

NYFA Newsletter

New York Flora Association
of the New York State Museum Institute

Vol. 3, No. 3 Co-Editors: Richard S. Mitchell Robert E. Zaremba December - 1992
New York State Museum The Nature Conservancy
ADDRESS ALL CORRESPONDENCE TO NYFA, 3132 CEC, ALBANY, NY 12230 - DUES \$10 PER YEAR

Finding New York's Fern "Hot-spot" -

by Frank Knight

Where will New York's premiere natural fernery be found - that single contiguous site with the most fern species? I propose a friendly competition, and if it gets fierce, we'll change the word "single" in the question above to "smallest". Pterido-fights? What a concept. How and why did a casual, after-work bachelor outing to Joralemon Park (July 1991) lead to this?

Soon after joining NYFA, I went on my first association field trip in June 1991 to the ice meadows below The Glen near Warrensburg. Dick Mitchell told us, while awaiting a few late comers, about Joralemon Park in the Town of Coeymans, Albany Co., the site of an earlier NYFA field trip. Around 1980, a friend of his who lives near the Park had excitedly told Dick about 20 or more kinds of ferns she had seen there. Incredulously, he accompanied her there and confirmed, after a leisurely stroll, that there were at least 18.

In July 1991, with our spouses and children off vacationing, Craig Thompson, a bored, fellow Environmental Educator at DEC, and I decided to take an after-work look at Joralemon Park. As Town residents, the Thompsons had become interested in the ferns there while clearing Park trails with their son Robert's Cub Scout Pack (#67).

Swatting mosquitoes with one hand and holding our fern field guides in the other, we began our look a quarter mile south of the park's tennis court, east of County Rt. 102 near the old lime kiln. We dutifully found 18 species and tucked our lists away.

The following spring, Craig's wife, Roseanne Woodard, asked me to present a fern slide show at the June meeting of the Capital District Audubon Chapter for which she serves as program chair. A walk at Joralemon was scheduled for the next Saturday. I agreed to lead the walk, provided we take another look and get a confirmation to be sure that our list was accurate. Fellow town resident and fern enthusiast Mike Corey (who teaches moss/liverwort courses at HVCC and serves on the town park



committee) wasn't able to make the field trip, but he agreed to come along on our dry run. Before seeking ferns, he also showed us golden-seal (*Hydrastis canadensis*) and green violet (*Hybanthus concolor*).

In the following listing, the 18 ferns found on our original trip are not marked. Additions are noted by the following symbols: ferns added by Mike in June '92 are marked with (*), and those he added later in September with a (+). My finds are marked (**)

FERNS OF JORALEMON PARK (1992)

<i>Botrychium virginianum</i>	rattlesnake fern
<i>Osmunda claytoniana</i>	interrupted fern
<i>O. regalis</i>	royal fern
<i>Polypodium virginianum</i>	common polypody
<i>Dennstaedtia punctilobula</i>	hay-scented fern
<i>Adiantum pedatum</i>	maidenhair fern
* <i>Pellaea atropurpurea</i>	purple cliff brake
<i>Pteridium aquilinum</i>	bracken
+ <i>Asplenium ruta-muraria</i>	wall-rue spleenwort
<i>A. platyneuron</i>	ebony spleenwort
<i>A. trichomanes</i>	maidenhair spleenwort
<i>Athyrium asplenoides</i>	lady fern
* <i>A. pycnocarpon</i>	glade fern
** <i>A. thelypteroides</i>	silvery spleenwort
<i>Camptosorus rhizophyllus</i>	walking fern
<i>Cystopteris bulbifera</i>	bulbet fern
<i>C. fragilis</i>	fragile fern
<i>Dryopteris carthusiana</i>	spinulose wood fern
<i>D. marginalis</i>	marginal wood fern
+ <i>Matteuccia struthiopteris</i>	ostrich fern
<i>Onoclea sensibilis</i>	sensitive fern
<i>Polystichum acrostichoides</i>	Christmas fern
<i>Thelypteris novaboracensis</i>	New York fern
* <i>T. palustris</i>	marsh fern
** <i>Woodsia obtusa</i>	blunt-lobed woodsia

Some of our finds were downright serendipitous. As Mike and his son Eben left early during our June 1992 dry run field trip, he pointed off to our right to a trail through a notch of limestone saying, "Just cross the old Youth Conservation Corps (YCC) bridge and go down into a large sink and you'll find the *Athyrium* spleenwort just off the trail on your left." So, over the hill and through the woods we went, and sure enough, there was *A. thelypteroides*. Comparing notes later, we both thought the other had misidentified the plant. On our next and last 1992 visit to the site in September, we verified that Mike had been describing his find, glade fern *A. pycnocarpon*, the narrow-leaved spleenwort, while I had not followed the trail far enough, and had instead found the silvery spleenwort.

On this September visit, Mike and I proudly showed our finds to lichenologist and co-author of *Natural Areas of Albany County*, Claire Schmitt. As we hurried along to the special rock outcropping that supported *Pellaea atropurpurea* and *Asplenium ruta-muraria* which neither Claire nor I had seen at Joralemon before, *Panax quinquefolius* caught our attention with its bright yellow autumn leaves. Once I'd seen and noted the new ferns, I was distracted by other interesting flowering plants: *Symphoricarpos alba*, snowberry growing in its native haunts, where for the first time I was tempted neither to pop its fruits nor throw them at someone; *Rhus aromatica*, fragrant sumac, with its deep red autumn foliage, invited my

touch with no threat of giving me a rash. Claire Schmitt, while impressed with our finds, was even more delighted with her discovery of an uncommon limestone lichen, *Psora pseudorusellii*, which she had never seen before. Back home, I called Bob Zaremba and Dick Mitchell asking about fern grottos, but I was still left with the nagging question: where is New York's single fern hot spot - the site with the most naturally occurring species? Is it in Onondaga County where more than 50 of New York's approximately 88 native fern species and hybrids occur?

I saw an old friend, Diane Wheelock, from OPRHP's Clark Reservation, Jamesville, NY at the annual conference of the Coalition for Living Museums (CLM), and asked her to send me a list of the ferns from that site. She sent the lists, which date back to collectors and observers in the 1950s and before. To my surprise, with the exception of hart's-tongue fern (*Phyllitis scolopendrium*), there were only three on her lists that we didn't have at Joralemon: cinnamon, oak and Goldie's ferns. Diane had also confirmed that she had recently seen all the ferns on her lists. They didn't have the interrupted fern and a wall-rue or woodsia. With their 26 species to our 25, we only had one find left to tie the record and two to win. The pteridofight was on!

It would be a simple enough task to ask John Mickel of the N.Y. Botanical Garden for help in locating such a hot-spot, but it wouldn't be nearly as much fun as prompting folks to go afield in quest a friendly contest. The birders do it, with their Christmas Bird Counts and Big Days. There is even an annual international event in May in New Jersey called the World Series of Birding, in which each team attempts to record the highest number of bird species in a single 24 hour period. If one of NYFA's written goals is to update the list of vouchered species across the state, why not stimulate exploration with a little sport? I promise you that the Coreys, Knights, Thompsons and Claire Schmitt will be out sweeping the Joralemon area in the spring to find fern species numbers 26 and 27. Is there anyone out there in New York who can find a 28, 29 or 30 in your area?

Frank Knight, NYS DEC Environmental Educator,
50 Wolf Rd., Albany, NY 12330

Editorial Note:

Fine idea, Frank! Let's take it one step further and have a contest with a prize offered by NYFA to the winning team or individual (See page 8). By the way, the first 18 fern species you found at Joralemon were not the same 18 that we saw there a decade ago. No matter. You've found all those by now and more. (Dick Mitchell)

Note: The illustration on page 1 is by Anne Lacy, from the TNC Publication, *Adirondack Wild Guide*.

Recent Introduction of Certain Prairie Species into the Albany Pine Bush --

by Chuck Sheviak

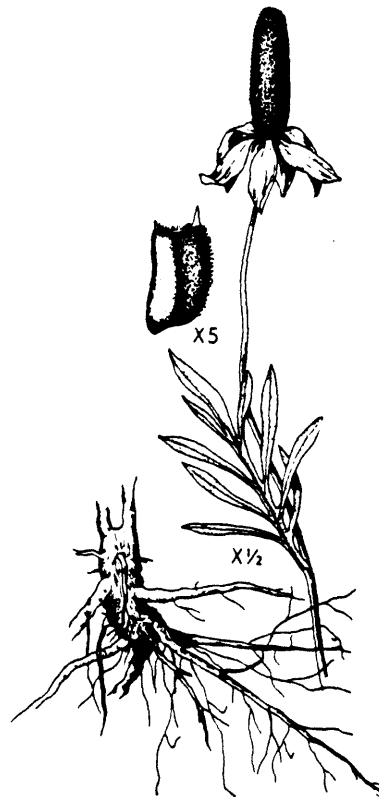
Among the biogeographic significance of the Mohawk and Hudson River valleys are occurrences of a number of species characteristic of the prairies. *Bouteloua curtipendula*, *Sporobolus heterolepis*, *Lithospermum canescens* and others speak of past climatic shifts and corresponding plant migrations. Many others, however, clustered at points of commerce, such as the Port of Albany, are clearly the result of recent human activity. Still others are less easy to explain: did a plant fragment fall off a train and find root on a disturbed embankment, or did plants seed in from an ancient patch on a nearby cliff; was there an escape from an early garden plot, or have populations persisted for millennia in sandy openings; were some of these species cultivated by Native Americans, cleaned from a Buffalo hide obtained in trade, or did seeds fall naturally as the beast wandered eastward? Such questions are rarely answered definitively, and are perpetual sources of frustration for students of floristics and biogeography.

Particularly troublesome are cases in which several remarkable species are found associated in an area supporting still other 'extralimitals,' long considered to be native. My experience with such a case in the Albany Pine Bush should be of interest, because an artificial means of introduction is clearly indicated, and because future workers might not recognize the correlation.

The story begins in the summer of 1979, when I was first familiarizing myself with the Albany Pine Bush. Fresh from Illinois, I was drawn to the small openings I saw, dominated by *Andropogon gerardii*, *Sorghastrum nutans*, and especially *Schizachyrium scoparium*. These areas were appealing because of their prairie aspect, despite their generally eastern flora. Over the next couple years I found a curious pattern in the distribution of the *Schizachyrium*; rather tall-growing, slender-leaved plants, often a beautifully glaucous silvery blue, seemed limited to roadsides in the housing developments of 'Pinehurst' and 'The Dunes,' and along the adjacent section of rt. 155. This was the plant I was familiar with in the Midwest, with leaves rather uniformly scattered along the culm, in contrast to the lower-growing plant with broader, predominantly basal leaves that occurred throughout the Pine Bush. I didn't really ponder this at the time, but simply dismissed it as perhaps related to the colonization of the barren sands along the roads.

Then, one day in July, 1981, I was returning from the field with Tim McCabe, one of our Biological Survey entomologists. I was driving through Pinehurst, when suddenly, on the roadside next to the car, I spotted several plants of *Ratibida columnifera*.

Jamming on the brakes, I exclaimed, "Ratibida columnifera!!" into Tim's ear. When the color returned to his face, he casually looked out, and, with recognition born of his North Dakota youth, calmly remarked, "Yeah..." Then, after a pause, "Yeah!" The plants were in early bloom, and closer examination disclosed a number of plants scattered along the roadside and up a side street toward a cul-de-sac. I collected a specimen for the State Herbarium.

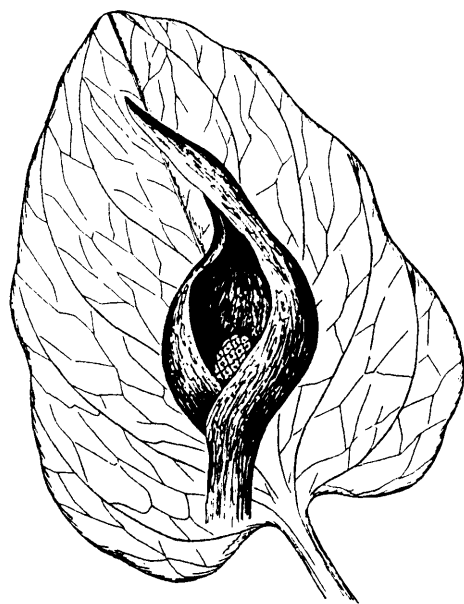


Ratibida columnifera is a species of the Plains that reaches its eastern natural range limit in western Illinois. It was an obvious introduction, but I was disappointed to find that it had previously been recorded from the Port of Albany. No obvious means of introduction into Pinehurst was apparent, however, and any connection with the port seemed tenuous. The mechanism became apparent in 1982, as I was driving across Nebraska. Mile upon mile of the right-of-way of I-80 was planted to *Festuca elatior*, a totally absurd practice in a prairie state. Scattered throughout the *Festuca* were occasional plants of *R. columnifera*, and the connection was obvious. The principal suppliers of grass seed in the country are large-scale operations in Nebraska and South Dakota. The *Festuca* that was seeded into Pinehurst probably came from one of these sources, and the seed lot was contaminated with *R. columnifera*, just as was the seed used along I-80.

With this probable origin in mind, I returned occasionally to the area, and eventually found two

other westerners. In 1984, a few plants of *Plantago patagonica* were found in barren sand at the cul-de-sac, and within a few feet of the *Ratibida* that first caught my attention, a patch of *Ambrosia psilostachya*. The latter, a perennial species with stoloniferous rhizomes, is similar to *A. artemisiifolia*, but can be recognized by its somewhat less delicately divided leaves. The patch had been mowed-off, but an identifiable specimen was obtained by digging a plant with the characteristic rhizomes. I wanted a better specimen, however, and the following year I was fortunate to find that a small portion of the patch had been missed by the mowers, and a good plant in bloom was collected.

The occurrence of these species along the roadside and their probable introduction in grass seed brings the story full circle. I wonder if the *Schizachyrium scoparium* that I first noticed as having the 'prairie look' was in fact an introduction, a contaminant in the *Fescue* with which it grows. If this is so, then our indigenous population may become introgressed and over time diverge from what it was originally. If indeed something of the sort occurs, it likely would be mistaken for a natural process and contribute to taxonomic ambiguity, were it not for the bright yellow flags of *Ratibida columnifera* that first attracted my attention.



Skunk cabbage [*Symplocarpus foetidus* (L.) Salisb.]

This big aroid blooms so early in the season that it may be seen melting its way up through the spring snow, warmed to over 25°C by the metabolic heat of its rapidly growing inflorescence.

A Brief Life History Study of Skunk Cabbage

by Cris Winters, Pottsdam, NY

(Printed with permission from the St. Lawrence County Flora Newsletter #10)

As a graduate student at the University of Delaware, I conducted a study of a population of skunk cabbage [*Symplocarpus foetidus* (L.) Salisb.] from March through September 1988. What led me to this study was the observation that skunk cabbage plants which produced many early leaves did not seem to produce flowers. The early spring flowers in a population were produced on plants that sent up leaves well after flowering had begun. The original goal of my study was to examine two questions: (1) does the plant "pay" for the early production of flowers with a reduction in photosynthetic gains, and (2) does skunk cabbage have the ability to reproduce both sexually (seeds) and asexually (rhizomes), and therefore have some flexibility in its reproductive methods? Although there were a few studies in the literature (mostly from the early 1900s -- e.g. Williams, 1919), many interesting aspects of the life history had not been examined, and my questions had not been approached at all. Not surprisingly, the direction and outcome of the study were not what I expected.

My study consisted of mapping individual plants and associated inflorescences in a 4 x 6-meter study area and of digging up 37 plants adjacent to the study area for physical dissection. The study area was about 2 km north of the University of Delaware in Newark, in a marshy opening in deciduous woods.

My findings indicated that age was impossible to determine for an individual plant. As the plant grows, it is pulled down into the soil by many contractile roots that are produced in tiers on the main root. The tiers of smaller contractile roots, which probably produced one tier each season, cannot be used to age the plants because, as the plant grows, the main root and its record of root tiers is apparently abraded and wears away. One study estimates that plants have a life span of up to 75 years (Shull, 1925), but there is no way to determine this without decades of study.

As part of my investigation to determine whether there were a relationship between photosynthetic surface area (leaf size and number) and size of plants, I measured the circumferences of all juvenile and mature plants at the leaf bases (about 2 cm below the soil surface). During this close examination of many plants, it appeared that as plant circumference increased, the number of inflorescences per plant also increased. My simple graphic comparisons indicated an obvious positive relationship between the circumference and number of inflorescences. In addition, another graphic comparison of leaf number, inflorescence number, and circumference among the plants I dug showed a clear positive correlation among all three factors. I dissected several skunk cabbage

plants with the guidance of Dr. Tom Ray at the University of Delaware, whose research is devoted to the evolution and development of the tropical Araceae. We found that inflorescences are formed several seasons before flowering actually occurs and that both inflorescence and leaf formation follow a tightly prescribed pattern that is a direct consequence of season-by-season growth and development. My first question, does the plant "pay", turned out to be irrelevant for skunk cabbage.

Although many herbaceous perennials (including many Aroids) are capable of reproduction at two levels, clonal spread and seed production, skunk cabbage appears to reproduce only by seed. All of the small plants I examined were attached to a hard brown seed, and I could find no evidence of clonal mechanisms in any of the plants I examined. The clumps one finds of apparently even-aged plants seem to be successful seedlings of one inflorescence. The skunk cabbage fruit (or infructescence) generally bears several seeds on the spadix. When the infructescence is separated from the parent plant, it frequently remains intact, so that all its seeds germinate in one location. Mature plants appear to be more evenly spaced throughout a population than seedlings or juveniles, probably due to density-related mortality within each plant clump. My second question, (is there flexibility in reproductive methods?), was answered, at least for the population I studied, but I was surprised to find no evidence of clonal growth. Many of the Aroids (jack-in-the-pulpit, for instance) exhibit this trait according to the literature.

This brief study raised more questions than it answered for me. It was rewarding, however, to learn that there are discoveries to be made (or tripped over) even for the novice researcher working with the commonest of plants. I would like to hear from others who have studied the ecology or biology of skunk cabbage, as well as from people who have local populations that could be observed and/or studied intensively.

References

- Foerste, A.F. 1888. The development of *Symplocarpus foetidus*. Torrey Bull. 15: 152-153.
 Ray, T.S. 1988. Survey of shoot organization in the Araceae. Am. Jour. Bot. 75: 56-84.
 Shull, M. 1925. *Spathema foetida* Bot. Gaz. 79: 45-58.
 Small, J.A. 1959. Skunk cabbage. Bull Torrey Bot. Club 86: 413-421.
 Williams, K.A. 1919. A botanical study of skunk cabbage (*Symplocarpus foetidus*) Torrey 19: 21-29.

We Welcome Articles on New York Botany!
 Fieldwork, rare plant finds, taxonomy or just opinions. Submit on disk, preferably in WordPerfect 5.1, to Richard Mitchell at the address on our banner.

NYFA Field Trip #7 to Tivoli Bays and Stockport Creek -

by Bob Zaremba.

On September 12, 1992 our seventh NYFA field trip began with 23 members hiking over rocky terrain, through vines, and across mudflats at Cruger's Island in Tivoli Bays, Dutchess County. We saw a single plant of *Plantago cordata* and numerous *Bidens bidentoides*, both rare and restricted to the estuarine, freshwater intertidal zone of the Hudson River. We searched unsuccessfully for *Micranthemum micanthemoides*, but agreed that there is potential habitat that should be examined further. We saw good examples of freshwater tidal mudflats and marshes.

A second stop was made at the mouth of Stockport Creek at the Hudson River, where we saw a large stand of *Plantago cordata* (2000+) on a sheltered cobble shore, and scattered plants growing in sand along the open river.

It was a vigorous day with a few dead-end hikes and a nervous run across a railroad bridge. Thankfully, we didn't lose anyone, and we saw a diverse assortment of plants in one of New York's most unusual environments.

Attending: Skip Blanchard, Harold Brotzman, Steve Clemans, Barbara Conolly, Garrett Crow, Knowlton Foote, Barre Hellquist, David Hunt, Bob Ingalls, Sarah Ingalls, Anne Johnson, Eric Lamont, Betty Lotowycz, Les Mehrhoff, Dick Mitchell, Andy Nelson, Mike Renda, Tom Sarro, Gordon Tucker, Sally Underwood, Pam Weatherbee, Nan Williams, and Bob Zaremba.

Species List for Tivoli Bays Visit of NYFA of 9/12/92, based on a list from Westad and Kiviat, Bard College, with field notes by David Hunt, Anne Johnson, Eric Lamont, Pam Weatherbee, and Bob Zaremba. Nomenclature based on Mitchell's checklist (1986).

Acer rubrum
Acer saccharinum
Acer negundo
Acer saccharum
Agrimonia cf. gryposepala
Agropyron repens
Agrostis cf. perennans
Alliaria petiolata
Alnus cf. serrulata
Amaranthus cannabinus
Ambrosia trifida
Amorpha fruticosa
Amphicarpa bracteata
Anemone virginica
Antennaria neglecta
Apios americana
Apocynum cannabinum
Aquilegia canadensis

Arabis lyrata
Aralia nudicaulis
Arisaema triphyllum ssp. *triphyllum*
Asclepias syriaca
Asplenium platyneuron
Aster lateriflorus
Aster puniceus
Aster divaricatus
Aureolaria flava
Aureolaria virginica
Betula alleghaniensis
Bidens bidentoides
Bidens cernua
Bidens laevis
Boehmeria cylindrica
Cardamine pratensis
Carex radiata
Carex pensylvanica
Carex cf. *laxiflora*
Carex platyphylla
Carex plantaginea
Carya glabra
Carya cordiformis
Carya ovata
Celastrus orbiculata
Centaurea maculosa
Cephalanthus occidentalis
Chelone glabra
Cicuta maculata
Cinna arundinacea
Circaea lutetiana ssp. *canadensis*
Cirsium arvense
Clematis virginiana
Collinsonia canadensis
Commelina communis
Cornus alternifolia
Cornus amomum
Cornus foemina ssp. *racemosa*
Corylus americana
Cotinus coggygria
Danthonia spicata
Daucus carota
Desmodium cf. *glutinatum*
Dioscorea villosa
Dryopteris marginalis
Echinochloa cf. *muricata*
Echinochloa crusgalli
Eleagnus umbellata
Eleocharis palustris
Elymus virginicus
Epipactis helleborine
Equisetum fluviatile
Eupatorium perfoliatum
Eupatorium rugosum
Eupatorium maculatum
Eupatorium serotinum
Fagus grandifolia

Forsythia viridissima
Fraxinus americanus
Fraxinus pennsylvanica
Galium palustre
Gaylussacia baccata
Gentiana clausa
Geranium maculatum
Geum canadense
Geum laciniatum
Hackelia virginiana
Hamamelis virginiana
Hedyotis longifolia
Helenium autumnale
Helianthus tuberosus
Hemerocallis fulva
Hepatica nobilis var. *obtusata*
Heteranthera reniformis
Humulus lupulus
Impatiens capensis
Iris pseudoacorus
Iris versicolor
Juncus tenuis var. *dudleyi*
Juncus tenuis var. *tenuis*
Juniperus virginiana
Laportea canadensis
Leersia virginica
Leersia oryzoides
Lemna minor
Lespedeza sp.
Ligustrum vulgare
Lilium canadense
Lindera benzoin
Lindernia dubia var. *inundata*
Liriodendron tulipifera
Lobelia cardinalis
Lobelia siphilitica
Lobelia inflata
Lonicera japonica
Lonicera morrowii
Ludwigia palustris
Lycopus cf. *uniflorus*
Lysimachia ciliata
Lythrum salicaria
Melilotus alba
Mentha arvensis
Mimulus ringens
Mitchella repens
Morus rubra
Myriophyllum spicatum
Nuphar luteum ssp. *macrophyllum*
Onoclea sensibilis
Orontium aquaticum
Ostrya virginiana
Panicum virgatum
Panicum clandestinum
Parthenocissus quinquefolia
Peltandra virginica

Philadelphicus odoratus
Phragmites australis
Physocarpus opulifolius
Pilea fontana
Pilea pumila
Pinus rigida
Plantago cordata
Plantago major
Platanus occidentalis
Poa compressa
Poa nemoralis
Polygonum virginianum
Polygonum sagittatum
Polygonum cespitosum var. *longisetum*
Polygonum persicaria
Polygonum punctatum var. *confertiflorum*
Polygonum virginianum
Polypodium vulgare
Pontederia cordata
Populus deltoides
Potamogeton perfoliatus
Potamogeton nodosus
Prunella vulgaris
Prunus virginiana
Prunus serotina
Quercus bicolor
Quercus rubra
Quercus montana
Quercus palustris
Ranunculus hispidus var. *caricetorum*
Rhamnus cathartica
Rhus typhina
Rhus aromatica
Robinia pseudoacacia
Rosa multiflora
Rubus strigosus
Sagina procumbens
Sagittaria calycina
Sagittaria graminea
Sagittaria rigida
Sagittaria latifolia
Sagittaria subulata
Salix cf. *fragilis*
Sanicula marilandica
Sassafras albidum
Scirpus fluviatilis
Scirpus tabernaemontanii
Scirpus pungens
Scirpus americanus
Setaria viridis
Smilacina racemosa
Smilax herbacea
Solanum dulcamara
Solidago caesia
Solidago gigantea
Solidago arguta
Solidago squarrosa

Solidago juncea
Solidago bicolor
Solidago canadensis var. *scabra*
Solidago rugosa
Solidago patula
Spiraea latifolia
Spirodela polyrhiza
Staphylea trifoliata
Strophostyles helvula
Syringa vulgaris
Thalictrum pubescens
Thuja occidentalis
Tilia americana
Toxicodendron radicans
Trapa natans
Tsuga canadensis
Tussilago farfara
Typha latifolia
Typha x glauca
Ulmus americana
Vaccinium pallidum
Vaccinium angustifolium
Vaccinium stamineum
Vallisneria americana
Verbena hastata
Veronica officinalis
Viburnum lentago
Viburnum recognitum
Viburnum cf. *lantanoides*
Viburnum acerifolium
Vinca minor
Viola cf. *sororia*
Vitis labrusca
Vitis riparia
Wisteria sinensis
Zizania aquatica
Zosterella dubia
Additional Species Seen at Stockport:
Acer saccharinum
Berberis thunbergii
Bidens tripartita
Callitriche sp.
Catalpa speciosa
Chaenorrhinum minus
Eragrostis capillaris
Eupatorium altissimum
Euphorbia nutans
Galium mollugo
Galium circaezans
Galium aparine
Helianthus tuberosus
Hosta ventricosa
Lobelia cardinalis
Lysimachia nummularia
Menispermum canadensis
Mentha arvensis
Nepeta cataria

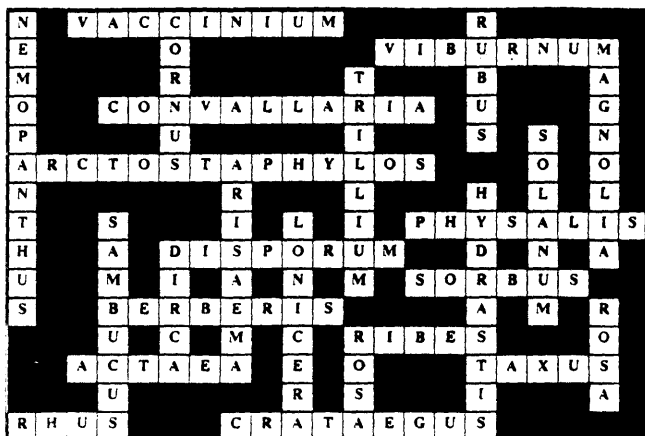
Parietaria pennsylvanica
Phalaris arundinacea
Phryma leptostachya
Poinsettia dentata
Rhamnus frangula
Rudbeckia laciniatum
Sium suave
Teucrium canadensis
Xanthium strumarium

Call for Research Proposals -

The Council of the New York Flora Association once again calls for research proposals for small grants, in its effort to foster field botany in New York State. We will be accepting proposals for floristic studies and research on specific taxonomic problems that pertain to New York vascular plants. Proposals should be less than two pages long and include: a statement of problem, methods to be used, a schedule, budget, statement of goals, and expected products of the research. Grants will be in the amounts of \$100 to \$500, but proposals of \$250 or less will be more likely to receive funding, and projects that add to the knowledge of the flora of lesser known areas of the state will be given first consideration. Requirements: the researcher should be a member of the New York Flora Association and not a member of the NYFA Council. Award winners are expected to write a report for publication in the NYFA Newsletter and supply duplicates of all specimens collected during the project to the State Herbarium (NYS).

Send proposals to Steven Clemants, Brooklyn Botanic Garden, 1000 Washington Ave., Brooklyn, NY 11225 (718) 832-0994. The deadline is March 1, 1993.

Red Fruits Crossword Solution - Cliff Lamere



Fern Diversity Competition -

Find New York's Prime Fern Grotto and Win a Prize!
 At Frank Knight's suggestion (p. 1), NYFA now offers a challenge to those of you who know, or are learning the ferns of our state. Find the area (within a mile radius) that has the most fern species growing wild in the state, and NYFA will treat you to \$75 worth of New York State Museum publications of your choice, such as Ogden's *Guide to Northeastern Ferns* and many others on botany, entomology and natural history. You will also get the *Pteridophyte Checklist and Index to Synonymy for New York State* (Mitchell, unpubl.) to help figure out what all those old fern books are talking about when they use outdated names.

Rules:

- 1) Find an area in which you are allowed to take specimens, **with the permission of the land owner only, whether it is state, federal or private land.**
- 2) Collect specimens of only those species that are not listed by the Natural Heritage Program as Endangered or Threatened. If such species are found, notify the NYNHP or State Botanist's office and request a site visit. Photos will be accepted in such cases.
- 3) Collect one specimen of each fern species, being sure to include some of the base (rhizome) and spore-bearing fronds if possible. Press and heat-dry the specimens using a plant press if you have one. Number the collections 1 through 27 or more.
- 4) Make a map of the area you studied, and put dots on it to show where each collection was made. A xerox of a topographic map is best.
- 5) **Submit your well-wrapped dried fern collection to: Dr. Richard S. Mitchell, Biological Survey, 3132 C.E.C. Albany, NY 12230. Deadline: Dec. 1, 1993.**

Fellowships in Cryptogamic Botany --

Interested in mosses, liverworts, fungi, lichens or algae? "The Friends of the Farlow" is an international group of about 200 amateur and professional botanists who encourage and support the study of lower plant groups. To learn more about the organization and fellowships they offer for short-term study at the world-famous Farlow Herbarium and Library at Harvard University, contact:

Friends of the Farlow Fellowship
Farlow Reference Library & Herbarium
 Harvard University
 20 Divinity Ave.
 Cambridge, MA 02138

Dues - If you have not yet paid your NYFA dues, or are not sure, please check the front of your mailing envelope to determine the year through which you are paid up. 1993 dues were payable Oct. 1.