NYFA New York Flora Association

Quarterly Newsletter

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New York Flora Association

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Editor's Note: NYFA member Frank Knight, who many of you know from the Capital Region for his 1980s column, articles and photos in *The Conservationist* until his 2007 retirement, was kind enough to provide us with an original article on the advent of field guides. Frank and his wife now live in Gig Harbor, WA.

We have two other very interesting articles in this issue, one by Chris Teter, a recipient of the last round of NYFA grants, on Japanese tree lilac, and one from Michael Hough on sweet flag. Along with Michael Hough I would like to encourage people to stop and check any *Acorus* you run across. Keep an eye out for the non-native so we get a grasp on its abundance and its range in the state. Thanks very much to all three for contributing articles.

And lastly, don't forget to check out the list of this year's field trips and workshops, and to take the willow challenge at the end of the newsletter.

Articles Inside:

John Burroughs: Father of the American Wildflower Guide

by Frank Knight
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Like most 19th century rural children, John Burroughs (JB) attended school – farm work permitting – to learn the three "R"s in a one-room school at the West Settlement School, Roxbury, Delaware Co., NY.. But most children gifted with the spark of genius were not inspired, as JB was, by a dynamic new young teacher. Twenty-five years later when the two finally corresponded, James Oliver confessed that he remembered JB's classmate and future financier Jay Gould, but not the very shy Burroughs boy.

A voracious reader, Burroughs' real teacher, then and throughout his life, was books. Any money he earned on his own as a teenager – from tapping trees and boiling maple sugar, for example – was used to purchase books. Attending a teacher training institute became a compelling goal, but his father refused him the money. So at age 17 with help of a family friend, JB found a teaching position at Tongore, Town of Olive, Ulster Co. This was the first of nine school master positions in three states he held between 1854 and 1863. Fifty dollars earned from teaching paid for a term of study at the Hedding Literary Academy, Ashland, Greene Co., and another at the Cooperstown Seminary – the total of his formal education.

Natural history was not on the curriculum of these brief formal studies. At age 26, while teaching at Buttermilk Falls (now Highland Falls), just a half mile from the Hudson and two miles from West Point, JB rekindled childhood outdoor passions for observing nature. On Sunday walks in the spring woods with West Point Natural Philosophy Professor Eddy, JB learned the names of wildflowers they saw. Ralph Waldo Emerson, lecturing at West Point befriended Burroughs on a walk around the Military Academy grounds. Then on a trip with friends to the Adirondacks, JB was so familiar with the flora and fauna there that he thought himself a naturalist. Giving up teaching, and at the behest of one of his literary friends turned wartime Washington storekeeper, JB moved to the nation's capital.

In Washington, JB met and befriended Walt Whitman who was there to visit and comfort the war wounded. With a new job in a vault of the U.S. Treasury, Burroughs began writing the more than 400 essays published in 23 volumes by Houghton Mifflin between 1871 and after his death in 1921. These essays, many first published in popular periodicals, would make him world famous. Whitman had suggested the title *Wake-Robin* for JB's first volume of collected nature essays on plants, animals and

farm life. Eventually, JB would write two works in praise of his literary hero. He left D.C. in 1872 to begin grape farming, and to build his West Park, Ulster Co. home with wife Ursula on the Hudson shore. By 1885 he was a full-time writer and farmer, and Houghton Mifflin continued publishing new volumes of his collected essays, his fame growing with each new title.

Frustrated with sparsely illustrated, technical taxonomic "botanies" as he called them, JB proposed a starkly simpler alternative:

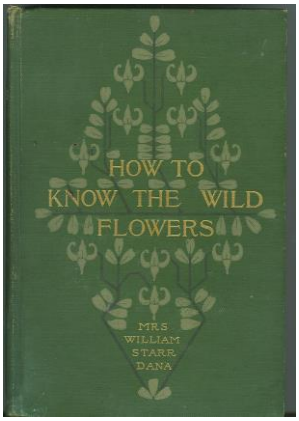
"*One of these days some one will give us a hand-book of our wild flowers, by the aid of which we shall all be able to name those we gather in our walks without the trouble of analyzing them. In this book we shall have a list of all our flowers arranged according to color, as white flowers, blue flowers, yellow flowers, pink flowers, etc., with place of growth and time of blooming*." John Burroughs

Mrs. William Starr Dana (New York socialite Frances Theodora Parsons (née Smith) (1861-1952)), read Burroughs' plea which appeared in an 1887 essay "Among the Wild Flowers" in the popular periodical *Century* (and later in Vol. 9 *Riverby* [1894] of his collected essays); and granted his wish in *How to Know the Wild Flowers*, Scribner's, 1893. Serendipity and tragedy would play major roles in creating this book.

Frances learned to love nature and wildflowers as a child at her grandmother's home near Newburgh, NY. Educated at a girls' finishing school, at 23 socialite Francis married Navy Commander William Starr Dana in 1884. Dana perished in a flu epidemic while posted in Paris in 1890. With restricted social contacts and clothed in Victorian black, Frances was enticed by her friend Marion Satterlee to take countryside walks with her; reawakening Frances' interest in wildflowers and providing inspiration for her first and most famous book which used, as was the custom then, her husband's name as author – Mrs. William Starr Dana. With no formal science or botany training, but with great organizational skills, her field guide was a big success through several editions with Marion Satterlee's outstanding pen and ink drawings.
Ironically, a wildflower identification that eluded JB for so long, *Dalibarda repens*, he may not have found in Dana's guide. He thought it a violet when he found it in boggy woods. Dana included it in her book's white-flowered section, but with neither illustration nor common name. She correctly puts *Dalibarda* in the Rose Family, but barely mentions its violet-like leaves. Later authors would apply its fanciful Dewdrop common name.

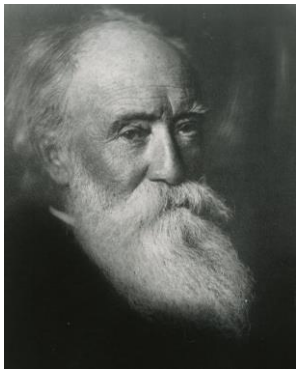
Dewdrop (*Dalibarda repens*). Frank Knight photo.

Frances' books helped inspire many other guides over the years (see partial list in Selected Wildflower Guides), with more and better color plates as printing techniques became more economical. (This writers' 1900 edition of Dana's guide has 158 full page illustrations, 48 in full color.) Despite the competition, *How to Know the Wild Flowers: A Guide to the Names, Haunts, and Habits of Our Common Wild Flowers* (1893) would remain in print into the 21st century.



In 1896, the widow Frances married Prof. James Russell Parsons, Jr., an educator, politician, and Counsel General to Mexico under President Theodore Roosevelt. James' financial problems early in their marriage inspired Frances Theodora Parsons to write *How to Know the Ferns* (1899), a very successful wildflower guide companion. Following James' tragic death when a trolley crashed with his carriage in Mexico City in 1905, Frances was widowed for the second time, and would not write again until her privately published autobiography *Perchance Some Day* appeared in 1952, the year of her death at age 90, at Katonah, NY. Instead of writing, she had devoted herself to women's suffrage, Republican and Progressive Party causes.

Mary Elizabeth Parsons (1859-1947) – no kin of Frances Theodora - moved to California from Chicago in 1883 and was well-tutored in botany by Alice Eastwood, Curator of Botany at the California Academy of Sciences. Her book *The Wild Flowers of California: their names, haunts and habits* was first published in 1897. My 1914 edition includes the Preface to the 1906 edition, which was never published because the San Francisco Earthquake destroyed all the plates. Her scholarship is evident with an extensive introduction including keys based on Linnaeus'



One hundred years ago, a biographical sidebar for the bearded writer, whose face was as familiar then as those of his famous travel companions, would be unnecessary. John Burroughs (1837 –1921) grew from a farm boy on his family's farm at Roxbury, NY to become the most famous literary naturalist of his time – the Father of the American Nature Essay. His writing reflected his feelings about his unique personal observations of nature with scientific accuracy – rare in popular literature then.

Beginning with the publication of his first book of collected essays, *Wake-Robin* in 1871, his literary career would span 50 years. Twenty-three volumes would be published by Houghton-Mifflin; selling a million and a half copies. Extensive travels throughout the United States and to England both infused and enriched his work. His early wildlife and country living essays would eventually broaden to include philosophy and literary criticism. As his fame grew, he traveled and "camped" with admirers Henry Ford, Harvey Firestone and Thomas Edison who revered the simple life Burroughs extolled. He enjoyed visits at his West Park farm and nearby rustic cabin retreat "Slabsides" by friends Theodore Roosevelt, Walt Whitman and John Muir, but none more than from the white-frocked Vassar girls from across the Hudson River. Introduced to California by "John O'Mountains" Muir, "John O'Birds" (their pet names for each other) spent his last several winters there.

After his passing, the John Burroughs Association (JBA) was founded to preserve his memory and Slabsides. Since 1928, the JBA annually awards the John Burroughs Medal at the American Museum of Natural History for a book-length nature essay – today a virtual who's who list of American nature writers.

Photo courtesy of American Museum of Natural History.

stamen number system. Burroughs' periodical essays and books were widely read in the West, and Mary Elizabeth used the same JB quote in her introduction that Mrs. Dana had:

"*Most young people find botany a dull study. So it is, as taught from the text-books in the schools; but study it yourself in the fields and woods, and you will find it a source of perennial delight*".

But, Mrs. Dana, and not JB, gets credit for the book's flower color format. Mary Parsons graciously wrote:

"*It has been the aim of the author to picture for the most part the flowers peculiarly Californian, leaving Mrs. Dana's charming book, How to Know the Wild Flowers to illustrate those we possess in common with the Atlantic Slope, thus making the works the complement of one another. Mrs. Dana has kindly permitted the author to use her plan of arrangement – i.e. of grouping all the white flowers in one section*".

She also thanked the Southern and North Pacific railroads for reduced travel rates and passes to explore the highway-sparse state with her illustrator Margaret Warriner Buck who made nearly all of her pen and inks from life.

Surprisingly, neither woman is remembered with a biography. Frances Theodora Parsons' autobiography concentrating on her public service, barely mentions her famous books.

Perhaps Mrs. Dana's simple, keyless work for the very first popular guide user was the more enduring of the two guides since it led nature lovers, as JB urged, to "study [botany] yourself in the fields and woods, and find it a source of perennial delight."

Selected Wildflower Guides listed in the order of their appearance: (Readers are encouraged to submit additional favorites.)

Dana, Mrs. William Starr, 1893. *How to Know the Wild Flowers: A Guide to the Names, Haunts, and Habits of our Common Wild Flowers* Charles Scribner's Sons would remain in print into the 21st century: Scribner's (1912), Houghton Mifflin (1989), Mariner Books (1991), Nabu Press (2010), and even an ebook version of Scribner's.

Parsons, Mary Elizabeth. 1897, 1902, 1906, 1912 *The Wild Flowers of California.* H.S. Crocker and Cunningham; Curtis & Welch, San Francisco (later by the CA Institute of Science. 1906 edition never published – plates destroyed in San Francisco Earthquake).

Blanchan, Neltje. 1900. *Wild Flowers Worth Knowing*, Doubleday, Page & Co. (Ms. Blanchan was Mrs. Frank Nelson Doubleday).

Mathews, F. Schuyler. 1902-1955 *A Field Book of American Wildflowers*, Putnam. (One of this writer's favorite childhood guides).

Peterson, Roger Tory and Mckenna, Margaret, 1968-1998. A *Field Guide to Wildflowers: Northeastern and North-central North America.* Peterson Field Guides. Houghton Mifflin Co. Boston, MA

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2015 NYFA Botany Symposium and Champlain Valley BioBlitz

Join us June 12- 14th for a botany filled weekend at Twin Valleys Outdoor Education Center in the heart of the Champlain Valley. Twin Valleys is a 662 acre preserve owned and operated by SUNY Plattsburgh in Westport, NY.

We are developing an exciting program that will include a warm welcome and keynote address on Friday evening and participation in the Champlain Valley Bioloblitz on Saturday and of course NYFA's annual meeting activities including the botany quiz and vote for the Wildflower of the Year 2016. On Sunday we will have a special half-day field trip to the Nature Conservancy's Big Woods preserve.
Registration details will be released in the coming weeks.

We hope to see you at Twin Valleys!

Native and Introduced *Acorus* (Acoraceae) in NY

by Michael Hough

The genus *Acorus* consists of three species of perennial herbs commonly known as sweet-flag because of their sweetly aromatic leaves and roots and the resemblance of the leaves to those of yellow flag (*Iris pseudacorus*). The leaves are basal, glossy green, sword shaped and often reddish at the base. The flowers are tiny, yellow-brown, 6-parted, in a cylindrical spadix borne on a sympodial leaf. The fruits are hard, dry, and brown, with 2-several seeds. The genus was traditionally placed in the family Araceae because the bract subtending the spadix had been incorrectly interpreted as a spathe, but is actually the distal portion of a sympodial leaf (Thompson, 2000). The genus is currently recognized as the oldest extant lineage of the monocots and has been assigned its own family, the Acoraceae (Thompson, 2000).

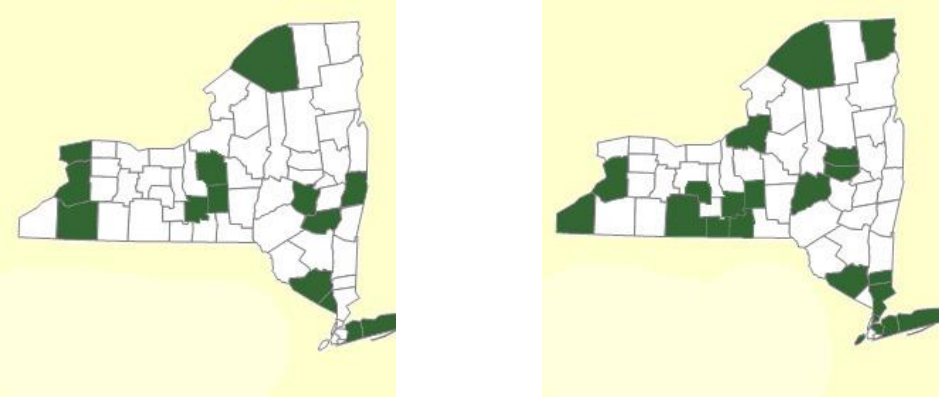
Acorus has long been valued as a medicinal herb, with evidence of its use dating back at least 2000 years (Motley, 1994). The Greeks considered *A. calamus* L. to be beneficial for disorders of the eyes (Rafineque, 1828). The rhizomes of these pleasantly aromatic plants can be candied (Rafinesque, 1828; Peterson, 1997). The roots are peeled, cut into short lengths, and boiled in several changes of water for about an hour or until tender, then simmered in a rich sugar syrup for 20 minutes and set aside to dry (Peterson, 1997). Caution should be exercised as triploid and tetraploid cytotypes of *A. calamus* produce the carcinogen β-asarone and other toxic phenylpropane derivatives; diploid cytotypes of *A. calamus* and *A. americanus* Raf. (Raf.) are said to lack these compounds (Motley, 1994).

Two of the three species of *Acorus* occur in North America and both can be found in New York (the other species, *A. gramineus* Sol. ex Aiton, is only known to occur in Asia). *Acorus americanus* is a diploid North American native that may also occur in northern Asia (Thompson, 2000). *Acorus calamus* is represented in North America by a sterile triploid cytotype that was introduced by early European settlers (Thompson, 2000). It is typically larger in size, with leaves that tend to be broader and flatter. Although it does not produce viable seed, *A. calamus* has become established throughout northeast and central United States (Thompson, 2000). The primary means of dispersal is likely fragmentation of rhizomes (Heng et al., 2010). Diploid forms of *A. calamus* are found in Eastern Asia, while a tetraploid is found in India, Siberia and Japan (Heng et al., 2010). It is thought that triploid *A. calamus* probably originated in the Himalayan region from a hybrid of the diploid and tetraploid cytotypes of that species (Heng et al., 2010). Until relatively recently only *Acorus calamus* was recognized in most North American floristic works and herbaria. *Acorus* has been collected from every county in NY with the exception of Franklin, Hamilton, Kings, Queens, and Seneca, however NY State Museum records prior to 1990 are excluded from the current New York Flora Atlas because they do not distinguish *A. americanus* from *A. calamus* (Weldy et al., 2014). I have put together some updated maps for the two species based on what is in the atlas and a review of specimens in a few other herbaria in central NY (Figure 1).

It was recognized as early as the 17th Century that North American *Acorus* plants, unlike plants of European origin, were fertile. Josselyn (1671) said that sweetflag growing in New England, "agrees with the description, but is not barren". Rafinesque (1828) was the first to describe a distinct taxon of *Acorus* in North America as *Acorus calamus* var. *americanus*. He characterized the fruit of var. *americanus* as having "many minute, slender seeds", with no mention of seeds for what he called var. *europeus*. The main vegetative differences he used were ancipital leaves for var. *americanus* (vs. hardly ancipital) and submedial lateral spadix (vs. lateral spadix). He defined ancipital as "having two sharp sides like a sword". While recognizing that our plants differed from European plants, he noted that the characteristics "hardly amount to specific difference." Rafinesque later described three new species of *Acorus* in North America, although only one, *Acorus americanus*, is currently recognized. The other two, *A. floridanus* and *A. flexuosus* seemed to refer to diminutive, early flowering forms of *A. americanus* (Rafinesque, 1836).

Most subsequent floristic works in North America (e.g. Fernald 1950, Weigand & Eames 1929) did not recognize *A. americanus*, only recognizing *A. calamus*, while others (e.g. Gleason & Cronquist, 1991) relegated *A. americanus* to synonymy with *A. calamus*. Packer & Ringius (1984) found that diploid and triploid plants could be separated based on pollen stainability in aniline blue. The pollen of *A. americanus* stains readily in aniline blue, while that of triploid *A. calamus* does not. Thompson (1987) was subsequently able to correlate pollen stainability with leaf morphology, providing a more practical means of separating the two species.

The two species are readily identified in the field based on leaf morphology (Figure 2). *Acorus calamus* is usually described as having a single prominent midvein running the length of the leaves, while *A. americanus* has 2-5 ± equally raised veins (the latter feature is most evident in dried material). Both species flower from late May to June, with fruit of *A. americanus* beginning to form as early as late July. Since triploid *A. calamus* is sterile, it does not produce mature fruit (Figure 3). Haines (2000) provides some additional characters for separating the two taxa.



A. americanus *A. calamus*

Figure 1. County level distribution (green) of *A. americanus* and *A. calamus* based on records in the NY Flora Atlas (Weldy et al., 2014), with some additional counties added from reviewed specimens at BH, CORT, and SYRF. The Tioga County record for *A. calamus* is based on plants photographed at Michigan Hill State Forest in 2014.

A. americanus *A. calamus*

Figure 2. Comparison of leaves of *A. americanus* and *A. calamus*. One or both margins of the leaves of triploid *A. calamus* are often wrinkled.

A. americanus *A. calamus*

Figure 3. Comparison of inflorescences of *A. americanus* and *A. calamus*. Images of *A. americanus* taken August 1, 2014 in St. Lawrence County from a population discovered by Ed Frantz. Images of *A. calamus* taken on August 4, 2014 in Cortland County.

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Another naturalizing exotic:

Investigating the impact of a popular street tree, *Syringa reticulata*

by Chris Teter

Across the world organizations and individuals are planting exotic plant species, while others work to eradicate them. Is it an innocent pleasure to purchase an organism that has not yet crossed our greatest biological barriers, the oceans, and stick it within eyesight of passersby in our kitchen window? Life finds a way to adapt and to survive in new environments. Throughout human history seemingly benign plants have escaped gardens to cause havoc in fragile ecosystems. Our infatuation with outlandish species is at the expense of native habitat integrity and taxpayer dollars.

In the State of New York, our tax dollars have put into effect a regulation aimed at halting the spread of invasive species. Several common exotic plants are being officially considered as invasive by the NYS Department of Environmental Conservation. The regulation states that an invasive species is: “A species that is nonnative to the ecosystem under consideration, and whose introduction causes or is likely to cause economic or environmental harm or harm to human health. For the purposes of this Part, the harm must significantly outweigh any benefits” (NYSDEC, 2014).

I am conducting a survey of a naturalized population of the Japanese tree lilac, *Syringa reticulata* (Blume) H. Hara. My graduate thesis is focused on studying sections of a Hudson River tributary in Columbia County to determine what impact this exotic tree has on the health of native forests. I have completed one hectare plot, and am waiting for the snow to clear before continuing with others. With my first plot I have collected evidence of a forest where *S. reticulata* is more frequent and dense than native trees.

Syringa reticulata is a short tree with a maximum height of approximately 30 feet. The genus *Syringa* (*Oleaceae*, the Olive Family) also encompasses the rarely invasive common lilac and its cultivars, and is a sister genus to *Ligustrum*, which includes all nine invasive privet species in the United States. *S. reticulata*, along with other members of *Oleaceae*, has opposite leaf orientation. The leaves are simple, prominently veined, and lighter green in color compared to the common lilac. The inflorescence is a panicle approximately a foot in length, and includes hundreds of white flowers (Figure 1). The panicle persists even after its seeds have dispersed, displaying golden seed pods for up to two years after, making winter identification possible from afar (Figure 2). This species blooms profusely in direct sunlight, but persists in

heavily shaded understories. Flowers appear later in the season than other tree species, full bloom occurring in early summer. The color of the bark can range from dark reddish to golden brown. The bark is similar to that of a cherry or birch, with younger branches with prominent horizontal lenticels. Older trunks have deep crevices in a rough diamond shaped pattern (Figure 3). *Syringa pekinense, t*he Chinese tree lilac, is distinguished from *S. reticulata* by its exfoliating bark.

Figure 1. *S. reticulata* inflorescence.

Figure 3. Remnants of previous years inflorescence. These will persist through winter, and are easily spotted among other defoliated trees.

What makes this tree so successful in our forests? Is it the thousands of seeds one individual can produce? Is it its ability to resist deer, disease, and insect pests? Maybe it is better able to colonize the shady forest understory. Future research must be conducted to answer these questions. Detailed ecological studies of the Japanese tree lilac, even in its native habitat, are few and hard to find.

Figure 3. Base of *S. reticulata* trunk showing both adult and juvenile bark. Note presence of multiple suckers, a very common occurence. Note also the prominent lenticels, even in the crevices in older bark.

Figure 4. Naturalized tree lilacs along a Hudson River tributary, Columbia County.

In searching the literature, I encountered studies from several agricultural universities that endorse *S. reticulata* and its close relative *S. pekinense* as hardy additions to landscaping and along streets nationwide (Redlin *et al.*, 2007). There are also reports and presentations prepared for municipalities convincing them of the worthiness of *S. reticulata* along their roadways (Gerhold, 2007). Several reasons this species is preferred as a street tree are its tolerance to compact soils, high salinity, shade, and short periods of drought. Many of those same traits give known invasive plants a competitive advantage over native species. Ironically, municipalities are looking for "diversity" among street trees, perhaps at the expense of native forest diversity.

I also encountered reports of several naturalized populations of tree lilac across North America, including in the states of Massachusetts, Minnesota, Pennsylvania, Vermont, and Wyoming (Pringle, 2005; Shimpf & Pomroy, 2009; Springer& Parfitt, 2007). I have personally discovered two populations in Otsego County, and a population on the Au Sable River in Essex County. Dozens of municipalities in this state have already planted *S. reticulata* on their streets (Dr. Fred Cowett, personal communication). *S. reticulata* has not yet been labeled as a nuisance, or at all invasive, contrary to what I have seen in the field.

I welcome any emails, phone calls, or letters from NYFA members who know of a naturalizing population of this species. I also am looking for granting organizations that could fund my research through this summer and beyond. I hope this article sheds light on what could be a new inclusion to the New York's Prohibited and Regulated Invasive Species list.

I would like to acknowledge the support of the 2014 New York Flora Associations Research Award, and the SUNY Oneonta 2014 and 2015 Student Grant Program for Research and Creative Activity for covering my travel expenses. I would also like to acknowledge the support of my Graduate Committee: Dr. Sean Robinson, Dr. Donna Vogler, and Dr. Grace Chen, as well as Steve Young and Dan Spada for tips to naturalized populations.

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Field Trips and Workshops for 2015

For more detail see: http://www.nyflora.org/field-trips-and-workshops/

9 May (Saturday). 11 am - 2 pm. FIELD TRIP: Spring Wild Flowers of Poke-O-Moonshine (Essex County). Led by Michael Burgess. *Joint with Adirondack Botanical Society.*

30 May (Saturday). 10 am - 3pm. FIELD TRIP: Rare plants of the Catskills: Viewing Musk-root, *Adoxa moschatellina* (Delaware County). Leaders: Michael Kudish and Molly Marquand. *Joint with Catskill Native Plant Society.*

5 - 7 June (Friday evening – Sunday afternoon). WORKSHOP: Mosses and Liverworts at SUNY Oneonta (Otsego County). Instructor: Sean Robinson. *Co-sponsored with SUNY Oneonta.*

19 June (Friday). 10:00 am - 1:00 pm. FIELD TRIP: Rare plants of the Catskills: Viewing Jacob's Ladder, *Polemonium vanbruntiae*. (Ulster County). Leaders: Michael Kudish and Molly Marquand. *Joint with Catskill Native Plant Society.*

20 June (Saturday). 10:30 am - 1:30 pm. FIELD TRIP: Ferns and Clubmosses of a Chenango County Forest. Leader: Joseph McMullen.

24 - 26 June (Wednesday – Friday). WORKSHOP: Sedges (Albany County). Instructor: Tony Reznicek. *Co-sponsored with SUNY Cortland.*

10 - 12 July (Friday-Sunday). WORKSHOP: Introduction to Grasses (St. Lawrence Country). Instructors: Anne Johnson and Steven Daniel. *Co-sponsored with SUNY Potsdam.*

19 July (Sunday). 10 am – 2 pm. FIELD TRIP: Agricultural and Roadside Weeds. (Montgomery County). Leaders Carl George and Steve Young.

22 July (Wednesday). 1 pm - 5 pm. WORKSHOP: "LEARN 10…TREES". (Franklin County). Instructor: Dan Spada. *Joint with Wild Center.*

25 July (Saturday). 9:30 – 3:30. FIELD TRIP: Massawepie Mire (St. Lawrence County). Leaders: Bernie Carr and Anne Johnson. *Joint with Adirondack Botanical Society.*

1 August (Saturday). 10 am to 1 pm. FIELD TRIP: Whiteface Mountain (Essex County). Led by Steve Young. *Joint with Adirondack Botanical Society.*

15 August (Saturday). 10 am – 2 pm. FIELD TRIP: Smartweeds at Alley Pond Park. (Queens County). Leader: Andy Greller. *Joint with Long Island Botanical Society.*

13 September (Sunday). 1 pm - 4 pm. WORKSHOP: "LEARN 10…TREES". (Albany County). Instructor: Jesse Hoffman. *Joint with Albany Pine Bush.*

20 September (Sunday). 10 am – 3 pm. FIELD TRIP: Botany by Bike - Glens Falls to Lake George. (Warren County). Led by Steve Young. *Joint with Adirondack Botanical Society.*

WILLOW CHALLENGE

Your choices are:
Salix amygdaloides (peach-leaved willow), S. bebbiana (Bebb's willow), S. candida (hoary willow), S. discolor (pussy willow), S. eriocephala (river willow), S. lucida (shining willow), and S. serissima (autumn willow).

Answers on the next page.

A_____

B_____

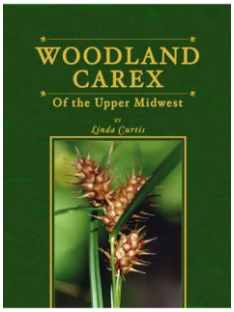
C_____

D_____

E_____

F_____

G_____



We'd like to announce a reprinting of Woodland Carex, a book reviewed and recommended in our Summer 2009 issue. Check it out at www.curtistothethird.com

Answers to the Willow Challenge: A: S. bebbiana, B: S. serissima, C: S. eriocephala, D: S. amygdaloides, E: S. candida, F: S. lucida, G. S. discolor.

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Botanists desperate to do some botanizing this past March. As Fran Lawlor, one of the botanists said "We didn't seem to know our ash from our elbow". Photo by Bob Kleinberg.

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