

"May the Turf of the Sedges they Loved...Keep them Perennially Green"

A Local Connection to Sedge Giants of the early 19th Century:

# Henry Sartwell and Chester Dewey

# By Steven Daniel

In our sedge workshop I was interested to hear from Tony Reznicek about the local connection of *Carex sartwellii* – a state rare sedge that grows in the fen at Mendon Ponds Park, near Rochester. The sedge was named for Henry Sartwell (1793 – 1868), a Penn Yan physician and sedge afficionado. Sartwell was an active student of local botany, *Carex* in particular, and a prolific collector. His main collection of over 6200 collections, rich in *Carex*, was donated in 1983 by Hamilton College to the New York Botanical Garden.

Sartwell's sedge was described in 1842 by Chester Dewey (1784-1868), who provides another connection to western New York. The type is from Junius (presumably Junius Ponds), near Geneva, NY. At the time Dewey was the principal of the Rochester Collegiate Institute, a high school, having left Williams College in 1836 to accept that position. In 1850 he became Professor of Chemistry and Natural Philosophy at Rochester University (now University of Rochester), which has a Dewey Hall on the main quad. Dewey was a major figure in Sedge studies for over 40 years, from 1824 until 1866. Schweinitz named a sedge in his honor (*Carex deweyana*) and there is section Deweyana. Asa Gray states that Dewey's work, along with Schweinitz and Torrey, lay the foundation and "insured the popularity of the study of Sedges in this country. (Maybe they were more popular then!)

Asa Gray published '*Biographical Sketches*' of Sartwell and Dewey, who died within a month of each other. (Thanks to Google's scanning program, these materials are available instantly by simple search!) I particularly like Gray's concluding sentence, published in the American Journal of Science and Arts in 1868:

The lovers of Carex so numerous in this country will cherish the memory of these two venerable men Sartwell and Dewey long associated in congenial pursuits and gone to their rest together. May the turf of the Sedges they loved and which cover or ought to cover the low mounds under which their dust reposes keep them perennially green and adorn them each returning spring with their sober blossoms.

#### A Note on Sensitive Stamens

#### By Knowlton Foote, PhD

I have always been interested in the wildflowers of New York State. I have published eight articles on the floral ecology of our wildflowers in the Conservationist and the NYFA Newsletter. One aspect that fascinated me was about "sensitive stamens" that appear in the Asteraceae wildflowers. It is a remarkable adaptation in the pollination process. Below is a brief review of significant literature on sensitive stamens which may interest you.

The family Asteraceae, as you probably know, is voluminous. It numbers over 20,000 species worldwide, of which 1,100 occur in the Northeast (Gleason and Cronquist 1991); approximately 400 are found in New York State (Mitchell and Tucker 1997). Its life forms include trees, shrubs, vines, succulents, and herbs. The species, long known as composites, are found from the Arctic to the Antarctic. The flower head is composed of smaller flowers known as florets. A composite head may consist of just a few florets to as many as 1000 as in the Sunflower.



Two unique features of florets involve the composite stamens. In the first feature, the five stamens are joined together along their lateral edges to form an "anther tube." In the pollen presentation process, pollen is first released into the center of the anther tube (i.e. introrsely) from the anther sacs. Then as the style grows upward through the center of the tube, the pollen is swept out by the stylar hairs. After several hours up to a day passes, the style with its captured pollen is now 1 to 5 mm (or higher) above the anther tube. The style then splits into two, exposing the two stigmatic surfaces which now makes it receptive to pollinators. Cross pollination can now occur.

A second unique feature seen in many Asteraceae species is the presentation of pollen known as "sensitive stamens." When touched by a pollinator (or another stimulus), the anther tube itself is drawn downward rapidly over the style. The downward movement is caused by the shortening of the staminal filaments.

The style, having remained in place, now protrudes through the top portion of the anther tube with fresh pollen on its stylar hairs. The pollen is now available to the pollinator that triggered the reaction.

The first literature reference of sensitive stamens in the Asteraceae was by Alexander Camerarius in 1722. Two centuries later in 1917 British botanist James Small reported on the degree of movement of both styles and stamens in 360 species and varieties in Asteraceae. Small reported that 70% showed some type of movement when touched.

As to staminal movement, two physiological studies have investigated the composite, *Cirsium horridulum*, the Giant Thistle (Hasenstein et al 1990, Pesacreta et al 1991). Their extensive studies give us an idea of how sensitive stamens operate. The Giant Thistle is found to a limited extent in New York (Mitchell and Tucker 1997).

When the sensitive stamens of this thistle were touched by a needle, a contraction downwards of the anther tube began within a quick one to two seconds after stimulation. The anther tube then shortened by an average of 30 %. After contraction, a period of at least 10 minutes was needed before the next contraction could occur. Some 25 minutes were needed for full re-elongation of the filaments. Contraction of the anther tube in this thistle could be induced at least 10 consecutive times, an amazing feature. Further observations showed that the outside cuticle of each stamen's filament was highly elastic and provided the contractive force. The downward movement also was dependent on the collapse of turgor pressure in the cortical cells of the filaments. The re-elongation was then provided by the re-establishment of turgor pressure of the cortical cells in the filaments.

The above information is just for one species. In our New York flora, you can observe sensitive stamens in wildflowers blackeyed Susan (*Rudbeckia hirta*), yarrow (*Achillea millefolium*), common burdock (*Arctium minus*), ox-eyed daisy (*Leucanthemum vulgare*), spotted knapweed (*Centaurea maculosa*) and Canada thistle (*Cirsium arvense*). My two favorites for seeing this unique response are spotted knapweed and a garden favorite of mine, bachelor button (*Centaurea montana*). The reaction in these two species is easy to see with a 5x dissecting microscope, the flower heads are easy to handle (no bristles), and the stamens are relatively large. When touched, the anther tube in these species goes down in 1 to 2 seconds leaving a mass of white pollen grains exposed on the stylar hairs demonstrating very nicely this significant advance in pollination efficiency.

#### Literature Cited

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# Workshop Recaps

# NYFA's Botrychium Workshop at Bailey Hortorium June 24-26, 2011 By Anna M. Stalter

Seven enthusiastic participants assembled at the Bailey Hortorium at Cornell on June 24 to learn more about the elusive Ophioglossiaceae from Art Gilman. Art, a consulting botanist from Marshfield, Vt. knows the family well and was keen to share his expertise.

On Friday evening, Art gave an excellent introduction to the taxonomy, identification, and history of study of *Botrychium* and its relatives, sharing several resources and insights that would aid our identification efforts over next two days. He mentioned the work of Robert Clausen, a Cornellian whose monograph on the Ophioglossaceae (1938) provides the most comprehensive treatment of the family to date.

We traveled Saturday to Jones Park near Vestal. One of our participants, Ken Hull, had discovered several species of *Botrychium* there and was excited to share his find with the group. No doubt our meanderings seemed out of place to the mountain bikers swerving by on the trails. Our group moved slowly and carefully, peering at every inch of ground at our feet. It quickly became obvious why these ferns



are so easily overlooked by the casual observer. I once heard Herb Wagner recall countless hours on hands and knees as he and his wife Florence scoured the continent in search of these cryptic species. But our efforts were well rewarded; we saw five *Botrychium* species in the rich, mesic forest at Jones Park.

On Sunday morning we first spent some time looking through the NY collections of *Botrychium* at the Bailey Hortorium. The novices among us were beginning to appreciate (and bemoan) the morphological variation that can be encountered in these species, but with Art's guidance and Robert Clausen's numerous collections to review, we resolved some of our doubts.

#### NYFA's Botrychium workshop at Bailey Hortorium (Cont.)

Leaving Ithaca, we drove north to Jamesville, NY, the vicinity of numerous records for *Botrychium lunaria* (L.) Sw. The area has been long been known for its unique flora; Hart's Tongue fern, *Asplenium scolopendrium*, a state-listed endemic, can be found nearby. Having obtained permission for access from the landowner, we hiked a short distance to where Art and David had found a few senescing individuals on a visit the day before. Though they were small and a bit difficult to discern under the *Thuja occidentalis* canopy, we were all pleased to get a glimpse of *B. lunaria*. After exploring the surrounding limestone cliffs and slopes for a while, we headed back to our cars and went our separate ways. Many, many thanks to Art for enriching our knowledge of this fascinating group of plants, and to David for arranging the workshop. I know we'll all be looking even more closely for *Botrychium* from now on!

#### Species seen at Jones Park

(Nomenclature follows Swale and Hassler 2002)
Botrychium matricariifolium (Doll) A. Braun ex Koch
Botrychium lanceolatum (Gmel.) Angstr. ssp. angustisegmentum (Pease & Moore) Clausen
Botrychium virginianum (L.) Swartz
Botrychium oneidense (Gilb.) House
Botrychium dissectum Spreng.



Botrychium matricariifolium (Doll) A. Braun ex Koch at Jones Park



Workshop participants Kim Smith, Kris Gilbert, Anna Stalter, Art Gilman, Ken Hull, David Werier, Barb Root, Anne Johnson, and Mike Rosenthal

#### NYFA's Late Spring Salix Workshop with David Werier

by Luke Cannon

#### Photographs by David Werier

On May 22 and 23, the New York Flora Association (NYFA) and the Bailey Hortorium hosted an exciting workshop on the genus *Salix* taught by David Werier of Ithaca, New York. The workshop was based out of Cornell University's Bailey Hortorium in Ithaca and focused on identifying the native and naturalized species of



in the Finger Lakes National Forest.

Salix in New York. Participants worked with Werier's treatment, the Salix of New York State.

The twelve participants enjoyed a weekend well balanced between time in the field and time in the laboratory, and even the weather was most pleasantly Field trips including cooperative. outings to the Finger Lakes National Forest, Hammond Hill State Forest, a fen in the Fall Creek valley, and several other Salix hot spots allowed for discussion of species ecology, habitat preferences, additional field characteristics, and of course some interesting non-salicacious botanizing on the side. Lab time focused on examination and identification of fresh specimens provided by Werier of most of the species of *Salix* known from New York.

At the Finger Lakes National Forest taxa that were seen included *S. alba, S. amygdaloides, S. petiolaris, S. lucida, S. eriocephala,* and the hybrid *S. eriocephala x S. petiolaris.* A roadside stop along Rt. 96 turned up specimens of *S. purpurea.* In Danby taxa that were observed included *S. eriocephala, S. bebbiana, S. sericea, S. eriocephala x S. sericea,* and a cultivated patch of *S. caprea* or possibly a closely related species *S. aegyptiaca.* A brief stop was made along the Six Mile Creek recreation way to see *S. atrocinerea.* At Hammond Hill State Forest taxa that were seen included *S. sericea, S. eriocephala, S. humilis, S. lucida,* and *S. eriocephala x S. sericea.* At a fen in the Fall Creek valley taxa that were seen included *S. x fragilis, S. pedicellaris,* and *S. serissima.* Additional fresh specimens of numerous other species were available in the lab.

# NYFA's Late Spring Salix Workshop with David Werier (cont.)

Werier's Salix treatment provides keys for both pistillate and staminate and for specimens specimens with mature foliage, allowing for identification throughout most of the growing season. His treatment also provides in depth comparisons of several of the similar shrubby species as well as some of the more common hybrid combinations which hopefully will increase the accuracy of future surveys and awareness of what genetic crossings are taking place.

With Salix being both an exciting and challenging genus for many, we are fortunate to have such a knowledgeable and accessible student of the genus in central New York. With any luck he will be offering this seminar again in 2012. Oh, and my new favorite willow species, *Salix lucida*, "shining willow".



Salix candida a species of calcareous peatlands. Although this species was not seen in the field during the workshop a fresh specimen was available for participants to work with.



Workshop participants from left to right Michael Siuta, Steven Daniel, Rich Ring, Ed Fuchs, William (Rocky) Gleason (in back), Robert Stewart (in front), Anna Stalter, Joanne Schlegel, Luke Cannon (in back), Fred Gouker (in front), and Louise Raimondo.

# NYFA 2011 Sedge Workshop with Tony Reznicek by Steven Daniel

The 2011 NYFA sedge workshop, held June 30 and July 1, and taught by Tony Reznicek, was energizing, information-packed, and great fun. Based at the Finger Lakes Institute in Geneva, the focus was on sedges that grow on limestone soils in central and western New York.

After an optional Wednesday evening lab session, the 16 eager participants began in earnest on Thursday morning. Tony gave a brief Powerpoint introduction to sedges in the lab, and we were off to see them in the field. The first stop was at Seneca Lake State Park, where we stopped by an unassuming roadside ditch. It turned out to be a great place to see a variety of interesting species, including uncommon ones like *Carex molesta* and *C. annectens*.

Next we headed to the Rush Oak Openings, south of Rochester, -a DEC managed woodland on the Onondaga Escarpment, whose thin rocky soils are home to a great variety of sedges and other interesting plants. There were many highlights, including large numbers of state rare sedges including the striking *Carex caryenana*, *C. jamesii*, and *C. hitchcockiana*.

Thursday evening was again devoted to lab work, sharing, and discussions with Tony. On Friday we spent the day at two Rochester area parks - Mendon Ponds and Powder Mills. At Mendon we visited a variety of habitats – a sandy, open hillside, a rich fen, dry woodland with wet kettle holes, and an acid bog. The diversity of these sites provided a great mix of species, and there were many highlights, including the rare *Carex sartwellii*, whose type specimen was collected nearby in Penn Yan. Tony even allowed time for "orchid gawking" as the *Calopogon* was in its glory. We ended the day at Powder Mills Park, with its rich floodplain species, including the stunning *Carex sprengelii*.

This was an inspiring workshop! We saw an amazing diversity of sedges, interacted with other 'sedgiphiles,' and had lots of laughs amid the learning. It is a privilege to be in the field with Tony, and we left with many tips for field ID not found in any books.

Special thanks to Tony Reznicek for teaching another great workshop; to Ed Frantz for organizing it; to the Finger Lakes Institute that provided excellent lab space, housing and food; and to Bruce Gilman, FLCC, for securing a college van and driving us the to the field sites!

#### Plant List-2011 Sedge Workshop with Tony Reznicek Sedges Seen at Seneca Lake State Park

Carex annectens Carex granularis Carex molesta Carex pallescens Carex spicata (naturalized) Carex tenera Carex vulpinoidea

#### Sedges Seen at Rush Oak Openings

Carex albicans	<i>Carex laxiculmis</i> var. <i>copulata</i>
Carex albursina	Carex laxiculmis var. laxiculmis
Carex aurea	Carex laxiflora
Carex blanda	Carex normalis
Carex bromoides	Carex pallescens
Carex careyana	Carex pedunculata
Carex cephalophora	Carex pensylvanica
Carex communis	Carex plantaginea
Carex cristatella	Carex retroflexa
Carex digitalis	Carex rosea
Carex gracillima	Carex sparganioides
Carex granularis	Carex swanii
Carex hitchcockiana	Carex woodii
Carex jamesii	

#### Sedges seen at Mendon Ponds: Fen (f); Wooded Hillside (w); Vernal Pools (v); Bog (b); sandhill (s)

•	Bog (b) / building (b)
<i>Carex aquatilus</i> f	<i>Carex prairea</i> f
<i>Carex atlantica</i> v	Carex rosea w
<i>Carex bebbii</i> f	<i>Carex sartwellii</i> f
<i>Carex billingsii</i> b	Carex sparganioides w
<i>Carex blanda</i> w	Carex spicata w
<i>Carex buxbaumii</i> f	<i>Carex sterilis</i> f
<i>Carex canescens</i> v	<i>Carex stipata</i> f
Carex cephalophora w	<i>Carex stricta</i> f
<i>Carex comosa</i> f	<i>Carex tetanica</i> f
<i>Carex digitalis</i> w	Carex tribuloides v
<i>Carex exilis</i> f	Carex triflorum var. triflorum v
<i>Carex gracillima</i> w	<i>Carex umbellata</i> s
<i>Carex lacustris</i> f	<i>Cladium mariscoides</i> f
<i>Carex lasiocarpa</i> f	<i>Cyperus lupulinus</i> s
<i>Carex leptalea</i> f	<i>Eleocharis rostellata</i> f
<i>Carex limosa</i> b	Eriophorum viridi-carinatum f
<i>Carex muhlenbergii</i> s	<i>Eriophorum virginicum</i> b
<i>Carex normalis</i> w	<i>Rhynchospora alba</i> b
<i>Carex pellita</i> f	<i>Rhynchospora capillacea</i> f
<i>Carex pensylvanica</i> s	Schoenoplectus acutus f
<i>Carex platyphylla</i> w	Trichophorum planifolium w

#### Sedges seen in the Irondequoit Creek Floodplain at Powder Mills Park

Carex alopecoidea Carex grisea Carex laevivaginata Carex lupulina Carex radiata Carex sparganioides Carex sprengelii Carex tenera Carex trichocarpa



2011 NYFA Sedge Workshop Participants Left to Right: Bruce Gilman, Mary Ann Furedi, Steven Daniel (kneeling), Steve Grund, Tony Davis, Tony Reznicek, Rocky Gleason, Rich Ring, Rick Koval, Mark Bowers, Susan Sprecher, Lindsey Bocian, Kevin Bliss, and Loree Speedy. Missing: Judy Robinson, David MacDougall



### NYFA Field Trips to Bergen Swamp and Letchworth State Park.

#### July 31 and August 1, 2011

#### By Steven Daniel

On July 31, eleven interested botanists and nature lovers gathered at Bergen Swamp for a day-long exploration of its woodlands, and wetlands. Bergen has long been known as one of the premier botanical areas in New York. The group was eager to learn some of its wonders. In not atypical NYFA field trip fashion – we spent well over 2 hours just getting to our lunch spot – less than 3/4 mile from where we began!

There were many highlights. Some were non-plant: butterflies like the common buckeye, a southern stray rarely seen inland in western New York, as well as several giant swallowtails. The group got a chance to see first hand, and some collected for depositing in herbaria, the invasive grass *Brachypodium sylvaticum*, that is a threat to the floral biodiversity of the preserve. It was first recorded at Bergen (and in NY), in fall 2009. See the Winter 2010 NYFA Newsletter for more information on this grass. Some noteworthy plants rare in New York we observed included flowering *Triantha glutinosa* (Sticky False-Asphodel,) Anticlea elegans (Death Camas), Triglochin palustris (marsh arrowgrass), and Oligoneuron houghtonii (Houghton's goldenrod), a federally threatened species. Oligoneuron ohionensis, flowering slightly later than O. houghtonii was in bud. Interesting rare sedges included Scleria verticillata, Carex gynocrates, Carex crawei, *Eleocharis rostellata*, and *Trichophorum cespitosum*. We compared the native *Phragmites* with the invasive Eurasian one, the latter a threat to Bergen's rich fens. Packera paupercula (balsam ragwort) and a few plants of Cypripedium candidum, the small white lady's slipper, both past flowering, were noted. It was a very full day – a complete plant list, compiled by Anne Johnson, is attached.

On August 1, seven eager plant hunters met at Letchworth State Park. Douglas Bassett, Park Naturalist, was our guide to a variety of habitats in this diverse and spectacular state park. Highlights included *Astragalus neglectus* (Cooper's Milk Vetch), a state rare plant, the enigmatic *Pterospora andromeda* (giant pinedrops) and rosettes of *Frasera caroliniensis* (American columbo). After lunch some of us continued into the gorge to see *Pinguicula vulgaris* (butterwort) and *Saxifraga aizoides* (yellow mountain saxifrage), disjuncts found in a handful of gorges in central and northern New York. These were a couple of days of outstanding field trips in some of the finest preserved habitats in western New York. For a list of the plants seen at Bergen Swamp and compiled by Anne Johnson, send an email request to editor@nyflora.org.

# 2012 New York Flora Association Research Awards

# Purpose and Eligibility

This award is designed to promote botanical research in the state of New York. Proposals may be submitted by NYFA members and non-member students conducting research relating to the flora of New York, especially when a substantial portion of the work occurs within the state.

### Award Level and Announcement

Awards are generally limited to \$500 to support each recipient's research proposal. The award winners will be posted on-line, published in the NYFA newsletter, and announced at the 2012 NYFA annual membership meeting.

### Proposal Evaluation

Proposals will be evaluated by a committee appointed by the NYFA board. Decisions will be based on the quality of the proposal and the merits of the research to be performed, as well as the feasibility of the study.

### **Proposal Guidelines**

The application shall consist of:

- 1. **Title page** must include: title of proposal, name of investigator(s), and the investigator's institutional and departmental affiliation (student investigators should also include the year of study and name of student's research advisor).
- 2. Narrative must be between 1,200 2,000 words, with a description of the research, including appropriate conceptual background, purpose or objective, brief outline of methodology, the potential contribution or significance to the botanical sciences in New York, and a bibliography. The narrative should be written in Microsoft Word in Times New Roman 11 point font, double-spaced.
- 3. Budget (one page maximum) detailing how the funds would be used.
- 4. A letter of support (one page maximum) from a supervisor, colleague/collaborator, or a student's research advisor.

Proposals and supporting letters must be received **by 4:00 p.m. on Friday, March 2, 2012.** Submit required materials by email as a WORD or PDF file to:

#### christopher.martine@plattsburgh.edu.

#### **Project Completion**

Awardees will be required to prepare a summary of their project in a format that can be published in the winter 2013 NYFA newsletter.

# Seeking Your Input

What programs, field trips and workshops would you like to see offered in 2012?

What type of articles do you most enjoy seeing in the newsletter?

We are always looking for ideas and contributions for the outings and newsletter. Only with member participation will NYFA continue to be a lively growing organization. Send your ideas, photos and articles to: editor@nyflora.org.



Hot off the Presses

Cultivars of popular ornamental woody plants that are being sold in the United States as non-invasive are probably anything but, according to an analysis by botanical researchers published in the October issue of BioScience. Tiffany M. Knight of Washington University in St. Louis, Missouri, and her coauthors at the Chicago Botanic Garden write that the claims of environmental safety are in most cases based on misleading demographic evidence that greatly underestimates the plants' invasive potential. What is more, the offspring of cultivars do not usually "breed true" and may be more fecund than their parents, especially if they cross with plants from nearby feral populations. Plants labeled as "less fecund cultivars" including glossy buckthorn (*Frangula alnus*), burning bush (*Euonymus alatus*), and Japanese barberry (*Berberis thunbergii*), are often touted as "safe" alternatives to invasive relatives and were included in the study.

Read the full article at:

http://www.aibs.org/bioscience-press-releases/111007\_noninvasive\_cultivar\_buyer\_beware.html

Non-invasive" cultivar? Buyer beware.

# The Identification of Grasses," by H. D. Harrington

A grass can be "glumey" in more ways than one When its classification remains to be done; You pull off the parts, and soon feel your age Chasing them over the microscope stage!

You peer through the lenses at all of the bracts And hope your decisions agree with the facts; While your oculist chortles with avid delight As you strain both your eyes in the dim table light.

You are left on the horns of quite a dilemma When you count the nerves on the back of the lemma; Then you really get snoopy and turn each one turtle To see if the flower is sterile or fertile.

And then the compression, no problem is meaner--Is it flat like a wallet or round like a weiner? "How simple," you think, "for a mind that is keen"---But what do you do when it's half-way between?

You probe and you guess how the florets will shatter, For you know later on it is certain to matter; You long for the calmness of labor that's manual When the question arises-- "perennial or annual?"

And that terrible texture, the meanest of all, Is one of the pitfalls in which you can fall; "Cartilaginous" maybe--or is it "chartaceous?" Has even the experts exclaiming "good gracious!"

Then you wail as you wade through the long tribal key "Oh why must this awful thing happen to me?" "Grasses are easy," our teacher declares, As he mops off a brow that is crowned with grey hairs!

Excerpted From: HOW TO IDENTIFY GRASSES AND GRASSLIKE PLANTS — 1977 Sedges and Rushes By H.D. Harrington Ohio University Press, Swallow Press Submitted by Steven Daniel

# REMINDERS



Reporting on the Flora of New York

It's easy to stay up to date on the latest in New York state plant sightings, plant related events, job postings, conservation issues, and many other topics throughout the state by visiting: http://nyflora.wordpress.com/

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book page or go to http://www.facebook.com/pages/New-York-Flora-Atlas/47147037126 It is a great place to connect with other fans,

and share photos and send out a plant question to the NYFW community.

Please note that all programs and trips are posted on the NYFA calendar at: http://www.nyflora.org/calendar-of-events/ Let us know if your have any others you would like to post by sending them to Steve Young at: young @nynhp.org

You can promote awareness of NYFA by proudly purchasing and wearing Café Press items at:

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Countless individuals and institutions have provided data, effort, and funding to make the New York Flora Digital Plant Atlas available, incorporating information from over 70 herbaria. Why not take advantage of this unparalleled resource and explore New York's floral riches by visiting the website at:

#### http://newyork.plantatlas.usf.edu

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