



NYFA Newsletter

New York Flora Association - New York State Museum Institute

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MYCOLOGY AND THE NEW YORK STATE MUSEUM

Dr. John Haines, Mycologist, New York State Museum

In the beginning, there was Charles Horton Peck. His passionate interest after leaving Union College in Schenectady was the study of mosses that soon got the attention of New York State Regent and frustrated botanist, George W. Clinton. Clinton arranged a position for Peck at the New York Cabinet of Natural History, as the New York State Museum was then known, first as a volunteer in 1866, then as a part time, and by 1868, a full time curator of the plant collections. Peck soon shifted his focus from bryophytes to fungi and intended to collect and identify every fungus in New York State at a time when there were almost no publications on American fungi. Forty five years and thousands of recorded species later, he was still working on New York's fungi and the end was nowhere in sight (Haines, 1986).



Fig. 1. Charles Peck in his office at "Old Agriculture Hall" ca. 1894.

He was involved in the greatest period of descriptive mycology and was the first professional botanist in America to concentrate on fungi. He was, for most of his career, the best known mycologist in America and was consulted by hundreds of Americans on matters from edibility of

mushrooms to plant diseases. He was also the general botanist for the state and worked on higher plants as well. Peck was an enthusiastic woodsman and spent some time almost every year in the Adirondacks, eventually writing a "Flora of North Elba" (Peck 1899) and scaling many of the peaks including two, Skylight and Mount Wright, for the first time. Although Peck left about 36,000 specimens to the museum, his most important and lasting legacy is the more than 2700 new species of fungi he described in his very comprehensive annual "Report of the State Botanist." Mycologists

around the world borrow and examine Peck's type specimens (the heart of the species is the "type specimen." The specimen, mentioned in the original publication, was in the hands of the original author as the species description was

written for the first time.) to compare, reexamine with modern optical equipment, and even extract molecular data. Hundreds of scientific papers have been written since Peck's death using his types as a basis for

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NYFA 2003 Field Trips

See Page 7 for more details!

- **June 14** Joralemon Woods, Albany Co.
- **June 28** Spring Pond Bog, Franklin Co.
- **August 9** Altona Flat Rock and Gadway Sandstone Pavement Barrens, Clinton Co.
- **September 6** Hudson Highlands, Orange Co.



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new information and virtually any book on fungi, published anywhere, will contain at least a few species with the name "Peck" after them to signify that he was the original author. Aside from dried fungus specimens in every category from mushrooms to molds, he left hundreds of colored drawings of his finds, and thousands of letters asking every conceivable question about fungi. One of the prized works on American fungi is Peck's illustrated series on "Edible and Poisonous Fungi" in the New York State Museum Reports starting in 1895. It occasionally shows up in used bookshops. One of his correspondents was Mary Banning of Baltimore, Maryland who donated her manuscript of magnificent watercolor paintings to the Museum (Heist 1999). Peck's productive career came to an end in February of 1913 when he suffered a stroke just prior to his 80th birthday. In July of that year Homer House was hired as "Temporary State Botanist."

Homer House came to the Museum on July 1, 1913 to take up the duties of the disabled Dr. Peck. House, a native New Yorker, earned his Ph.D. degree from Columbia University and had been a professor of dendrology at the Biltmore Forestry School, in Asheville, North Carolina. Although he was a higher plant botanist, he had worked with fungi briefly in his career and picked up Peck's uncompleted works in progress. For help with some of the more difficult fungal work, he contacted Dr. John Dearness, a knowledgeable Canadian mycologist from Ottawa thus starting a 25-year relationship. House's interest was in the small leaf and stem spot diseases he encountered while collecting higher plants throughout the state. House and Dearness described 178 new species of fungi. For the Museum, this was a period of not only descriptive mycology, with a emphasis on species causing plant disease, but also for the cataloging of New York's natural flora. Homer House is best known for the ground breaking photographs in his "Wildflowers of New York" published by the museum in 1918. This contained some of the first color photographic reproductions of plants to be published and is a much sought after book today. Another important but less known work by



Fig. 2. Homer House in the field with his revolutionary autochrome camera ca. 1916.

House is his "Annotated List of the Ferns and Flowering Plants of New York State", Museum Bulletin No. 254, published in 1924 which at 759 pages apparently used up his publication budget for a time. Most copies of this very useful book are dog-eared and worn from use. When House retired in November 1948, he was replaced the following year by Eugene Ogden whose work on aquatic plants and airborne pollen is well known. Little was done with mycology until about 1963 when Rodney DeGroot, a Ph.D. from The School of Forestry at Syracuse, was hired to research tree diseases and work with Ogden on airborne fungus spores. Rod left after 4 years to join the USDA Forest Service.

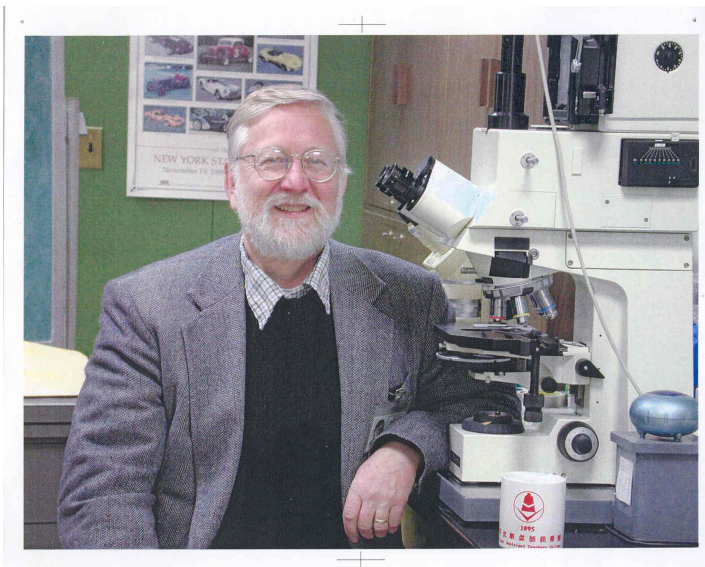


Fig. 3. John Haines in his office 2002.

In 1969, John Haines, a West Coast native, was still working on his Ph.D. at Oregon State University when he was hired as the new mycologist. One of the justifications for the position was to curate and preserve the museum's important mycological heritage. Haines, working with Ken Dean, Lorinda Leonardi, Dr. Partha Banerjee, botanical archivist David Rose, and numerous students, volunteers, and part-time employees have preserved, reorganized, and cataloged the collections and their associated illustrations and letter files. This was no longer the area of the broad naturalist, but of focused specialties. Haines worked on the taxonomy of minute cup fungi and finished his degree in 1972. Although New York was interesting for collecting fungi, the tropics were even more interesting and that was where the mycological action was taking place. So teamed with Dr. Kent Dumont of the New York Botanical Garden, Haines went on several National Science Foundation-funded South American trips where tens of thousands of small cup fungi were collected and returned to specialists for study. Even though numerous taxonomic papers were written on these collections, there are still undescribed species residing in the cabinets of the New York State Museum and New York Botanical Garden. At this same time in the early 1970s, Dr. Ogden was working on his Manual for Sampling Airborne Pollen (Ogden *et al.* 1974) and wanted a

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chapter on airborne fungus spores. These two topics, cup fungi and airborne spores, were to be Haines' focus for the next thirty years. Cup fungi of the Family Hyaloscyphaceae, which are barely visible furry white cups on dead plant debris seemed like a fairly academic occupation, but a recent discovery of an antibiotic known only in this group has shown the work to be of importance. And as for airborne mold spores, one need only read the newspaper to learn of their effects on our health and economy. Starting in 1991, Haines was involved in the study of mold spores at the Islip Compost facility in Long Island, the publication of that study changed public policy on the siting of composting facilities (Department of Health 1994). From that time on, Haines was increasingly drawn to the connection between mold and public health by analyzing an increasing number of mold samples from troubled buildings and in testing existing sample technologies and trying new ones. This era has been a transition from descriptive taxonomy to health applications and from the microscope to the molecular laboratory. The challenge, at present, is to retain the understanding of the work of Peck, House, Haines, and many others while we progress further into the use of molecular biology in the laboratory. Haines "retired" in April of this year but, like Ogden and others before him, will continue to write and teach.

As soon as New York can afford it, there will be a new mycologist at the museum to continue the museum tradition of Peck and others in one of the most important mycology positions in the country, and it will certainly be the beginning of another new era.

For more on Charles Peck and the New York State Fungus Collections see the museum website at <<http://www.nysm.nysed.gov/mycology/collections/>>

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Profile of a Rare Plant

Steve Young, Program Botanist, NY Natural Heritage Program

Viola rafinesquii Greene wild pansy, field pansy, Johnny-jump-up

At the annual New York rare plant status meeting, held by the New York Natural Heritage Program in December 2002, it was agreed that this plant was a rare enough to be listed by the program as an S1, fewer than 6 extant occurrences in the state (it's protected status cannot be listed as endangered until the state protected list is revised). After a review of specimens in New York herbaria nine locations were recorded, primarily from western New York. There was one specimen from Westchester County and Dutchess County and one from Manhattan, New York City. One specimen was labeled "West Point" but since no county was listed, and there is more than one West Point in New York, it cannot be certain that this was from the military academy in Orange County. There are also four other literature citations and unconfirmed specimens from western New York. There is only one recent collection, by Jim Battaglia, in 1989 from the town of Newstead east of Buffalo.

This stemmed violet has a large native range from the mid-western and southeastern United States east and north to New York. It is not found in New England and is listed as rare in Ontario and Saskatchewan, the only provinces in Canada where it occurs. It is found in prairies, open woodlands, fields, pastures, roadsides, and waste areas and prefers sandy soils. In New York it may be more common in limestone regions. The common names refer to its habitat and quick growth in the spring, *i.e.* it "jumps-up." It spreads by seed and appears in patches or colonies.

It can be separated from the other stemmed violets by its leaf-like and long-lobed stipules. The petals of the open flowers, which vary from deep blue to cream-colored, are much longer than the sepals and the middle lobe of the stipules is linear and not toothed. These characters separate it from two similar species, *Viola tricolor* and *Viola arvensis*, both exotic escapes. It is often listed under another scientific name, *Viola bicolor*.

There has not yet been a concerted effort to rediscover this



plant in its historical localities, especially western New York. Fields and natural openings in limestone areas should be searched, preferably in mid-May when it is in flower.

Viola rafinesquii

Photo by Daniel Reed
www.2bnthewild.com

Wild ginseng in New York State

Jason Denham, Senior Forester, NYS DEC, Division of Lands and Forests

Some would tell you that in the rich moist forests of New York State there's gold to be found, green gold that is, ginseng. Many people might walk right past a patch of American ginseng (or "sang" as some call it) without a second thought or even a glimmer of recognition. But to someone familiar with this perennial herb the sight of those particular five leaflets atop 1-2 foot-high stems (prongs) can equal both health and wealth. Ginseng is believed by some to be beneficial for preventing or healing ailments ranging from headache and fatigue to cancer. Wild roots can be worth up to \$300/pound or more depending on their shape and quality.

There is a long tradition of "sang-hunting" in the woods of New York. Prized as a medicinal herb, the roots of wild American ginseng (*Panax quinquefolius*) were first exported to Asia as early as 1718 when profits from the roots supplemented the fur trade. Asians had been using its close cousin *Panax ginseng* as a traditional medicine for thousands of years and found the new herb to be of equal or superior quality. Today much of the wild ginseng harvested in North America still goes to Asian markets. However, the rising domestic interest in medicinal herbs over the past twenty years, in conjunction with some validation by Western clinical trials, has increased the profile of the plant at home as well. Some roots are cultivated in beds, but most of the ginseng from New York is still of wild origin. NY wild ginseng is considered to be of the highest quality and, along with PA, has historically always brought the highest prices.



Bob Beyfuss, Cornell Cooperative Extension Agent in Greene County, and a harvested plant.



All the attention on ginseng the product has also caused concern about the well-being of ginseng the species. There is some evidence that current harvest levels may not be sustainable at some locations. The species is listed in Appendix Two of the Convention on International Trade in Endangered Species, a nearly worldwide treaty of which the United States is a signatory. As a result, the Federal and many State governments (including New York) now regulate the harvest and trade of American ginseng in order to protect its future as a wild plant and as a forest product. In New York ginseng is considered to be an apparently secure species but vulnerable to over-exploitation. The Department of Environmental Conservation has regulations aimed at striking the proper balance between protecting a piece of the native plant community and the wise use of a valuable natural resource. They also reinforce traditional conservation practices that many diggers have used for generations.

It is illegal to take ginseng from state lands or from the private property of others without their permission. Wild ginseng can only be collected between the dates of September 1 and November 30 of any year and the seeds of collected plants must be replanted within 50 feet of the location of the original plant. In addition, ginseng dealers must be permitted by the DEC Ginseng Program and comply with other requirements related to export, certification, and reporting. For more information contact the DEC Ginseng Program at (518) 402-9425 or visit web at <http://www.dec.state.ny.us/website/dlf/privland/forprot/ginseng/index.html>.

Are New York's Forests Healthy?

Jerry Carlson, Chief, Forest Health and Protection, NYS DEC, Division of Lands and Forests

Health to most of us refers to the way **people** feel. The World Health Organization describes health as a state of complete physical, mental and social well-being and not merely a disease-free condition or absence of infirmity. This doesn't seem to fit for forests. People that need definitions have played with many versions of this statement to try to fit it to forest, environment, or ecosystem pictures of health. This gets complicated and something like this often results: *Health is a condition of forest ecosystems that sustains their complexity while providing for human needs. A healthy forest is resilient to damage, characterized by biodiversity, it contains sustained habitat for timber, fish, and wildlife while meeting socioeconomic and management objectives.* Unfortunately these definitions don't really clarify or simplify the issue for all of us. The inclusion of "management objectives" and "human needs" often gets interpreted as someone's single-minded agenda. So what do we mean by disease-free and what do we understand the terms ecosystem and socioeconomic to mean? It is the interpretation of these factors that leads to a clearly subjective or personal opinion of what the forest or ecosystem health is. To me, people in general see what is unhealthy much more clearly than what is healthy. It's the damage we see that forces us to consider forest or ecosystem health from hindsight rather than foresight. At least in terms of what we can, should, or should not do in the forest.

A hindsight picture of health in individual trees is much easier to understand and there are many fewer arguments over the interpretations. This is especially true in urban environments and forest preserve areas where many people have more than a generation's worth of history in close communion with specific trees or tracts of forested lands. The rapid decline and death of an ancient chestnut, elm or maple in an urban park, street boulevard, or hereditary "backyard" brings the concept of forest health to the front of the minds of those affected. Similarly, the presence of health affecting agents, like introduced or invasive animals and plants, generate strong emotional responses from those who live in the infested neighborhoods. When these trees and forests are killed or removed by disease or "management" efforts, the people who knew them intimately are profoundly impacted and they have little doubt about what tree health means to them. They become the strong-voiced advocates of conservation and protection of the threatened or damaged trees and forests. These attitudes and initiatives promote the public will to maintain ecosystems, as we know them, and to develop policies and regulations, which aim to guarantee their continued existence.

The trouble is there remains the central irony of ecosystem conservation where we seek to preserve what must change. "Ecosystem preserve" is perhaps itself an oxymoron. The word ecosystem should probably be reclassified as a verb that describes how apparently unique, persistent, and stable features are constantly changing through interactions and adaptation. Managers of forested ecosystems are constantly confronted by the paradox of sustaining preserves subjected to constant change. Organisms we generally describe as health risks or pests are the agents of

these inevitable and inexorable changes in forests. We won't eliminate all forms of disturbance or change but we can talk of our ecosystem health in terms of maintaining processes within **acceptable ranges of change over acceptable time frames.** We can focus our intent and definitions on the rates of change that are "natural" or desirable-acceptable and those that are not. We can acknowledge the inevitability of change and aim for determining consensus or democratic goals that help us to accept the damage when it occurs. In essence we would then be planning for what we want over the years we want it for. We can decide about what to protect and see more clearly how health affects what we wanted and what we have.

So, what about New York's forests and do we have a context to describe them as healthy, not healthy, or something else? New York's forests **are** healthy but there are several resident threats that would increase the rate of change in mostly unacceptable ways. There are some unhealthy stands and there are some stands that are changing in acceptable ways. Obviously there are many diverse views of acceptable change throughout the State and many of them are unstated. Historically, the State's forests have "survived" many dramatic and far-reaching disturbances that often forced the landowners to abandon their intended goals. Introduced organisms like chestnut blight, Dutch elm disease, and white pine blister rust along with huge, uncontrolled wildfires altered New York's forests in ways that could never be recovered. Indeed, those ecosystems as they were known then no longer exist today! Prior to the blight's introduction, New York's chestnut forests would have been seen as sustainable and healthy ecosystems. The chestnut blight killed virtually all the chestnut trees. During the infestation, those forests were seen and described as clearly unhealthy. Today, many of those same forests are described as sustainable, healthy ecosystems even though chestnut is no longer a principal component.

This is the way we see exotic or invasive organisms in our forests today. The Asian longhorn beetle, tree of heaven, hemlock woolly adelgid, garlic mustard, sudden oak death, emerald ash borer, beech bark disease, ash yellows, dogwood anthracnose, and butternut canker are a few of the more obvious introduced organisms that are slowly but inexorably altering our forests in non-recoverable ways. We still have a chance to halt the progress of some of these agents but it seems we can expect a constant barrage of new threats as international trade and transport volumes continue to rise. If we remain vigilant and increase our ability to seek out and recognize unwanted aliens we will retain and enhance a healthy forest structure in our State. We seek the help of all New Yorkers to become more aware of the ecosystems they live in and to be able to recognize, in the earliest stages, the presence of an alien threat to our forest's health.

For more information about the most serious forest pests and diseases in New York State visit the web page (<http://www.dec.state.ny.us/website/dlf/privland/forprot/health/index.html#Highlights>)

New York People / New York Plants

An update of who is doing what across the state

Lee Kass, former Professor of Botany at Elmira College, was a Fulbright Scholar (1996) at the College of the Bahamas where she and her husband facilitated the establishment of the Bahamas National Herbarium (BNH). She received two NSF grants (1996-97, 1997-98) to conduct research at Cornell for writing an intellectual Biography of Barbara McClintock-Nobel Prize winning geneticist. She resigned her teaching position at Elmira in the summer of 2000 and is currently Visiting Professor at the L. H. Bailey Hortorium, Dept of Plant Biology, where she concentrates on the McClintock research and botanical field research -- mostly in the Bahamas.

Pam Laureto (laureto@attbi.com) is a Ph.D. student working in the lab of Dr. Todd Barkman at Western Michigan University. Her research involves the federally threatened plant *Solidago houghtonii* (Houghton's goldenrod). They will be using molecular genetic techniques to answer questions regarding the origin, taxonomic relationships, and population genetic structure of this rare species. Their preliminary evidence indicates that Houghton's goldenrod is of hybrid origin and that all global occurrences are of a single evolutionary origin. In addition, the preliminary results of population genetic structure indicate that there is both within and among population variation. To enable them to move forward with the population-level studies, this summer will be devoted to fieldwork. This would include populations from across Michigan, Ontario Canada, and the population in Genesee County New York.

Nancy Slack, retired Professor of Botany at Sage College in Troy (slacknan@aol.com), reports she was just in North Carolina at a lichen workshop and in California. She has been working on changes in epiphytic bryophytes and lichens on beeches with beech bark disease, mostly in Maine and New Hampshire, but she may find a good New York site where all the large beeches are not gone (anyone know of some?). She is still working on the never-cut and old growth forests in the southwest Adirondacks. She has also been helping the Vermont and Ohio Natural Heritage programs and associates with their rare and endangered bryophytes programs, particularly the Lake Champlain Islands project in Vermont. She hopes to do the same if a New York program gets going. She will be teaching Bryophyte Ecology at Eagle Hill, June 8th, and at Sage College a Flowering Plants course and a graduate course in Community Ecology--some retirement.

At the **New York Natural Heritage Program**, a cooperative program of the DEC and The Nature Conservancy that inventories rare species and ecological communities (www.nynhp.org), the following projects are in progress this field season:

Vegetation Sampling, Classification, and Mapping of Selected National Park Service Lands in New York

In this two-year project Heritage will determine and map the natural communities within selected lands administered by the National Park Service. The following National Park Service sites will be assessed through this project: Gateway National Recreation Area; Sagamore Hill National Historic Site; Vanderbilt Mansion, Eleanor Roosevelt and Franklin D. Roosevelt National Historic Sites; and Saratoga National Historical Park.

Developing a Comprehensive Protection Program for the Lisbon Swamp Wetland Complex, St. Lawrence County

The program will provide an assessment of the biodiversity significance, including rare plants and ecological communities, of the Lisbon Swamp wetland complex within the St. Lawrence valley in northern New York.

Tug Hill Aquatics

This is the second year of a two-year project to conduct an aquatic natural community assessment of streams within four watersheds in the Tug Hill region: East Branch Fish Creek, North Branch Salmon River (including Mad River), East Branch Salmon River, and Deer River. These surveys will focus on riverine communities and biota.

Lake Ontario Coastal Wetlands Biodiversity Inventory – Oswego County

This will be the last year of a two-year project on biological diversity research to identify rare species and significant ecological communities in Lake Ontario shoreline wetlands in Oswego County.

Salmon River Greenway Corridor Wetlands Biodiversity Inventory

Ecologists and botanists are determining and mapping the natural communities and rare species within selected wetlands sites in the one-mile wide Salmon River Greenway Corridor (which extends approximately 30 miles upstream from Lake Ontario).

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Laura Schwanoff from EEA consultants on Long Island sent along the website for their newsletter. It features some of the environmental projects taking place on Long Island and elsewhere in New York that may have an impact on our flora. EEA, Inc. is a professional environmental consulting firm established in 1979. The newsletter can be found at: <http://www.eeaconsultants.com/news/Spring2003email.htm>

Test Your Plant Knowledge!

Which are native to New York, which are introduced?
(answers on the next page)

- | | |
|---|--------------------|
| 1. <i>Agrimonia gryposepala</i> | Common Agrimony |
| 2. <i>Iris pseudacorus</i> | Yellow Iris |
| 3. <i>Trillium viride</i> | Wood Trillium |
| 4. <i>Sambucus racemosa ssp. pubens</i> | Red Elderberry |
| 5. <i>Tussilago farfara</i> | Coltsfoot |
| 6. <i>Salix fragilis</i> | Crack Willow |
| 7. <i>Vernonia gigantea</i> | Giant Ironweed |
| 8. <i>Lactuca biennis</i> | Wild Lettuce |
| 9. <i>Morus rubra</i> | Red Mulberry |
| 10. <i>Verbena urticifolia</i> | White Vervain |
| 11. <i>Phlox paniculata</i> | Perennial Phlox |
| 12. <i>Asclepias syriaca</i> | Common Milkweed |
| 13. <i>Daucus carota</i> | Queen Anne's Lace |
| 14. <i>Pastinaca sativa</i> | Wild Parsnip |
| 15. <i>Rhus glabra</i> | Smooth Sumac |
| 16. <i>Cercis canadensis</i> | Redbud |
| 17. <i>Cornus sericea</i> | Red-osier Dogwood |
| 18. <i>Lythrum alatum</i> | Winged Loosestrife |
| 19. <i>Amorpha fruticosa</i> | False Indigo Bush |
| 20. <i>Rubus phoenicolasius</i> | Wineberry |

NYFA 2003 Field Trip Schedule

June 14 Joralemon Woods, Albany Co.

(trip leaders: Susan Brent and Troy Weldy)

Trip co-sponsored with the Capital District Botany Club, we will visit a hot-spot for ferns and spring wildflowers.

June 28 Spring Pond Bog, Franklin Co.

(trip leader: Dan Spada)

We have the rare opportunity to explore one of New York's largest peatlands. This 500 acre patterned peatland is a globally rare community with various rare plants including *Carex wiegandii* and *Scheuchzeria palustris*.

August 9 Altona Flat Rock and Gadway Sandstone Pavement Barrens, Clinton Co.

(trip leader: Greg Edinger)

Visit the unique and globally rare sandstone pavement barrens. This unusual area was formed when glacial till was scoured off the flatrock some 12,000 years ago by a catastrophic flooding event from two nearby glacial lakes.

September 6 Hudson Highlands, Orange Co.

(trip leaders: Richard Mitchell and Spider Barbour)

After numerous NYFA articles detailing the wonders of the area, Dick and Spider will lead us to their favorite areas. Numerous rare species have been documented by Dick and Spider throughout the Hudson Highlands over the past 10 years.

For more information, visit our website or contact Troy Weldy (e-mail: weldy@nyflora.org or phone: 518-402-8952). Directions and additional scheduling information will be provided when you sign-up. All dates are subject to change.



Rogers Island Trip 2002



Iris pseudacorus

New York Flora Association Membership Form

Your membership expires at the end of year listed on your address. Please keep your dues up to date.

Annual Membership dues: _____ Renewal \$10 _____ New Member \$15

Additional donation to support NYFA's efforts \$ _____ **Total** \$ _____

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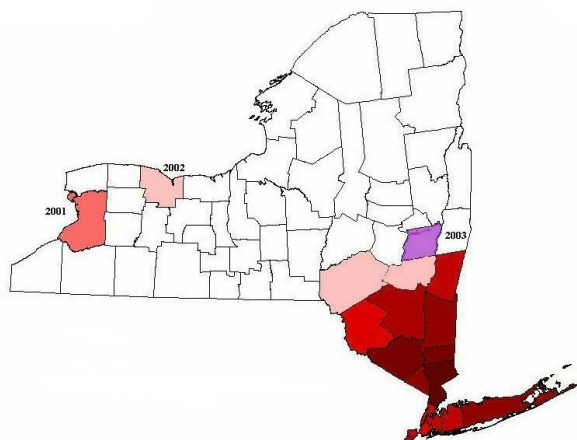
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Expansion of the hemlock woolly adelgid from 1987 through 2003

**Will hemlock
woolly adelgid
change our
forests? For more
on our forest
health see page
5.**

Quiz answers

Native Plants

- 1
- 4
- 7
- 8
- 9
- 10
- 12
- 15
- 17
- 18