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of the New York State Museum Institute

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Richard S. Mitchell, Editor
New York State Museum

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ADDRESS ALL CORRESPONDENCE TO NYFA, 3140 CEC, ALBANY, NY 12230 - DUES \$10 PER YEAR

Portrait of a Rare Plant: *Aplectrum hyemale*, Puttyroot Orchid -

by Steve Young, NY Natural Heritage Program

Of the sixty or so orchid taxa in New York State, there are twenty rare species. One of the more interesting of these is the puttyroot orchid. Its common name derives from its corms' mucilaginous secretions, which were used to mend pottery by early pioneers. Its twin corms were also considered to have mystical and healing properties. The genus name is from the Greek *a*, "without" and *plektron*, "spur" referring to the absence of a spur. The species epithet, *hyemale*, means "winter," and refers to the winter leaf that characterizes this species and two other rare orchids in New York, *Calypso bulbosa* and *Tipularia discolor*.

In early autumn, a solitary, pleated, gray-green leaf about 3-5 cm long is produced from the leading corm and remains on the top of the leaf-litter throughout the winter. The best time to look for this orchid is in the fall or early spring when the leaves stand out against the brown litter. A dusting of snow will help contrast the leaves against the ground. In late May or early June a flower stalk is produced, and the leaf deteriorates. The stalk, which is about 25-50 cm tall, produces 6-10 dull yellow flowers tipped with brown. They do not open widely, and their coloring, except for the white lip, blends in with the surrounding forest vegetation.

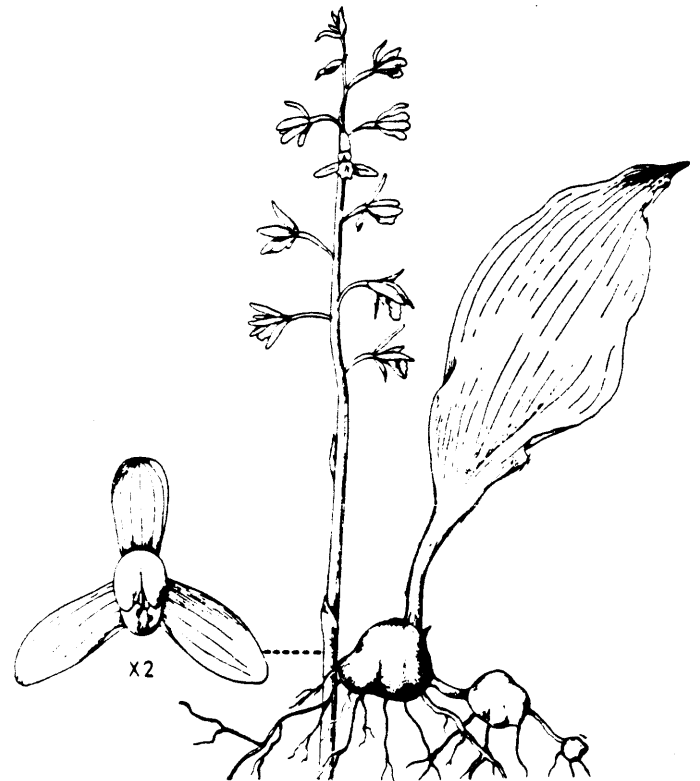
Puttyroot has been collected from twenty-one counties and reported from eight others. Its range extends throughout upstate New York, except for the Adirondacks, where it is rare. It occurs in open to dense, rich deciduous woods, usually associated with limestone. There are about 50 historical records in the state, mostly from the late 1800s and early 1900s, but presently we know of only one extant location, in Washington County. Logging, grazing and real estate development have probably eliminated most of the historical occurrences. However, since the plants are difficult to see most of the year, more occurrences probably await discovery. There are a couple of recent leads that need pursuing in Albany and Hamilton county so we may be able to report more

occurrences of this orchid by this time next year.

If you think there are no more plants to look for in late Autumn or early Spring, when everything looks brown, try your hand at finding puttyroot orchid. It could be very rewarding! For a list of its historical occurrences in your area, contact me at The New York Natural Heritage Program, 700 Troy-Schenectady Road, Latham, NY 12110 (518) 783-3941 or: e-mail syoung@tnc.org.

Reference:

Luer, Carlyle A. 1975. The Native Orchids of the United States and Canada Excluding Florida. The New York Botanical Garden. 361 pp.



Aplectrum hyemale L. Puttyroot Orchid

(ILLUSTRATION FROM GLEASON, 1952)

Bear Mountain - Harriman Flora: Project Completion Report -

by Richard Mitchell

It's hard for me to believe this phase of our Hudson Highlands study is officially over. The three field seasons were so pleasurable and adventure-filled that they seemed to fly past. My colleagues, Gordon Tucker, Spider Barbour and I have all developed a special affection for the western Highlands - especially since we've left our footprints all over them since 1992. The Palisades Interstate Parks and West Point Military Academy Reservation offer some of New York's more spectacular scenery, and a diversity of plant assemblages that I never expected to find in an area that some have reported as botanically poor.

Not so. Combine the mucky shores of the Hudson River Estuary with a vein of marble, some very steep topography, both acidic and calcium-rich cliffs, abundant lakes, peculiar hilltop bogs and rocky summits. Now add frequent fire and heavy human visitation by tourists from the south, and you have a kaleidoscope of habitats quite worthy of the flora that the area actually turns out to have.

The following is an excerpt from our final report to the Palisades Interstate Parks Commission:

Thirteen hundred sixty (1360) plant species, varieties and hybrids were collected, mapped, and documented as having occurred in Bear Mountain and Harriman State Parks during the 1993-1995 seasons.

Over 4,000 specimens were collected in Rockland and Orange Counties in conjunction with the project. This was accomplished, even though the first and third years were very severe in terms of weather. Drought and heat retarded the mid-summer bloom in those years; however, the unusual conditions gave the botany team the opportunity to walk many miles of wetland bottoms that would have been less accessible by foot or canoe during a "normal" year like 1994.

Plant Rarities in the Parks

All three seasons proved fruitful in terms of rare plant finds. After much of the general collecting had been accomplished in the first year, there was time in the following two seasons for extensive climbing, canoeing and further exploration of remote regions that might harbor rarities. Two plants that are not rarities statewide, but which were much sought-after in the park, were found in the second year: ginseng and native yew. The rare featherfoil (*Hottonia inflata*), previously known from West Point Military Reservation in the vicinity, was discovered in Harriman State Park in 1994. Also significant was the determination that Virginia pine (*Pinus virginiana*), collected by us on the Torne in 1992, and thought to be part of the West Point flora, was actually a few meters across the line in Harriman Park. This species is at the northern inland extreme of its range, where

it has also been found at Crow's Nest on the West Point Reservation. In terms of state rarities, the more significant finds of 1995 were sedges, several of which are listed Endangered with a rank of S1.

The flora was unexpectedly diverse and rich in rarities. Sixty (60) state-listed endangered, threatened and rare plant species were found in the parks during this three year study. Long known for their supposed botanical "sterility," the western Hudson Highlands have proved quite interesting when explored and collected thoroughly. Iona Island, its surrounding marshes and the lower slopes of Dunderberg Mountain, which were previously known for some rarities, proved particularly rich in new discoveries. A number of rare species also turned up on the dry ridges and in wetlands. Our finding of several species occurring in greater abundance than was previously known in the state also led to these being dropped from protected status by the New York Natural Heritage program. Examples are *Pilea fontana* and *Aster racemosus*.

New State Records

A native species new to the New York flora was added from Harriman State Park in 1993. The large floating bladderwort (*Utricularia inflata* Walt.) was discovered independently by three different parties, but at the same location. Mitchell and Focht, Barbour, and Maenza-Gmelch all collected specimens of this unusual, southern, insectivorous, aquatic plant in May of 1993. This species has recently been found twice in Massachusetts, indicating that it may be migrating northward due to climatic changes. A journal article was published in the *Bulletin of the Torrey Botanical Club* reporting our discovery (Mitchell, Maenza-Gmelch & Barbour, 1994).

State records of two native hybrids involving three species of *Verbena* were also found by Mitchell in Bear Mountain State Park (see list).

Eight exotic (non-native) species were also added to the New York State Flora:

- 1) *Arundinaria gigantea* ssp. *tecta*, a bamboo, was found by Tucker.
- 2) *Dicentra spectabilis*, a garden bleeding-heart, was found by Mitchell
- 3) *Erysimum asperum*, a western prairie-rocket, was found by Mitchell.
- 4) *Galanthus elwesii*, a garden snowdrop, was added by Tucker.
- 5) *Lactuca saligna*, a European wild lettuce, was found by Mitchell.
- 6) *Lonicera fragrantissima*, a new garden escape, was found by Tucker.
- 7) *Myosotis stricta*, a European forget-me-not, was found by Barbour.
- 8) *Narcissus jonquilla*, a garden escape, was found by Tucker & Barbour.

**State & Federally Listed Rarities (1993-1995)
Bear Mountain & Harriman Parks**

The following 60 species were listed by the New York Natural Heritage Program as Endangered, Threatened or Rare at the time they were collected in Bear Mountain and Harriman State Parks.

1. *Aristolochia serpentaria* L. VIRGINIA SNAKEROOT, SERPENTARY

Rarity Status: State Rank: E TNC Rank: G5 S1
Extremely rare in New York State, where it had not been collected in 99 years. On limestone ridges and in mucky soil and at the upper edges of talus slopes and on ledges; two populations are now known from Harriman State Park and vicinity.

2. *Asclepias purpurascens* L. PURPLE MILKWEED

Rarity Status: State Rank: T TNC Rank: G4G5 S2 (Rarity status discontinued, 1995)

Open fields and power line margins in previously disturbed soils; only a few plants found at two sites.

3. *Aster pilosus* Willd. HEATH ASTER

var. *pringlei* (A. Gray) Blake

[*A. pringlei* (A. Gray) Britt.]

Rarity Status: State Rank: E TNC Rank: G4G5 S1

4. *Aster racemosus* Ell. SMALL WHITE ASTER

(*A. vimineus* of NY reports, not Lam.)

Rarity Status: State Rank: R TNC Rank: G5S2 (Rarity status discontinued, 1995)

Listed rare for the State, but relatively frequent in fields in both of the parks and West Point; its state rarity status has been reviewed and discontinued, partially as a result of the current study.

5. *Aster schreberi* Nees LARGE-LEAF ASTER, SCHREBER'S ASTER

Rarity Status: State Rank: T TNC Rank: G5 S2
Woodland borders in sun or partial shade, especially limy places.

6. *Aster spectabilis* Ait. SHOWY ASTER

Rarity Status: State Rank: R TNC Rank: G5 S3

It is unusual to find this species inland at the northern edge of its range; often in sandy pine forests further south; ridge crest of the Ramapo Mountains, along the southeastern border of Harriman State Park.

7. *Bidens laevis* (L.) BSP. BUR-MARIGOLD, BEGGARTICKS

Rarity Status: State Rank: T TNC Rank: G5 S2

8. *Callitriche terrestris* Raf. STARWORT

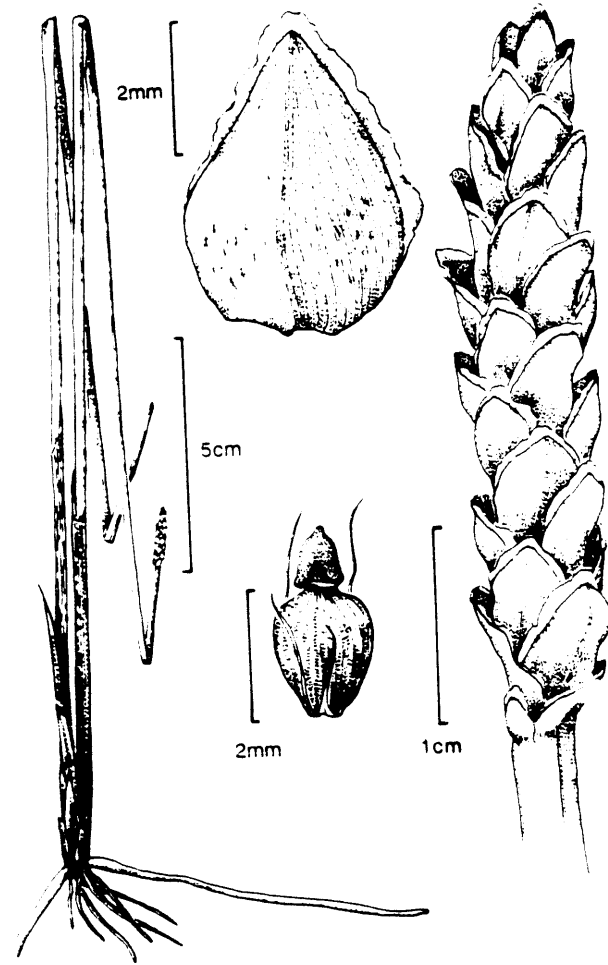
(*C. austinii* Engelm.; *C. deflexa* A. Br.)

Rarity Status: State Rank: E TNC Rank: G5 S1
Very rare, on mud of estuarine shore (Iona Marsh)

9. *Cardamine longii* Fern. LONG'S BITTERCRESS

Rarity Status: Federal Rank: C2 State Rank: T TNC Rank: G3G4Q S1

Three locations on tidal mud of the Hudson estuary and marsh borders (Iona Island & adjacent marshes).



Eleocharis quadrangulatus (Michx.) R. & S., a large Coastal Plain sedge with angled stems, is rare throughout its range. It was found by Mitchell and Focht in a pond in Harriman Park in 1995.

10. *Carex abscondita* Mackz. SEDGE

Rarity Status: State Rank: E TNC Rank: G5 S1

11. *Carex argyrantha* Tuckerm. SEDGE

Rarity Status: State Rank: T TNC Rank: G5 S2

12. *Carex bicknellii* Britt. ex Britt. & Brown SEDGE

Rarity Status: State Rank: T TNC Rank: G5 S2

13. *Carex bushii* Mackz. SEDGE

Rarity Status: State Rank: R TNC Rank: G4 S2

14. *Carex cumulata* (Bailey) Mackz. SEDGE

Rarity Status: State Rank: R TNC Rank: G3G4 S2

15. *Carex emmonsii* Dewey ex Torr. SEDGE

Rarity Status: State Rank: R TNC Rank: G5 S1

16. *Carex gravida* Bailey SEDGE

Rarity Status: State Rank: E TNC Rank: G5 S1

17. *Carex haydenii* Dewey SEDGE

Rarity Status: State Rank: E TNC Rank: G5 S1

18. *Carex lupuliformis* Sartw. ex Dewey SEDGE

Rarity Status: State Rank: R TNC Rank: G3G4 S2

19. *Carex retroflexa* Muhl. ex Willd. SEDGE

Rarity Status: State Rank: E TNC Rank: G5 S1

20. *Carex seorsa* Howe ex Gord. & Howe SEDGE

Rarity Status: State Rank: T TNC Rank: G4 S2

21. *Carex straminea* Willd. ex Schkuhr SEDGE

Rarity Status: State Rank: E TNC Rank: G5 S1

22. *Chenopodium standleyanum* Aellen GOOSEFOOT
Rarity Status: State Rank: R TNC Rank: G5 S3
(Rarity status discontinued, 1995)
A native plant of uncertain status that occurs in open, somewhat weedy habitats, but remains very rare in the state overall.
23. *Corydalis flavula* (Raf. ex Desv.) DC. YELLOW HARLEQUIN, PALE CORYDALIS
Rarity Status: State Rank: T TNC Rank: G5 S2
Rare, but sometimes locally abundant on dry, sunny ledges and ridge-tops after burns.
24. *Crassula aquatica* (L.) Schoenl. PIGMYWEED (*Tillaea aquatica* L.)
Rarity Status: State Rank: E TNC Rank: G5 S1
Tidal mud flats on the Hudson Estuary; very rare.
25. *Cunila origanoides* (L.) Britt. DITTANY
Rarity Status: State Rank: R TNC Rank: G5 S3
Locally abundant on lime-influenced hillsides at several locations in the parks and West Point.
26. *Cuscuta pentagona* Engelm. FIELD-DODDER
Rarity Status: State Rank: R TNC Rank: G5 S2S3
27. *Cyperus erythrorhizos* Muhl. CYPERUS, FLAT SEDGE
Rarity Status: State Rank: R TNC Rank: G5 S1
Riverbanks: rare (Rockland Co.)
28. *Cyperus flavescens* L. CYPERUS, FLAT SEDGE
Rarity Status: State Rank: E TNC Rank: G5 S1
Hudson Estuary: mucky shores; new Orange County record at its northern inland limits.
29. *Cyperus houghtonii* Torr. CYPERUS, FLAT SEDGE
Rarity Status: State Rank: R TNC Rank: G3G4 S3
30. *Cyperus odoratus* L. CYPERUS, FLAT SEDGE
Rarity Status: State Rank: R TNC Rank: G5 S2S3
31. *Desmodium glabellum* (Michx.) DC. TALL TICK-CLOVER, TALL TICK-TREFOIL
Rarity Status: State Rank: T TNC Rank: G5 S1
32. *Digitaria filiformis* (L.) Koeler SLENDER CRABGRASS
Rarity Status: State Rank: T TNC Rank: G5 S2
Found on dry ridge tops at three locations, in both Bear Mountain and Harriman parks.
33. *Elatine americana* (Pursh) Arn. AMERICAN WATERWORT, WATER PURSLANE
Rarity Status: State Rank: E TNC Rank: G4 S1
Rare aquatic, found in lakes and ponds in northeastern North America; found at a single location in Harriman State Park.
34. *Eleocharis halophila* (Fern. & Brack.) Fern. & Brack. SPIKERUSH
Rarity Status: State Rank: T TNC Rank: G4 S1S2
Brackish shore of the Hudson River; a rarity, often more coastal in distribution in northeastern North America.
35. *Eleocharis quadrangulata* (Michx.) R. & S. ANGLED SPIKERUSH
Rarity Status: State Rank: E TNC Rank: G4 S1
A southeastern Coastal Plain species that is rare throughout much of its range, especially in New York near its northern limits.
36. *Geranium carolinianum* L. CRANESBILL, WILD GERANIUM
var. *sphaerospermum* (Fern.) Breit.
(*G. sphaerospermum* Fern.)
Rarity Status: State Rank: E TNC Rank: G5T4 S1
Dry ridge tops and summits in Harriman State Park; known from two locations; a southern species at the northern limits of its range.
37. *Geum virginianum* L. ROUGH AVENS, HERB-BENNET
Rarity Status: State Rank: R TNC Rank: G5 S1S3
38. *Hottonia inflata* Ell. FEATHERFOIL, WATER-VIOLET
Rarity Status: State Rank: T TNC Rank: G3G4 S1
Very rare: a bizarre floating aquatic plant now known from two sites on the West Point Reservation and one in a flooded valley in Harriman State Park.
39. *Juncus debilis* A. Gray WEAK RUSH
Rarity Status: State Rank: T TNC Rank: G5 S1
40. *Juncus subcaudatus* (Engelm.) Cov. & S. F. Blake RUSH
Rarity Status: State Rank: E TNC Rank: G5 S1
41. *Lechea racemulosa* Lamarck PINWEED
Rarity Status: State Rank: R TNC Rank: G5 S2S3
42. *Lespedeza stuevii* Nutt. LESPEDEZA, BUSH-CLOVER
Rarity Status: State Rank: R TNC Rank: G4? S2S3
43. *Lespedeza violacea* (L.) Pers. LESPEDEZA, BUSH-CLOVER
Rarity Status: State Rank: R TNC Rank: G5 S1
44. *Mimulus alatus* Ait. WINGED MONKEYFLOWER
Rarity Status: State Rank: R TNC Rank: G5 S3
River bottoms; swampforest and borders in the Mahwah, Orange County.
45. *Physalis pubescens* L. GROUND-CHERRY, var. *integrifolia* (Dunal) Waterfall
Rarity Status: State Rank: E TNC Rank: G5T?Q S1
Grassy clearing, near woodland border, Orange County.
46. *Pilea fontana* (Lunell) Rydb. EMERALD-FRUITED CLEARWEED, COOLWORT, RICHWEED
Rarity Status: State Rank: R; TNC Rank: G5 S1
(Rarity status discontinued, 1994)
These plants, whose characteristics were long misunderstood, due to mistakes in the manuals, have turned out to be relatively abundant in areas scattered along the 150+ miles of estuary shoreline on the lower Hudson River; they occur in the St. Lawrence Seaway in New York as well.
47. *Pinus virginiana* Mill. VIRGINIA PINE, SCRUB PINE, JERSEY PINE
Rarity Status: State Rank: E TNC Rank: G5 S1
Very rare in New York State, occurring here near the northern inland limits of the species: found on

the Torne in 1992 (*Tucker #7955*), but thought to be on West Point property at the time; recently determined to be in Harriman State Park by a few meters (also at the Crow's Nest at West Point).

48. *Podostemum ceratophyllum* Michx. RIVERWEED, RIVER-MOSS, THREADFOOT
Rarity Status: State Rank: T TNC Rank: G5 S2
Submerged aquatic of flowing streams, with spotty distribution in the northeast; known from one location in the parks and one at West Point.
49. *Polygonum tenue* Michx. KNOTWEED
Rarity Status: State Rank: R TNC Rank: G5 S3
Dry, rocky places; Iona Island & elsewhere in the parks; more frequent from PA westward.
50. *Potamogeton pulcher* Tuckerm. PONDWEED
Rarity Status: State Rank: E TNC Rank: G5 S1
51. *Pycnanthemum muticum* (Michx.) Pers. MOUNTAIN-MINT
Rarity Status: State Rank: T TNC Rank: G5 S3
52. *Ranunculus micranthus* Nutt. ex Torr. & Gray
SMALL-FLOWERED CROWFOOT
Rarity Status: State Rank: R TNC Rank: G5? S2
Rocky, sandy clearings sedge-meadows and ledges after burns: rare.
53. *Sagittaria calycina* Engelm.
var. *spongiosa* Engelm. SPONGY ARROWHEAD
Rarity Status: State Rank: T TNC Rank: G5T4 S2
Iona Island, Hudson Estuary and inland drawdown pond in muck.
54. *Scirpus cylindricus* (Torr.) Britt. SALT MARSH BULRUSH
Rarity Status: State Rank: E TNC Rank: G5 S1
Iona Marsh, in tidal muck with cat-tails.
55. *Scutellaria integrifolia* L. HYSSOP-SKULLCAP
Rarity Status: State Rank: E TNC Rank: G5 S1
An extremely rare plant, currently known from two locations on stream and river bottoms in New York State, one in the Catskills, and one on the Mahwah River in Harriman State Park.
56. *Utricularia gibba* L. (reported under the synonym *U. biflora* Lam.) BLADDERWORT
Rarity Status: State Rank: E TNC Rank: G5 S1
A very rare aquatic.
57. *Utricularia geminiscapa* Benj. BLADDERWORT
Rarity Status: State Rank: R (Watch-list) NYNYP G4G5 S3
58. *Utricularia inflata* Walt. LARGE FLOATING BLADDERWORT
Rarity Status: State Rank: E TNC Rank: G5 S1
New State Record: This is the first and only recorded occurrence of this southern species in New York State; these plants range southward on the Coastal Plain, but may be migrating to the north.
59. *Vitis vulpina* L. WINTER GRAPE, FROST GRAPE, CHICKEN GRAPE
Rarity Status: State Rank: T TNC Rank: G5 S2

60. *Wolffia braziliensis* Wedd. WATERMEAL

(*W. papulifera* Thompson)

Rarity Status: State Rank: R TNC Rank: G5 S2

A tiny, aquatic watermeal of pond surfaces.

Species Possibly Extirpated from the Parks

1. *Aster ciliolatus* Lindl. ASTER

Rarity Status: State Rank: E TNC Rank: G5 S1

2. *Cheilanthes lanosa* (Michx.) D. Eaton WOOLLY LIP-FERN, HAIRY LIP-FERN

[*C. tomentosa* of reports, not Link; *C. vestita* (Spreng.) Sw.]

Rarity Status: Possibly Extirpated in NY State State Unprotected; NYNHP G5 SX

Careful searches on Iona Island, where this species once grew in small numbers, have revealed no populations. This species is considered extirpated in New York State by the New York Natural Heritage Program.



Viola nephrophila Greene, a rare, western violet, moves from historical rank to S1 endangered in NY, due to its discovery by both Mary Black (in Seneca County) and Pat Martin (in Genesee County).

Significant Botanical Discoveries of 1995 -

Compiled from information received at the New York Natural Heritage Program.

by Steve Young

Three SH species (not documented in over 15 years) were discovered in the field in 1995. That keeps our record going for finding at least one SH species in each of the last six years. Several S1 species were also found, of which the ones with global ranks of G4 or G3 are listed below (State Ranks given here are those assigned to the taxon at the beginning of the 1995 field season).

***Botrychium rugulosum* W. Wagner G3 S1**

Found near the village of Speculator (Hamilton County) by Gordon Tucker. Deerfoot Lodge area, in northern hardwood forest near a swamp; it is a species with a low global rank, and a county record as well.

***Carex arcta* Boott. G5 SH**

Dr. Andrew Nelson from Oswego College picked up this species in a survey of a pond in the Finger Lakes region. No specimen had been documented since 1957.

***Eleocharis quadrangulata* (Michx.) R. & S. G4 S1**

Dick Mitchell and Jack Focht found this rare Coastal Plain species growing on a moist, sandy promontory in one of the Twin Lakes of Harriman State Park (Orange County).

***Solidago simplex* Kunth var. *racemosa* (Greene)**

Ringius G5T4? SH

Michael Corey, during a Natural Heritage survey of the towns along Lake Champlain, found this northern goldenrod on an open rocky slope in the town of Crown Point, Essex County. It was reported to be in the northern part of the state but a specimen had never been collected before.

***Viola nephrophylla* Greene G5 SH**

Two separate finds were documented for this violet. One in Seneca County by Mary Black, National Park Service employee and the other by Pat Martin in Bergen Swamp. This species was reported for the Oswegatchie Plains in the early 70s and from Pine Lake in Delaware County in 1976 but the last specimen was collected in 1945 in Bergen Swamp.

Congratulations to the discoverers and good luck in future searches.

***Cuscuta megalocarpa* Rydb. Discovered in New York State -**

by Steve Young, NY Natural Heritage Program

In late October, 1995 I was surveying the ponds at Vischer Ferry park in southern Saratoga County for a rare sedge. On one of the shrubs on the edge of the wetland I noticed a *Cuscuta* that still had flowers and fruits at this late date. I collected a specimen and later identified it as *Cuscuta megalocarpa* Rydb. (synonyms: *C. curta* and *C. umbrosa*). The identification was later confirmed by Dr. Daniel Austin, a specialist in the family Convolvulaceae.

The range of *Cuscuta megalocarpa* extends from Manitoba and Minnesota south to Texas and New Mexico west to the rocky mountains. How it arrived in New York is a mystery, but this occurrence is probably a waif and not a sign that the species is moving into the state. The location of Vischer Ferry along the Erie Canal could have been a factor in its introduction.

The plants are very similar to *C. gronovii*, but with shorter styles and larger fruits and seeds. The species is treated in Gleason and Cronquist (1991), and a line-drawing appears in Gleason (1952).

References:

Gleason, Henry A. 1952. The New Britton and Brown Illustrated Flora of the Northeastern United States and Canada. Volume III: p. 93. The New York Botanical Garden, New York.

_____. & A. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. p. 411. The New York Botanical Garden.

**Neglected Members of our New York Flora:
Trees and Shrubs**

by Joseph M. McMullen

Terrestrial Environmental Specialists, Inc.

As a practicing botanist for over 20 years and a charter member of the New York Flora Association, I recently took the time to look back at the subjects covered in all the NYFA newsletters. Granted, we are an infant organization, but of the sixty or so articles published so far, only four treated woody species (I must admit that fifteen more articles dealt with both woody and herbaceous species, and I kept losing count because I found so many interesting articles to read again). That's not a very good track record, though, considering that 3000+ species of vascular plants occur in New York, and over 500 of these are trees and shrubs. Almost 20% of our flora (one in five species) is woody, but they are often treated as the "Rodney Dangerfields" of plants.

Many of us overlook this prominent part of our flora. We tend to concentrate on obscure species, showy floristic components, difficult taxonomic entities, or primitive vascular plants like ferns, while paying little attention to the woody plants, which I feel deserve far more study. For some reason, woody plants just don't get the attention from field botanists that herbaceous plants do. Perhaps it's because there is a prevailing notion that foresters deal with trees and botanists address all those **other** plants. This is a view that I'd like to help change.

Most of us are out in the field at different times of the year in separate parts of the state, identifying the plants of a given area for variety of reasons. We collect plants to press as herbarium specimens, but when is the last time you took a sample from a tree? Are they less important than the hundreds of herbaceous species we collected instead?

Perhaps you believe trees and shrubs are well-known and not worthy of further study. Are there no new nomenclatural, taxonomic, ecological, or distributional facts of note to be discovered among the "woodies?" If you think not, then you probably have never: struggled with the identification of a *Vaccinium*

or a *Rubus*, wondered if white, green, and black ashes believe in free love, tried to keep up with the nomenclatural changes in the genus *Cornus*, or tried to figure out whether *Viburnum recognitum* and *Viburnum dentatum* are really different (by the way, they are now treated as varieties of *V. dentatum*). Have you ever looked at the NYFA Atlas (NYFA, 1990) and wondered why the county records of our woody species are so sparse?

Last year I found an American beech (*Fagus grandifolia*) growing in the middle of a field with limbs hanging close to the ground. This is not entirely unusual, but it turned out to be in full flower at the time, and I could reach up and grasp a branch full of beech flowers just at anthesis. Upon studying them, I realized that I previously had little knowledge of the flowers of beech. I am sure that most of you can identify hundreds of plants just by the flower, but what of a tree like beech? Does it readily come to mind? You have probably looked at the flowers of hundreds of grasses and sedges under a hand lens, but it would be my guess that you've seen far fewer flowers of trees and shrubs. The beech specimen was beautiful and interesting, but it never made it to the plant press, let alone into Chuck Sheviak's hands at the State Herbarium. I rest my case.

When botanists are in the field, they tend to look toward the ground surface for something unusual. It seems less likely that a shrub will be considered endangered, threatened or rare, and, for a species growing above your head, a tree perhaps, to be of note would seem highly unlikely. If you are such a ground-peruser, you might be surprised to learn that there are about 40 trees and shrubs listed as endangered, threatened or rare under the Protected Native Plant Act of New York (6 NYCRR 193.3). Although some are diminutive in size, many are sizeable. The following is a list of protected woody species:

ENDANGERED

Amelanchier × *nantucketensis* Nantucket Juneberry
Betula nana (*B. glandulosa*) Tundra Dwarf Birch
Betula minor Dwarf White Birch
Corema conradii Broom Crowberry
Empetrum eamsii var. *atropurpureum* Red Crowberry
Hypericum densiflorum Bushy St. John's Wort
Juniperus horizontalis Prostrate Juniper
Loiseleuria procumbens Alpine Azalea
Pinus virginiana Virginia Pine
Potentilla paradoxa Bushy Cinquefoil
Pyxidantha barbulata Pixies
Quercus phellos Willow Oak
Vaccinium cespitosum Dwarf Blueberry

THREATENED

Cornus drummondii Rough-leaf Dogwood
Euonymus americanus American Strawberry-bush
Hypericum prolificum Shrubby St. John's wort
Populus heterophylla Swamp Cottonwood



Betula nana L. This widespread species of arctic-alpine and boreal habitats now includes plants we have previously called *B. glandulosa* Michx.

Rhododendron lapponicum Lapland Rosebay
Salix cordata Sand dune willow
Salix uva-ursi Bearberry willow
Viburnum nudum Possum-haw

RARE

Asimina triloba Pawpaw
Betula pumila Swamp Birch
Chamaecyparis thyoides Atlantic White Cedar
Diospyros virginiana Persimmon
Empetrum nigrum
 ssp. *hermaphroditicum* Black Crowberry
Gymnocladus dioica Kentucky Coffee Tree
Hydrangea arborescens Wild Hydrangea
Malus glaucescens American Crab
Physocarpus opulifolius
 var. *intermedius* Ninebark
Pinus banksiana Jack Pine
Prunus pumila var. *depressa* Sand-cherry
Prunus pumila var. *pumila* Sand-cherry
Ptelea trifoliata Wafer-ash
Quercus marilandica Blackjack Oak
Rhododendron canadense Rhodora
Rosa acicularis var. *sayi* Prickly Rose
Vaccinium boreale High-mountain Blueberry
Vaccinium uliginosum ssp. *pubescens* Bog Bilberry
Viburnum edule Squashberry

As stated earlier, the New York State flora comprises around 3500 species, of which 500+ species are woody. Petrides (1972) in his *Field Guide to the Trees and Shrub* included 646 species in 186 genera. Dwellley (1980), in her *Trees and Shrubs of New England*, addressed about 330 species. Braun (1989)

listed about 578 species in her *Woody Plants of Ohio*. Muenscher's (1950) *Key to Woody Plants* contains about 160 genera and approximately 500 species. For an idea of how many of these woody species may be considered trees, Brown's (1921) *Trees of New York State* contains 133 tree species that are either native or naturalized. A complete treatment of the forest trees in the U. S. can be found in *Silvics of North America* (Burns and Honkala, 1990).

I encourage you to take the time to rediscover the trees and shrubs in the upcoming 1996 season. Collect a few specimens. There are many populations of woody species in counties that have no voucher specimen in the State Museum, particularly those species near the edges of their ranges. You might make an important contribution to the knowledge of a group that is often ignored by floristic botanists.

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- Burns, R. M. and B. H. Honkala, tech. coord. 1990. *Silvics of North America*. Agriculture Handbook 654. U.S. Department of Agriculture, Forest Service, Washington, DC.
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- Muenscher, W. C. 1950. *Keys to Woody Plants*. Sixth Edition. Cornell University Press. Ithaca, New York.
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- Petrides, G. A. 1972. *A Field Guide to Trees and Shrubs*. Houghton Mifflin Co. Boston, Massachusetts.

Book Review -

Ferns for American Gardens by John T. Mickel. 1994. MacMillan Publ. Co., New York. 370 pages. \$60.00.

Whenever we (the Tuckers) visit our local library, our son Daniel heads for the dinosaur books, daughter Sarah heads for the puzzles, and I usually check out the New Books Section. A couple of weeks ago, I bumped into a real gem. John Mickel, Curator of Ferns at the New York Botanical Garden, has produced an opus on fern gardening that could also double as a field guide to ferns throughout North America.

Mickel begins by stating that "This book is the product of my personal experience with ferns, both in gardens and in the wild in various parts of the world." He includes chapters on fern structure; growing and gardening; propagating by divisions and spores; and

hardy ferns. The last section makes up the bulk of the book and is an alphabetical by genus and species compendium of plantable ferns that are more or less available, which are hardy in some part of the U.S.

For each species, the scientific name, common name, height, habit, availability (from nurseries), hardiness zones and ease of cultivation are noted. This is followed by a discussion including native range and habitat, garden uses, and sometimes notes on natural history. Most species are illustrated. The photographs are wonderful.

The color reproduction is exceptional and the range of shades of ferns will be an eye opener, literally, to anyone who thinks that ferns are all -- well, green. Every *Dryopteris* species and hybrid, it seems, has its own shade of green! Notable varieties are listed under some species and many are illustrated. This was a surprise to me. I have occasionally found the incised form of Christmas Fern, and once collected a serrate form of Interrupted Fern. It is obvious that we have nothing to compare with the many hundreds of variants of species like *Athyrium filix-foemina* and *Asplenium (Phyllitis) scolopendrium* that occur in Britain. There are scores of strange forms (undulate, crested, congested, ramosa) of both of these ferns.

There are 360 full color photographs of ferns. Many of the photographs are credited to the late Joseph Beitel. An abundance of line drawings explain such topics as growing ferns from spores and frond variations. I tallied 140 species that are hardy in zone 5 southward. This includes most of New York State. People in the New York City area and Long Island (Zone 6) could probably add about half again as many more species from the 440 ferns included in the book. A welcome addition would be a section on fern gardens that are open to the public. Mickel's earlier book, *The Home Gardeners Book of Ferns* (1979, Ridge Press) had a section including such places as Bartholomew's Cobble in western Massachusetts and the Cary Arboretum, Millbrook, N.Y. The list of nursery sources for ferns is helpful, but quite small, compared to pages of nurseries often found in the backs of many gardening books.

One wonders why ferns are not used more in gardens. I think a good reason is that few gardening books have much information on ferns. For example, Jean Hersey's *Wildflowers To Know And Grow* (1964), an early inspiration to me, had three pages on ferns (no pictures). Susan Roth's excellent *Complete Guide To Flower Gardening* (1995) has just four pages on ferns, and does include some nice photographs. My point is not that there have never been any books on growing ferns, but that introductory and general texts on gardening have usually had little information to help gardeners to get started with ferns.

If you are interested in gardening with wild flowers or native plants, you will want this book. Alternatively,

you would be pleased if your local library, like mine, acquired a copy.

This book provides a good way to learn more about ferns, even if you have no plans to grow them. Recently, grasses and other grass-like plants have become appreciated and widely planted. Maybe ferns will be the next wave. With the growing interest in naturalistic landscaping and using native plants, ferns seem likely to assume a more significant role in American gardens.

Review by Gordon C. Tucker, N. Y. State Museum.

Reminder -

New York Natural History Conference IV -

The conference will be held at the New York State Museum, April 24-27, 1996. Registration materials were mailed in mid-December, 1995. There will be a meeting of the NYFA Council (all of you are invited) on the evening of Wednesday, April 24 at 7:30 p.m. in Meeting Room B at the State Museum. Meet at the front doors of the main lobby of the museum for access, since we will have to let you in.

If you have questions about The New York Natural History Conference IV, please call Gordon Tucker at the Biological Survey office at 518-474-5812.

There will also be a meeting for a new organization in New York State for everyone interested in growing wildflowers and other native plants. It will be held at 3:30 p.m. in Meeting Room A of the Cultural Education Center. Anyone involved in growing native plants, on whatever scale, is welcome to attend. For more information, call Carol Southby (716-383-8168) or write to Andria Post (PO Box 922, Bridgehampton, NY 11932. Please enclose a self addressed stamped envelope). Membership information will be mailed out later in the spring.

Special Lecture- April 24, circa 8:30 p.m.

Following NYFA meeting: Meeting Room B, CEC.

In June, 1994, Chuck Sheviak conducted field work in the Russian Far East. He had been invited to be the North American Representative on an expedition conducted by the Komarov Botanical Institute of the Russian Academy of Sciences. The focus was to be *Cypripedium*, specifically problematical plants that had been variously interpreted as distinct species or natural hybrids. Chuck's interest stemmed from his hypothesis that hybridization of Asiatic species might have generated the founders of North America's *Cypripedium parviflorum* complex. Apart from the

opportunity to gain direct experience with populations of plants that had been known only from a few photographs and a cultivated plant or two, he was enthusiastic about the chance to see the vegetation of this part of the world first hand. This region had been closed to all foreigners until 1991, and travel to and from the Vladivostok area had been prohibited even to Soviet citizens. The botany of this *terra incognita* promised to be intriguing, duplicating in many respects the flora of the Northeastern U. S. This was the expedition's greatest appeal, especially given the difficulties of finding *Cypripedium* populations.

First NYFA Field Trip --

June 23-27, 1996

Our first field trip of 1996 will be held jointly with the Botanical Society of America, Torrey Botanical Club and Philadelphia Botanical Club.

NYFA members are invited to provide their own transportation and attend the day-trips at no charge. However, if you wish to participate in any of the other programs at the joint meetings of the societies, there are charges for lodging (at SUNY, Albany), meals and chartered bus transportation. For conference prices and room rates, contact:

Ed Miller at 518-371-8834 or

Bob Zaremba at 518-463-6133 (ext. 226)

Three day-trips are scheduled:

June 24 - Joralemon Park, etc. (fern-rich, calcareous woodlands)

June 25 - Hudson River Ice Meadows (scoured habitats with N. Y. rarities)

June 26 - The Albany Pine Bush, etc. (fossil lake dunes and pitch-pine barrens)

Apology for Missing December Newsletter:

I know -- I promised a fourth newsletter for 1995, but a lot of things happened (like a complete change in our mailing charges and procedures), and things got very confusing and hectic. When I figure out how to sort you guys out by zip code, merge your addresses, etc., I'll have us back on track. Sorry for the delay.

(Dick Mitchell, editor)

Dues! Don't forget to send your dues. Just check your envelope for the last year you paid, and send either 10 or 20 dollars (maximum) to renew for '96. We value your membership and participation.

THE INTREPIDIS

