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Editor's Note: In this issue Edith Schrot has been good enough to provide us with another article on an important New York state botanist, Anne Perkins. Thanks Edith, and maybe this will inspire others to write about their favorite botanist, we welcome any botanically related article or note! We also have an article on violets by Harvey Ballard, whose enthusiasm for pesky flowers is infectious, as those who took his violet workshop a number of years ago can testify. Rich Ring rounds out our articles in this issue with a report on a plant assessment technique that may be useful to land managers and conservation personnel – Coefficients of Conservatism. We close with a list of this year's field trips and workshops.

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Anne E. Perkins M.D. (1873 – 1961)

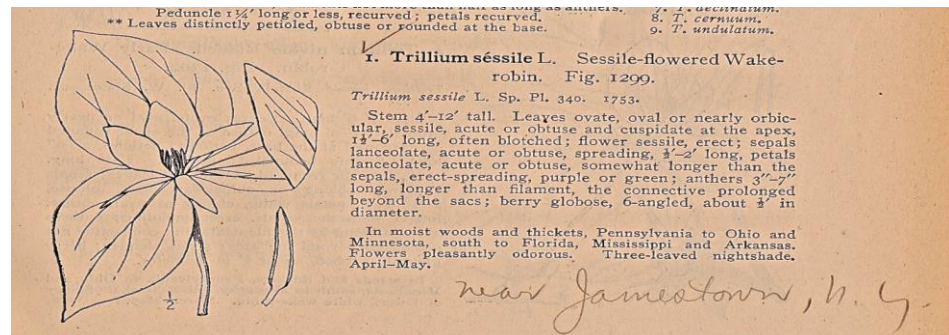
by Edith F. Schrot



Anne E. Perkins ca 1908

Historical records for New York State plants include numerous herbarium specimens collected by Anne E. Perkins. Early publications on the flora of New York State, including those by Homer House and Charles A. Zenkert, relied heavily on her data. Much of her field work in New York State occurred around Gowanda and other localities in Cattaraugus, Erie and neighboring counties from 1907 to 1932. But her work extended beyond that time period, and beyond the State and beyond botany. She was a highly accomplished “birder”, as well as a physician, educator, researcher, lecturer and published writer on many and varied subjects.

Anne established herself as a respected colleague of distinguished New York botanists, supplying them with abundant data from the western regions in the state. In the 1920's she and Homer House (NY State Botanist 1917-1948) exchanged letters weekly, sometimes in an exchange of two per week.¹ She told House about the station for the rare *Trillium sessile* in Chautauqua County and sent him the first known collection of *Habenaria hookeri* from the eastern part of New York State. In her correspondence with Charles Peck (NY State Botanist 1867 – 1915) she advised him that populations of *Cypripedium reginae* were common in the swamps of Collins, Erie County and on the Cattaraugus Indian Reservation. So common that the Senecas sold them by the thousands in the markets of Buffalo and Jamestown, much to her dismay.²



Anne's copy of Britton and Brown was filled with notations as above.

She led botanists from the US Department of Interior to her newly discovered half-acre site in Cattaraugus County of *Astragalus glycyphyllos*, undocumented for the US at that time except for a few transient plants in Massachusetts and New Jersey. With a well-founded confidence and selfless interest, she discussed and even argued issues of botanical identification and taxonomy as a respected equal of leaders in the field, including her “good friends” Ezra Brainerd and Milton S. Baxter, as well as A.J. Eames, E.C. Ogden, N.L. Britton, K.M. Wiegand and M.L. Fernald.³

In his introduction to *The Flora of the Niagara Frontier Region*, Charles A. Zenkert credited Anne E. Perkins' botanical collections as not only “a major source of local floristic data” for that 1934 publication but “one of the most important sources”.⁴ On the occasion of Anne Perkins' retirement in 1932, C.A. Zenkert wrote: “it was a rare treat for members of the Botanical Section of the Buffalo Museum to accompany her on excursions over the territory that she knew so well, and to be introduced to not a few plants that grew nowhere else within our region” (western New York State). Such trips, far from being sauntering “May Walks” were invariably strenuous, albeit exhilarating experiences, for Dr. Perkins set a fast pace and covered a great deal of ground.”⁵ Homer House's *Annotated List of the Ferns and Flowering Plants of New York State*⁶, and his *Wildflowers*,⁷ relied on abundant data drawn from Perkins' collections. Her complete collection of orchids was considered definitive for western New York at the time.⁸

Beyond New York State, her botanical field work and associations extended to Florida, Texas, Alaska, Maine, New Hampshire, New York, Arizona, California, New Jersey, Alberta, Nova Scotia, the Gaspé Peninsula, British Columbia, Puerto Rico, and Mexico. After her retirement in 1932, she continued to collect extensively in Florida and the Keys. Herbaria at the New York State Museum at Albany, the Buffalo Museum of Natural History, Cornell University, Harvard University and the Portland Society of Natural History house her extensive collections.

Clark S. Beardslee and Harold D. Mitchell, in their 1965 *Annotated Checklist of the Birds of the Niagara Frontier Region*, acknowledged their “great debt for (Anne Perkins') information on field trips and for her many letters relating to the status of birds in (her) area.”⁹ As a personal friend of Elon Eaton, author of *The Birds of New York*,¹⁰ she advised him regarding birds in her area and accompanied him on many field trips.

Anne Perkins wrote prolifically on a wide range of topics that included plants, birds, linguistics (*The Maine Dialect*), psychiatry (*Psychoses of the American Indian*) and mental health. She published her work in journals (*Rhodora*, *Torreya*, *Psychiatric Quarterly*, *American Speech*, *Garden Journal of the New York State Botanical Society*, *Journal of the Josselyn Society*), educational publications (*Yearbook of the Gowanda State Homeopathic Hospital*, 1930), magazines (*Nature*, *The Vermonter*, *The Maine Naturalist*, *Hobbies Magazine of the Buffalo Museum of Science*, *Nature Sketches*) and newspapers (*Buffalo Courier Express*, *Lewiston Sun Journal*, *Lewiston Evening Journal*). In 1960, she deposited many of her unpublished manuscripts in the archives of the Portland Society of Natural History.

Her address book contained hundreds of names of friends, colleagues and associates – academics, professionals, schools, charities, professional societies, government officials – and she kept up a lively correspondence with many of them. Elbert Hubbard, founder of the Roycroft Artisan Community in East Aurora, New York, was a personal friend.

Anne Perkins was a dedicated physician, highly regarded by her colleagues and associates, and a beloved mentor. Perkins Hall, a residence for married employees at Gowanda State Hospital, was dedicated to Anne in 1934 and named in her honor. Giving financial help to many people for education, for support in difficult financial straits, or to set up a business, she was known for her generosity and compassion. Those who knew her described her as “dedicated, heroic and brilliant, a taskmaster with high standards, and a wonderfully kind friend.”¹¹

Born on 21 January 1873 on a farm in Wells, Maine, Anne was the youngest of six children of Samuel Hanscom Perkins and Sarah Allen Perkins. Samuel was an ambitious and innovative farmer. Sarah was a



Quaker who instilled curiosity, confidence, a strong work ethic and a love of poetry in her children. Both Samuel and Sarah regarded education highly and equally for all of their children, male and female.

When Anne was about five years old the family moved from Wells, by horse and cart, to a farm about ten miles away on Blackberry Hill in Berwick, Maine. Anne and her siblings attended a one room schoolhouse not far from their home. She said that the five mile walk to and from school with her brothers and sisters was where she began her study of birds and flowers. Her education continued at the Berwick Academy, Maine, where she graduated at age 17 in 1891 with a Classical Diploma at the top of her class.

In 1897 she received an M.D. degree from the Boston University School of Medicine, the first institution in the world to formally educate female physicians. Boston University taught homeopathic as well as conventional medicine. Since both systems relied heavily on plant materials for treating ailments at that time, Anne's early and continuing interest in and knowledge of botany served her well.

After graduation, she worked as assistant physician at Westborough Massachusetts Insane Hospital and then in general practice in New Hampshire, Colorado and Georgia. In 1907 she took a position as physician and psychiatrist, in charge of the 700 female patients at the Gowanda State Homeopathic Hospital, in Helmuth, Erie County, New York. For twenty five years she was on the staff there and had access to what she considered "one of the finest botanical fields in the state."¹² Her companions included distinguished professionals, local Senecas who taught her their uses of native plants, interested townspeople and even children. Ruby Shindler, clan mother and mother of Seneca artist Carson Waterman was one of them.¹³

When Anne retired in 1932 she moved back to her native Maine, continuing botanical field work including extensive collections from Florida and the Keys. Finally, she also had time to do the bulk of her writing, and to lecture to diverse audiences. She worked a vegetable garden up to the year of her death in 1961 at the age of 88.



Anne (r) with sister Effie, also a physician, Berwick Maine 1948.

All of her many professional and social accomplishments may seem out of context for a woman of her time, but in fact, they were not. She grew up and was educated during the swelling wave of an international feminist movement in the western world that began in the mid-nineteenth century. This movement has been seen as a reaction against the widespread Victorian image of women's "proper" role and social sphere.¹⁴ Amateur botany had always been acceptable for women, but now advances were being made by women as advanced degree professionals.¹⁵ It is estimated that by 1900, 12% of all homeopathic physicians, like Anne Perkins, were female; of the total physician population between 1900 and 1910, 6% were female. She and her female colleagues were a minority, but not a rarity, and figured prominently in the history of American medicine.¹⁶ In combination with her family background and the social context of the segment of society to which she belonged, Anne grew up in an environment that supported and nourished the germination and subsequent development of the exceptional person that she became. She developed a role and social sphere of her own choosing that exceeded "proper." She did have "uphill battles" for acceptance and recognition, waged mostly within the medical profession. But those battles, in most instances were won.

Anne considered her most important contribution "to the world" to be the prolonged medical research that she did to

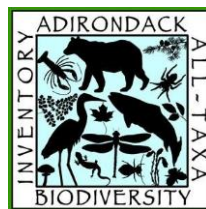


identify, isolate and treat typhoid carriers. The disease took her best friend on staff. She found that the gall bladders of carriers were “hotbeds” of *Salmonella typhi*, the infectious agent of the disease, and recommended removal of the gall bladder. Her efforts, persistence and endurance of initial ridicule resulted in this treatment becoming routine in the state hospitals.¹⁷ On the other hand, she remarked on several occasions that “my idea of heaven is an endless swamp with plenty of time and fortitude to navigate it.”¹⁸

The World and Heaven were integrated in the life of Anne E. Perkins; duty fulfilled, bliss experienced; service rendered and the lives of others enriched through her.

Footnotes

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We are excited to announce the date and location of the 2016 Adirondack ATBI BioBlitz! The event will be based at the Redwood Hill Preserve in Redwood, NY on June 18th, 2016. Regional naturalists will convene to observe all taxa, including butterflies, dragonflies, plants, fungi, mammals, and other organisms small and large. We are thankful to our local hosts, the Indian River Lakes Conservancy for sharing their lands for our BioBlitz effort. Bat and Moth Night the evening before - families and friends welcome both Friday night and Saturday. Other nearby attractions include Wellsley Island State Park and the Thousand Islands. For more information, contact Ezra Schwartzberg ezra@adkres.org or visit the ATBI Facebook page <https://www.facebook.com/AdirondackATBI/>



Wait. What? MORE violets?

by Harvey Ballard

Okay, I admit it, violets can be a pain, but they're cute. They're also really fascinating plants. They do lots of interesting biological things. I've studied them for 35 years, and I have to say that some days I hate them and other days I love them; it depends on what side of the bed I get up from.

Lots of people know that many violet species hybridize, and that this causes some problems for identification. Some have argued that the bewildering variation we find in certain species is due to phenotypic plasticity, where the local environment causes plants to take on different traits. Then you have problems trying to navigate the minefield of differing taxonomic treatments of the same plants, where specialists have offered different ways to treat the variation, and they often use different names as well. It's (almost) enough to drive somebody to go into accounting instead.

Let's look, for instance, at the stemless blue violets, formally called subsection *Boreali-Americanae* (W. Becker) Brizicky, in the genus *Viola* (the "true" violets). At one end of the spectrum we have the taxonomic concepts promoted by Ezra Brainerd, who devoted 25 years of his life in the early 1900s to the study of North American violets. Using a common garden approach and a lot of field studies, he described the biology and reproductive behavior of species and hybrids at a level of detail that we've all mostly ignored until now. He recognized 30 species, 3 varieties, and 80 hybrids just in the stemless blue violets of the United States and Canada alone.

At the other end of the spectrum we have specialist Landon McKinney, who studied violets in the 1990s up until his recent untimely passing. He emphasized vegetative features and recognized 9 species, 6 subspecies or varieties, and no hybrids in the stemless blues. Specialist Norman Russell (who published many papers on violets in the 1950s and 1960s) accepted 22 species and 1 variety in the same group, largely emphasizing foliage features in his keys. Lastly, Nir Gil-ad (who investigated the stemless blue violets for his doctoral research in the 1990s) recognized 15 species and 2 infraspecific taxa. Gil-ad provided the first truly comprehensive and detailed descriptions of some stemless blue violets (Gil-ad, 1997). He also pioneered the use of scanning electron microscopy to examine small details of the lateral petal hairs and seed coats in violets, showing that these microscopic features had species-diagnostic importance and could be used to separate hybrids from species.

During most of my professional career I mostly followed the concepts of Norman Russell's generation, delineating species more broadly. Three years ago I took a series of trips to the mountains of Virginia and traveled around with botanical experts to see the violets there, which changed everything. I suddenly realized that "northern" concepts didn't work for those violets. I also ran into quite a few violets I couldn't figure out or put a name on. Since then, my students and I have taken a completely different approach to violet research. We have begun our reinvention of violet taxonomy by borrowing some of the successful approaches used by earlier specialists. We are now using Brainerd's common garden approach and his methodologies for determining seed production in chasmogamous (showy, cross-pollinated) and cleistogamous (tiny, self-pollinated) flowers to compare violets from different areas under the same conditions, and are also using seed fertility and other features to distinguish hybrids from species. We are applying Gil-ad's meticulous examination of traits across the violet plant body, and his use of scanning electron microscopy to compare minute features of lateral petal trichomes and seed coats. We have added our own multivariate statistical methods to the mix to determine which traits show statistically significant differences across populations, and how many lines of evidence we have supporting the recognition of a set of populations as a distinct species. And, we have been making intensive local and regional field studies on violet populations at sites in various states.

In determining "what is a species", we are utilizing a relatively new concept, the Unified Species Concept



of Kevin de Queiroz (2007). This concept basically states that any evidence showing that a set of populations is on a different evolutionary trajectory as a metapopulation from other sets of populations is sufficient to recognize a species. Rather than simply forming an opinion about what we think should be recognized as a species, as we've generally done previously, we are using the concept as a (hopefully) more objective filter of evidence to determine which sets of populations meet the criteria for acceptance as a distinct species. This species concept encourages us to find as much evidence as possible to determine the evolutionary status of a given set of populations. Of course, the more data we have to show sets of populations are consistently different, the better. This may include physical trait differences, blooming time, habitat differences, genetic differentiation, and so on. This species concept also provides us a means of distinguishing "de novo" or recurrent hybrids that are found sporadically in the area of geographic overlap between two hybridizing species, since the recurrent hybrids are not proliferating their own populations independent of the parental species.

Applying the new species concept, and using the evidence from diverse and successful study approaches of other specialists, augmented by intensive field studies, has revealed some big surprises in violet diversity of the region—diversity we have been misinterpreting or simply missing altogether. An example that directly affects the New York flora is the *Viola subsinuata* species complex, or *Viola palmata* according to some botanists. Most have considered it a very variable species primarily of the Appalachian Mountain region (Fig. 1); some (including me, previously) have considered it to be a hybrid assemblage. Over the last three years we have accumulated very strong evidence that this "variable species" is made up of SIX distinct species, plus some hybrids possessing undivided leaf blades.

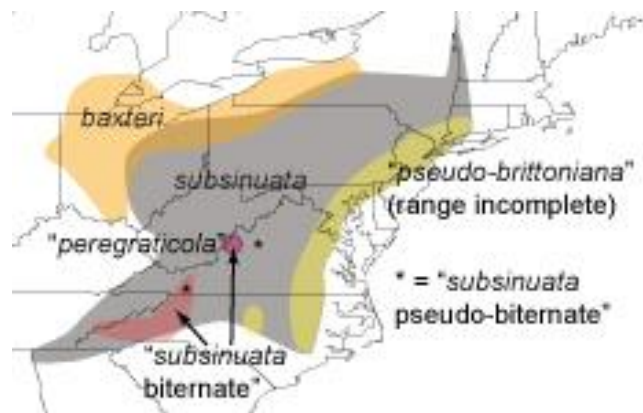


Figure 1. *Viola subsinuata* group taxa in the northeast.

Most of these distinct species are narrow endemics found over a relatively small geographic range. They are dramatically different in their cleistogamous seeds (Fig. 2), showing divergence in size, shape and color pattern, but also display differences in other features of foliage and flowers. In New York, *Viola baxteri* House, with its deeply biternate leaf blades (Fig. 3) inhabits a few sites in western counties, while shallowly lobed *Viola subsinuata* (Greene) Greene (also Fig. 3) is found in a few south-central counties. An undescribed species (*Viola pseudo-brittoniana*), with deeply divided leaf blades that we are still getting a bead on, grows in drier woodlands in counties not too far from the Atlantic coast. It is probably the plant represented in the first two images of *Viola subsinuata* on the Go Botany website (<https://gobotany.newenglandwild.org/species/viola/subsinuata/>). At any given site, you are likely to encounter a few hybrid plants involving one of these species and the common woodland violet, *Viola sororia* Willd., which mimic the true *Viola subsinuata* of the higher Appalachians and Western Allegheny



Plateau but produce no chasmogamous capsules, have reduced seed set in the cleistogamous capsules, and produce heterogeneous seeds in each capsule that recombine features of the parental species. We have been studying several living populations of *Viola baxteri* and *Viola subsinuata* in Ohio, and *Viola subsinuata* and three other undescribed species in the mid-Appalachians. We are especially eager to learn more about *Viola baxteri* in New York (the type locality being at Fishers in Ontario County), and about *Viola pseudo-brittoniana*. If you have run into any of these critters, please contact me!



Figure 2. *Viola baxteri* (left) and *V. subsinuata* (right) seeds.



Figures 3. *Viola baxteri* (left) and *V. subsinuata* (right)

We have evidence to accept approximately 40 species of stemless blue violets, and we are gathering more information on 10 others that we know little about but which may be distinct as well. We have run into the same situation of underappreciated taxonomic and evolutionary diversity in nearly every violet complex we have begun investigating, including some stemless white and stemmed yellow violets. There is a lot more work to do. If you would like to get involved, or if you know of an unusual violet population, send me an email. I am in the process of posting materials and resources to a North American violets website to aid others in identifying violets and also to let them know the state of what we (think we) know, what should be done, and how to do it. There are, indeed, many violet mysteries out there, right in our own backyards. Together, we can investigate them and gradually figure them out.

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Developing Coefficients of Conservatism Values for New York's Native Flora.

By Rich Ring, New York Natural Heritage Program

The landscape of New York State has been dramatically and continually modified by non-indigenous peoples and associated non-native plants for over 400 years. Today's landscape consists of a mosaic of disturbed/developed lands and natural areas in varying states of ecological integrity, many recovering from past and often ongoing disturbance. Ecologists and conservation biologists are often tasked with assessing and comparing the "quality" of natural areas based primarily on botanical surveys. Making such assessments, and standardizing them across sites, can be difficult. Measures of diversity, such as species richness, may rank sites diverse in non-native species as high quality. Species richness is also affected by the size of the sampling area (Fleishman *et al.* 2006). Focusing on rare species may overlook sites of otherwise high quality that lack rarities, and conversely, rare species can and do pop up at disturbed sites.

One widely used method of making quality assessments is the use of a Floristic Quality Index (FQI). This model was developed for use in the Chicago region (Swink and Wilhelm, 1994) and its use has since expanded to most of the eastern U.S. The FQI model assigns scores from 0 to 10 to each native plant taxon within a region (often a state). These scores, called Coefficients of Conservatism (C-ranks), are then combined in order to obtain a consistent and quantitative measure of site quality. In this model "Conservatism" refers to a taxon's relative position on a spectrum, with a C-rank of "0" including native plants of ruderal or weedy sites (and all non-native plants), and rank of "10" indicating plants restricted to high-quality remnants of aboriginal plant communities.

In 2012, with support from the EPA, the New York Natural Heritage Program began developing protocols for assessing wetland quality throughout New York State. Part of this research required the use of a FQI for the state. As a result, the EPA

supported an effort to develop new Coefficients of Conservatism for the state's vascular flora. A prior, regional effort, using different methodology, was completed by the New England Interstate Water Pollution Control Commission (Bried *et al.* 2012). In January 2015 the NYNHP invited field botanists from across the state to participate. Six botanists with extensive field experience in New York were ultimately able to participate in a 4-day workshop held at the School of Environmental Science and Forestry from May 10 to May 14, 2015. Participants included Steven Daniel, Greg Edinger, David Hunt, Anne Johnson, Richard Ring, and David Werier, along with ecologist Elizabeth Spencer. The workshop was moderated by Dr. Gerould Wilhelm of Conservation Design Forum, who first developed the Coefficients of Conservatism concept.

Our group struggled initially in pinning down exactly what was meant by the "conservatism" concept. I think this may in part have been because the original model's definitions were developed in an agricultural mid-western landscape. A small parcel of prairie left amidst farm fields is clearly a remnant – here in New York, with a longer history of settlement, and a landscape marked by forests which may have been logged or ploughed multiple times, or never, the definition of a "remnant" can be harder to pin down. However, after much discussion and the help of our moderator, we were able to agree on terms and begin assigning scores (C-ranks) to native plant species. A guideline Dr. Wilhelm kept reminding us of was, "If I brought you a specimen of this plant, how confident would you be that it came from an intact or undisturbed site"....

We worked from the newly revised checklist of New York Vascular Plants developed by David Werier (Werier 2015), funded by the same grant from the EPA. (The ongoing revision of the flora checklist, a huge ongoing effort, will be of great interest to NYFA members when it is completed.)



The FQI model concept excludes ranking non-native and hybrid taxa, which still left us 2133 remaining taxa to score in four days. So they were long days. As a group we strove to incorporate input for a given species from each botanist familiar with it, and to approach consensus on a single score for each taxon whenever possible. For taxa where the group had a high level of uncertainty for the best C-rank, a question mark was added to the assigned rank to indicate more study of that taxon's conservatism in NY is needed. Over the course of the four day workshop we assigned C values to 1980 of the 2133 taxa (93%). In cases where the group had insufficient experience with a given taxon to assign a rank, a default, conservative value of "10?" was assigned. The remaining taxa were scored individually by each botanist following the workshop, after which the mean score was assigned.

So what's the point? The idea is to use the coefficients of conservatism scores as a standardized (if subjective) means of assessing and comparing site quality. As an example, imagine two peatlands – the first dominated by *Carex chordorrhiza* (C-value 9), *Calamagrostis pickeringii* (10), *Menyanthes trifoliata* (9), and *Sarracenia purpurea* (9). The second, dominated by *Carex stricta* (4), *Calamagrostis canadensis* (7), *Typha latifolia* (1), and *Scirpus cyperinus* (4). The first site's mean C-value is just over (9), and the second site's is (4). Based on the species list, most botanists would likely be more confident that the first peatland is a relatively undisturbed or high quality site than the second, right? The plants from the second peatland might also be found at a high quality site, but may not be so *conservative* to only high quality sites as the pitcher plant and bog buckbean are. This is an oversimplified example, and FQI's use more complicated formulas than simple averages, but I hope this illustrates the basic idea.

Coefficients of Conservatism and Floristic Quality Assessment Indices can provide an additional means of assessing and comparing site quality across sites, in conjunction with other traditional measures of site quality assessment,

such as rare species surveys, species richness and other diversity measures, and invasives assessments. These new scores are available from the NY Natural Heritage Program (contact richard.ring@dec.ny.gov). We hope they will prove useful in ecological assessment and site conservation work across New York State. This project was funded by EPA grant number CD96294900-0.

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Gentianopsis virgata, ranked with a Coefficient of Conservatism of 10.



NYFA Annual Meeting

The New England Botanical Club and New York Flora Association have teamed up to offer a botanical retreat in the Hudson Valley on June 4-5, 2016. There will be multiple field trips, a keynote presentation by James Lendemer, NYBG Lichenologist, and ample time to socialize with your fellow botanists. Affordable lodging has been reserved at the Black Rock Forest Consortium. To learn more, see:

<http://www.nyflora.org/field-trips-and-workshops/#AnnualMtg16>

NYFA will hold its annual meeting during the retreat, on June 4 at 7:30 pm. During the meeting, members will have the opportunity to vote for NYFA's Board of Directors. In accordance with the Organization and Bylaws of the New York Flora Association, the Nominating Committee has submitted two new nominees for the board.

Emily DeBolt. Emily is a certified Nursery and Landscape professional and avid botanist. She has her bachelor's degree from Cornell University and master's degree from SUNY-ESF and was the recipient of the NYFA Plant Conservationist Award in 2012, as well as past Director of Education at the Lake George Association, a non-profit environmental organization and the past Regional Program Manager for the Saratoga Region of NYS Parks. With her husband Chris, she started Fiddlehead Creek Farm and Nursery in Hartford, NY in 2009. The first 100% native plant nursery in the state, Fiddlehead Creek Farm is a labor of love, providing support and encouragement to those interested in using native species in their landscapes.

Michael Hough. Michael is a full-time lecturer at SUNY Cortland and teaches occasionally at SUNY-ESF. He has led many outings for the Finger Lakes Native Plant Society and the Leatherstocking Botanical Society, and has co-hosted the Carex Workshop at SUNY Cortland for NYFA in 2014 and 2015. He is actively compiling local county floras (Cortland and Onondaga) and is updating the SUNY Cortland Herbarium. He resides in Homer, NY.

In addition to new Directors, whose three-year terms will commence at the annual meeting, the Nominating Committee is recommending that the following current Directors whose terms expire in 2016 return for another three-year term: Eric Lamont, Edward Frantz, David Werier, and Anna Stalter. Write-in candidates are also accepted. Please cast your ballots by mail, email, or other form of technology, prior to, or in person, at the NYFA Annual Meeting.

Field Trips and Workshops 2016

7 May (Saturday). 9 am - 1 pm. **Spring Wild Flowers of Poke-O-Moonshine (Essex County).** Leader: Michael B. Burgess. *Joint with Friends of Poke-O-Moonshine and Adirondack Botanical Society.*

15 May (Sunday). 9 am - 4 pm. **Chemung River Valley (Chemung County).** Leader: David Werier. *Co-sponsored with Finger Lakes Native Plant Society.*

21 - 22 May (Saturday & Sunday). **West Point Botany Weekend (Orange County).** Leader: David Werier.

28 May (Sunday). 10 am - 3pm. **Petal Pedal from Round Lake along the Zim Smith Bikeway (Saratoga County).** Leader: Steve Young. *Joint with Adirondack Botanical Society.*

4 - 5 June (Saturday & Sunday). **NYFA Annual Meeting and Field Trips.** *Weekend Joint with New England Botanical Club.* See above and <http://www.nyflora.org/field-trips-and-workshops/#AnnualMtg16>

5 June (Sunday). 1 - 4 pm. WORKSHOP: **Learn 10...Wildflowers (Albany County).** Instructor: Jesse Hoffman. *Joint with Albany Pine Bush Center.*

12 June (Sunday). 1:30pm – 3:30pm. WORKSHOP: **Learn 10...TREES (Clinton County).** Instructor: Michael B. Burgess. *Joint with Peru Free Library.*



18 June (Saturday). 10 am. **Sugarloaf Mountain in Hudson Highlands State Park (Dutchess County)**. Leader: Rich Ring.

28 - 30 June (Tuesday – Thursday). **WORKSHOP: Sedges (Clinton County)**. Instructor: Tony Reznicek. *Co-sponsored with SUNY Plattsburgh.*

9 July (Saturday). 9:45 am. **Catskill Forest History: A First Growth Forest and Fen Walk (Delaware County)**. Leader: Dr. Mike Kudish.

30 and 31 July (Saturday & Sunday). **Altona Flat Rock State Forest (Clinton County)**. Leaders: Anne Johnson and friends.

6 August (Saturday). 10 am to 1 pm. **Whiteface Mountain (Essex County)**. Leader: Steve Young. *Joint with Adirondack Botanical Society.*

6 August (Saturday). 10:30 am to 2:30 pm. **WORKSHOP: LEARN 10...ERICACEAE (Ulster County)**. Instructor: Molly Marquand. *Joint with Catskill Native Plant Society.*

12 - 14 August (Friday evening to Sunday). **WORKSHOP: Aquatic Plants (Tompkins County)**. Instructor: David Werier. *Co-sponsored with Bailey Hortorium, Cornell University.*

13 August (Saturday). 1 pm - 5 pm. **WORKSHOP: LEARN 10...TREES (Franklin County)**. Instructor: Dan Spada. *Joint with Wild Center.*

23 - 25 September (Friday evening to Sunday). **WORKSHOP: Sphagnum Moss (Franklin County)**. Instructor: Sean Robinson. *Co-sponsored with Paul Smith's College.*

For more detail, check the New York Flora Association's website (www.nyflora.org) and click on Field Trips and Workshops.



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