE THE DATES!

The Society is sponsoring two upcoming field trips, the botanical explorations of which you won't want to miss. The Great Smoky Mountains trip is **April 8-14** and the journey to Southwest Virginia and the Grayson Highlands is **June 10-16**.

For details, email [vnps.org@gmail.com](mailto:vnps.org@gmail.com) or call 540-837-1600.

## Society mourns passing of beloved naturalist



Stan Shetler shares a natural history lesson with his son Stephen. (Shetler family photo)

For lovers of Virginia's natural world, early December was a time of sadness with the news of the passing of Stanwyn G. Shetler at age 84. A longtime supporter of the Virginia Native Plant Society, he was a man of many talents. Born in Johnstown, Pa., he became interested in the natural world in the sixth grade when he began bird watching. After graduating as valedictorian of Johnstown Christian School, where his father was principal, he attended Eastern Mennonite College before going on to earn bachelor's and master's degrees from Cornell University.

Stan went to the Department of Botany, National Museum of Natural History of the Smithsonian Institution in 1962, directly from doctoral studies at the University of Michigan, where he earned a Ph.D. in systematic botany. He spent his whole professional career at the Smithsonian before retiring at

the end of 1995. Beginning as an assistant curator, he rose to serve as associate director and then deputy director of the National Museum of Natural History.

Stan's naturalist interests were wide-ranging, but he was a recognized expert on the bellflowers (genus *Campanula*) and the flora of the Arctic. His publications numbered well over 100 scientific, technical, and popular titles, and several books that include *Annotated Checklist of the Vascular Plants of the Washington–Baltimore Area*.

Stan was program director of the international Flora North America Program, which pioneered the use of computers for organizing taxonomic information and set the stage for the subsequent effort to prepare a modern treatise of North American plants. The data produced from this project were among the first in the world to document the climatic phenomenon now known as global warming.

He was a frequent lecturer, teacher, and consultant. He served on the

Piedmont Environmental Council board (1985–1988) and several terms on the board of directors of the Audubon Naturalist Society, including three years as president. He was a charter member of the Virginia Native Plant Society and served on the state board of directors as Botany Chair and Director at Large. He taught plant identification courses for the U.S. Department of Agriculture Graduate School and at Northern Virginia Community College.

Honors include election as a fellow of the American Association for the Advancement of Science for “contributions to the formation of electronic data banks and the computer registry of botanical specimens” and as a fellow of the Washington Academy of Sciences. Upon retirement he was appointed botanist emeritus at the Smithsonian.

In 1995, he received the Paul Bartsch Medal, the Audubon Naturalist Society's top award for contributions to natural history and conservation. In 1988, he was invited by the Chautauqua Institution to present the featured lecture at the celebration of Roger Tory Peterson's 80th birthday. Stan received the Piedmont Environmental Council's Individual Award for Contributions to Environmental Improvement for his role in drafting a Vegetation Preservation Policy for Loudoun County. He was elected to membership in the Washington Biologists' Field Club and served as both vice president and president.

Stan is survived by Elaine, his wife of 54 years, two children, and two grandchildren and by two sisters, a brother, and a stepmother.

—*Information from Stephen Shetler*

## Cornus florida: A winter look at the 2018 WOY

By vote of the Virginia Native Plant Society Board of Directors, Flowering Dogwood, *Cornus florida*, will be the 2018 Virginia Native Plant Society Wildflower of the Year. One hopes that all Virginians are able to identify Flowering Dogwood because, after all, it is our state flower (and state tree). This is an appropriate time to summarize how to recognize *Cornus florida* in winter. First, as I like to tell my students, “Dogwood can be recognized by its distinctive bark.” After a brief pause for laughter (or groans), I explain that the bark of mature trees consists of a densely tessellated pattern of small plates, a pattern of scales finer than that of any other local tree (Figure 1).

But this bark pattern is not manifest until the tree is relatively old. Younger specimens can also be recognized in winter by their distinctive flower buds; flower buds terminate clusters of upturned branchlets, and are roughly spherical with a small central point. Viewed closely, the four bud scales that cover these flower buds will be distinguished. And, if one watches Dogwood bud break closely, one will learn that these four bud scales first

diverge slightly, then, by a process of intercalary growth (i.e., expansion from their bases) they enlarge to form the characteristic four bracts that many mistake for petals.

Finally, overall branch patterns of *Cornus florida* are distinctive. Each lateral branch grows more or less horizontally for a limited distance before curving upward; subsequently, these upturned branch tips undergo only incremental growth each season. Nevertheless, further lateral extension of the branch does occur, but only by stimulation of lateral buds below the upturned slow-growing tips. The process repeats over and over, creating branch systems characterized by successive horizontal segments interrupted periodically by upturned branchlet tips. This branch pattern is best seen in winter when the basic architecture is not obscured by leaves. But it is worth noting in closing that it is this distinctive branch pattern that so effectively displays the early spring bract-bordered flower clusters that are the crowning glory of our 2018 Wildflower of the Year.

—W. John Hayden, Botany Chair

## Cowbane Prairie expanded in mercury settlement

In October, Gov. Terry McAuliffe and Virginia Secretary of Natural Resources Molly Ward helicoptered into the Cowbane Prairie Natural Area Preserve in Stuarts Draft, Augusta County, to announce an expansion of the preserve as the first land acquisition to be made under the DuPont Waynesboro Natural Resource Damage Assessment and Restoration settlement. One of the largest environmental settlements in U.S. history, it creates a fund of \$50 million to help offset damage caused by dumping mercury into the South River by Dupont in nearby Waynesboro.

Two new tracts, totaling 84 acres, bring Cowbane Prairie to 147 acres. The new tracts also add a half mile of frontage on the South River.

DCR describes the site as follows: “On the western slope of the Blue Ridge in the Shenandoah Valley, Cowbane Prairie Natural Area Preserve protects the last remnants of wet prairies and calcareous spring marshes—now rare natural communities that once blanketed much of the Shenandoah Valley.” Cowbane Prairie is home to 11 rare plant species, and the adjacent South River provides habitat for two rare



Figure 1. *Cornus florida*, bark of a mature tree. Figure 2. *Cornus florida*, next spring's flower buds in late fall, just before leaf drop. (John Hayden photos)

freshwater mussel species. Included on the plant list are Queen-of-the-Prairie (*Filipendula rubra*), Larger Blue Flag (*Iris versicolor*), and Marsh Speedwell (*Veronica scutellata*).

The site is the largest concentration in Virginia of critically imperiled tall grass species; tall-grass prairies have become a nearly lost landscape in the state.

The Cowbane Prairie Natural Area Preserve was established in 1997 as a joint project between The Nature Conservancy and the Virginia Natural Heritage Program, a division of DCR.

—Nancy Sorrells, Editor

## Tri-State Conference

# C&O Canal walk brings botanical delights

Article by Richard Stromberg, Piedmont Chapter. Photos by Nancy Sorrells.



The Appalachian Trail leaves Harpers Ferry on a walkway on the railroad bridge that crosses the Shenandoah River at its junction with the Potomac. From there the AT continues on the C&O Canal towpath, which lies between the canal and the Potomac. At the start of the walk, the river could not be seen through the foliage, but farther along it was as close as the canal. Water could not be seen in the canal: at some points it was dry and at other places any water was completely covered with Common Duckweed (*Lemna minor*).

Three species of very large, riverbank-loving trees dominated the forest: Black Walnut (*Juglans nigra*), Sycamore (*Platanus occidentalis*), and Silver Maple (*Acer saccharinum*). The walk was redolent of overripe pawpaws.

With the exception of a clump of Orange Jewelweed (*Impatiens capensis*), and out-of-season Star Chickweed (*Stellaria pubera*) and White Campion (*Silene latifolia*), the only flowers were in the Aster family (Asteraceae). We saw three yellow daisy-type composites: Wingstem (*Verbesina alternifolia*), Thin-leaved Sunflower (*Helianthus decapetalus*), and Cut-leaf Coneflower (*Rudbeckia laciniata* var. *laciniata*); three asters: Small White (*Symphotrichum racemosum* var. *racemosum*), Heart-leaved (*S. cordifolium*), and Calico (*S. lateriflorum*); and three goldenrods: Tall (*Solidago altissima* ssp. *altissima*), Broad-leaved (*S. flexicaulis*), and Blue-stemmed (*S. caesia* var. *caesia*).

We saw both Leafcups, White-flowered (*Polymnia canadensis*)

and Hairy (*Smallanthus wedalia*, formerly *Polymnia wedalia*).

White-flowered Leafcup was seen intermittently along the towpath, but, as usual in my experience, it had no ray flowers, just puffs of stamens in the central disk. I have seldom seen it have white rays. We saw a large clump of Hairy Leafcup off the towpath. It is also known as Yellow-flowered Leafcup, and has always had yellow rays when I have seen it, but this time the rays had dried up. I can identify these two species by their large leaves, up to a foot long and wide. White-flowered Leafcup leaves have 3–5 pointed lobes, shaped somewhat like an oak leaf. Hairy Leafcup leaves are maple-leaf-shaped and have winged petioles.

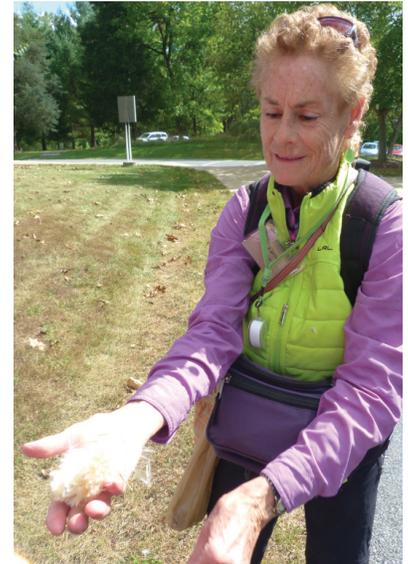
Turning off the towpath a few times to get close to the Potomac allowed us to see some wet-loving plants. Mistflower (*Conoclinium coelestinum*) was still flowering. Halberd-leaf Rose-mallow (*Hibiscus laevis*) had gone to seed but could easily be identified by its leaves.

Unfortunately we ran out of time and did not get to the Smooth Wild-petunia (*Ruellia strepens*) and Late Thoroughwort (*Eupatorium serotinum*) that I had seen on my scouting trip. ❖

*Our 2017 Annual Meeting was part of the Tri-State Native Plant Conference, sponsored by the Virginia, West Virginia, and Maryland native plant societies and spearheaded in Virginia by the Potomack Chapter. It was held Sept. 29–Oct. 1 at the U.S. Fish and Wildlife Service's National Conservation Training Center in Shepherdstown, W.Va.*



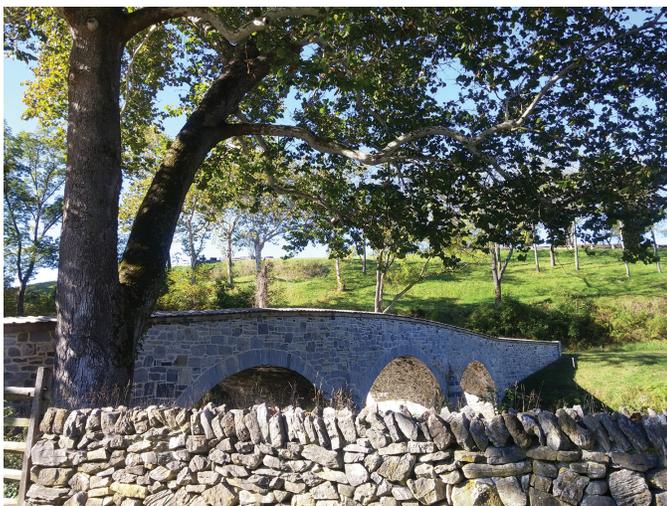
Scenes from along canal included (top to bottom), Wild Bur Cucumber (*Sicyos angulatus*), Richard Stromberg helping identify a goldenrod, a giant Silver Maple, and two participants working on a plant ID.



## A Look Back at the Tri-State Native Plant Conference



Clockwise from top left: Carrie Blair helps key out a tree ID on her group walk; a hollow tree along the C&O Canal; Carrie Blair illustrates her discussion with seeds from Common milkweed (*Asclepias syriaca*); milkweed going to seed; a witness tree (American Sycamore, *Platanus occidentalis*) on the Antietam Battlefield; and bonfire talk by Kevin Dodge on the sounds of nature. (Nancy Sorrells photos)



### VIRGINIA NATIVE PLANT SOCIETY

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Next submission deadline: Feb. 20, 2018

## Winter Workshop to focus on forests and trees

Trees will be the theme of the 2018 Virginia Native Plant Society Winter Workshop on Saturday, March 10, at the University of Richmond.

An impressive slate of speakers will address participants in the day-long event: John Seiler, Desiree Narango, Lytton Musselman, and Ryan Klopf.

Seiler, from Virginia Tech, will speak on tree biology. An Alumni Distinguished Professor, Seiler has investigated the environmental stress effects on woody plant physiology and delved into relationships between forests and developing climate concerns.

Narango, from the University of Delaware, will discuss relationships between trees, insects, and birds. She studies the ways in which plants and

animals interact with each other, their environment, and with humans.

Musselman, a longtime supporter of the VNPS and a professor at Old Dominion University, will talk about the restoration of the Longleaf Pine. Much of his work on the Longleaf has taken place at the Blackwater Ecological Preserve that is part of the Zuni Pine Barrens Natural Area Preserve.

Rounding out the day's speakers is Ryan Klopf, the Mountain Region Steward of the Virginia Natural Heritage Program. He will enlighten the group on old-growth forests in the preserves that he stewards.

More information about the Winter Workshop, including registration information, will be available at the end of January.



Forests and trees, such as old growth forest, (seen here in Ramseys Draft Wilderness) will be the focus of the Winter Workshop. (Lynn Cameron photo)

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