Myosotis Messenger

Winter 1999

Focus on Education

Forget–Me–Not

Edmund Niles Huyck Preserve & Biological Research Station

Volume 23, Number 1

Education on the Huyck Preserve

Our educational mission is to provide the public with the knowledge to appreciate and understand how the natural world functions, using scientific field research as the focus, in engaging and innovative ways.

As you will see from the rest of this newsletter, educational activities are an essential part of the Huyck Preserve's mission. Why is that so?

The Huyck Preserve is a scientific organization, devoted to research on natural systems, and education goes hand-in-hand with research in any scientific enterprise. It would do no good for humanity if scientists conducted their research and then did not pass on their results. At the Preserve, what we learn about is how nature works, and so this is what we teach about. We communicate what we learn through scientific publications and conference presentations, through classroom teaching, Huyck Hikes, science symposia, Minds-On, Nature Study, and field trip visits by students from area schools.

The research that we do at the Huyck Preserve involves important topics which everyone should come to understand. Past research at the Preserve has facilitated the development of radar, helped illustrate the importance of biological diversity to the development of new pharmaceuticals, and tracked the spread of disease through forests and people. Current research at the Preserve is related to topics such as acid rain and global warming, topics which have worldwide economic and political implications which will effect everyone's way of life.

Science education is important because science gives us a way to think rationally about what is happening around us. The scientific method is a powerful tool to allow us to understand the world and to predict what may happen in the future. One of the most important aspects of the scientific method is that it does not prove things to be true, but it allows us to reject things that are false. Scientific research is the process where we form hypotheses and try to prove them wrong. Theories evolve from hypotheses when many people have tried to prove them wrong and have failed. Theories allow us to predict, and in a rapidly changing world, this is a very important tool.

> It would do no good for humanity if scientists conducted their research and did not pass on their results.

In order for our understanding of the natural world to advance, we need a steady supply of young people who will choose science as a career. So we need to attract young minds that are curious about nature. We need to nurture those minds so that they are willing to devote themselves to science. Thus our educational programs try to inspire youngsters to ask questions about nature and to give them the opportunity to experience the wonder and beauty of the natural world.

Finally, the Huyck Preserve is also a nature preserve with a special mission to protect the drinking water supply of the Hamlet of Rensselaerville. To continue this role the Preserve must exist in harmony with the surrounding community, so that our neighbors and the general public will respect the integrity of the Preserve. Thus we try to involve the community with our educational activities and other events, so that our neighbors and the children who will be our future neighbors may come to appreciate the importance of natural places and the value of the research which takes place at the Huyck Preserve.

The various articles in this Newsletter describe some of the ways in which we try to fulfill our educational mission. See you on the Preserve!

Richard L. Wyman,
Executive Director

Benefits of membership:

- A reduced rate on nature study programs during the summer
- Free swimming lessons
- Helping to insure that the trails to the falls and around Lake Myosotis are open and properly maintained
- Helping to support scientific research on the natural world: ecosystems, biodiversity, the carbon cycle and global warming, natural habitats
- Helping to support an array of educational programs on natural systems for students from grade school through adults
- Helping to support the interface between art and science
- Helping to provide volunteer opportunities for educational and scientific work, and to introduce young people to scientific research
- Helping to protect the Rensselaerville water supply, its watershed, and the hamlet of Rensselaerville.

Please join the Huyck Preserve and support its work!

Minds-On

In collaboration with the Rensselaerville Institute, the Huyck Preserve this year offered four different programs designed to give visiting students an opportunity to explore what it means to be a scientist working at a biological field station. The 1998 spring workshops had been offered previously but the fall workshops were offered for the first time this year. Tom Alworth, Ted Watt and Marilyn Wyman, Educational Coordinator, designed the new programs, which were run by them together with Carolyn Barker. Barbara Bolster-Barrett, and Winifred Werre.

During the spring, seventh and eighth graders from Fonda-Fultonville and South Colonie participated in the *Acid Rain and Salamanders* workshop and seventh graders from Voorheesville participated in *Leave it to Beavers* program. During the fall, two sessions of the *Tracking Change* workshop and one session of the *Scientific Method* workshop drew students from Fonda-Fultonville, Voorheesville and Canajoharie.

In *Tracking Change*, one of the new workshops offered this fall, the students measured the diameters of trees on a 2500 square meter plot of hardwood forest on the Preserve. The trees in the plot had previously been measured in 1990, so the students could compare their 1998 data with the 1990 data to determine which trees had died, and how much each of the living trees had grown. The students determined growth rate by species. They then related the growth rate to the position of the trees in the canopy. In this hand-on way they learned the importance of long-term studies in establishing and interpreting trends using biological data.

The Minds-On workshops are all-day workshops offered to secondary students in the region. The science based workshops, offered by the Preserve for several years, give students a great opportunity to practice science in a field research setting and provide a wonderful experience for everyone involved.

Carolyn, Tom, Ted, and Rick,

Thanks! We had a great day searching for Plethodon cinereus at the Huyck Preserve. You held the attention of my students and introduced them to science field work and gave me a "shot in the arm" of science passion with your enthusiasm! Thanks again.

Stephanie Copeland and the students from Lisha Kill

Greenville Students Study Animal Ecology

The Preserve is in its sixth year of collaboration with Greenville High School in offering Animal Ecology to college-bound juniors and seniors with an interest in science. This challenging class, taught by GCS science teacher Sandra Orris with support from Huyck Preserve staff, is unique in New York State because students completing the course receive three college credits from the University at Albany.

Using Anole lizards (common in the southeastern U.S.), students observe behavior, formulate questions, design an experiment, collect and analyze data, and write their findings up in the form of a scientific paper. Published scientific papers serve as the text for the course, and are read and discussed throughout the year. Students think through problems on their own and learn the scientific method by doing science themselves.

Cofounded by Sandra Orris and Tom Alworth in 1993, Animal Ecology averages 15 students a year. Students who have completed this course in the past have appreciated not only the scientific content of the course but also for the study skills they learned such as time budgeting, note taking, essay composition and the ability and confidence to solve problems on their own. Some of the students have followed up their experience in the course by participating as interns on the Preserve during the summer.

We are pleased to be collaborating in this very important offering again this year.

Volunteering as a Research Assistant at the Preserve

by Richard Clark

During the summer I worked as a volunteer laboratory assistant at the Huyck Preserve. While at the research station, I was afforded the opportunity to work with several professional ecologists. One such person was ornithologist Isabella Scheiber, who is studying factors that affect mate choice in house wrens. I assisted her in catching wrens using mist nets, banding, and drawing blood from the birds. I also worked with herpetologist Dr. Richard Wyman on his investigation of the relationships between red-backed salamanders, their prey (forest floor invertebrates), leaf fragmentation, and carbon dioxide production. These processes have implications toward the rate of carbon dioxide increase in the atmosphere and climate change. Finally, I assisted entomologist Dr. Vickie Backus, who is studying ant populations on the Preserve.

Aside from assisting field researchers, I worked with the research station staff under the supervision of Preserve Manager, Tom Alworth. Mr. Alworth directed me in condensing and analyzing weather data collected at the Preserve. I also assisted in monitoring amphibian movements using pit-fall traps and estimating both population size and diversity of flying invertebrates using malaise traps.

Overall, my time spent at the Huyck Preserve was a valuable learning experience and provided me with more confidence and knowledge working in the fields of physical and biological science. The instruction and guidance I received at the Preserve was invaluable in understanding field biology. I greatly appreciate the staff's help and the opportunity to volunteer at the Preserve.

Richard Clark, a senior at Greenville High School, volunteered at the Preserve during the summer of 1998 after having participated in the Animal Ecology class in the 1997-98 school year.

Grants, Internships and Volunteers

Research has been an integral part of the Preserve's activities since the establishment of the Biological Research Station at the Huyck Preserve sixty years ago. Over the years, many scientists have done work here on the wondrous and varied flora and fauna, adding to the cumulative knowledge of how natural systems work. 1998 was a typically busy year.

To help support this research, the Preserve welcomes interns at both the high school and college level, and awards Huyck Grants to graduate students and scientists for research projects conducted on the Preserve.

Huyck Grant recipients for 1998 and their objects of study were Gregory Bole from Stony Brook (fireflies), Grant Brown from Union College (fathead minnows), and Jennifer Frank (earthworms), Geoffrey Gardner (beech trees), Michael Messere (salamanders), Stacy Morris (invertebrates), George Robinson (beech trees), Isabella Scheiber (house wrens), and Nicole Wright (beech trees) from University at Albany.

High school students who joined the Preserve as volunteer research assistants in 1998 included Nicholas Bader and Richard Clark from Greenville, Kirsten Berben from Berne-Knox-Westerlo, Christine Dively from Academy of Holy Names (Albany) and Jackie Fullerton from Greenwich.

Undergraduate research assistants included Kyle Beucke from Cornell University, Scott Brennan from Union College, Suzanne Conlon (a Greenville graduate) from Penn State, Jaime Contois from University at Albany, Eileen Corbett and Tom Edmunds from SUNY Cobleskill, Joe Cowan from St. Lawrence University, and Janel Whitbeck from Empire State College.

Also joining the house wren research group was Alice Jacklet of the UAlbany Biology Department.

The Student Conservation Association runs an international volunteer program which this summer brought a Brazilian visitor, Maria Bonduki, to the Huyck Preserve for eight weeks. Maria worked primarily with Rick Wyman's salamander project, but also participated in Nature Study sessions at both levels. We hope to participate in the SCA program again next year.

If you would like to volunteer we could use your help and/or expertise in research, education, trails, library and collections, Visitor's Center....

Volunteering is a wonderful way to support the Preserve!

Huyck Hikes

If you would like to learn more about the work of the scientists who conduct research on the Preserve, you should look ahead to the Huyck Hikes. Conducted on Sunday afternoons in the summer, these hikes are informal gatherings that provide an opportunity to learn about the individual work of scientists, the site of their research, and the process of conducting that research. These gatherings give participants of all ages a wonderful way to explore nature and see science in action, and the scientists, in turn, appreciate the opportunity to communicate their work to the public.

Look for the schedule of Huyck Hikes in the Summer Newsletter.

Nature Study

During the past summer the Huyck Preserve presented two nature study courses for children of the local community. Barbara Bolster-Barrett taught the K-2 class and Winifred Werre the grade 3-6 class.

Imagin-Nature

Barbara Bolster-Barrett

One of the aims of our educational mission is to instill in others an appreciation that inspires people to create stories artworks, and the inventions that (for better or worse) shape our lives.

With that in mind, this year's K-2 Nature Study was called Imagin-Nature. Young artist's and scientists not only learned "nature facts", but how nature inspires art, stories, and music. During our Meadow session, for example, children listened to the Greek myth of Arachne as they learned about orb, funnel and sheet webs.

Before children learned of nest boxes, and the wren`s high twig nest, we read the fable *The King of the Birds*. This added to the experience of actually seeing a wren's "throne" and its miniscule eggs. (Thanks to Tom Alworth for sharing his love and expertise of wrens that day!)

On our two off-site sessions, children drew the Rensselaerville Falls and the "Fairy tree" at the Lincoln Pond Hemlock forest. Indeed, fairy lore, a component of our Woodland study, inspired some kids to add to their "Fairy houses" project for weeks afterward!

The Huyck Preserve if fortunate to have a variety of habitats to share with others. We are all lucky to live in a diverse community of creative individuals. Adding the Arts to some of our offerings is a "natural". This connection between the creative and the natural world can help us meet another of our educational objectives: to provide to the public an understanding of the natural world in "engaging and innovative ways".

The kids, parents, and I had an interesting and enjoyable summer season. I look forward to seeing all of you – and more fresh faces – next summer.

Rensselaerville's Young Naturalists

Winifred I. Werre

My grade 3-6 nature study students participated in nature activities that reinforced concepts such as the "predator-prey" relationship and energy transfers in the food chain and food web. They learned that pond, stream and forest habitats are each important because they provide food, shelter and water for plants and animals. The children had a lot of fun identifying and drawing pictures of aquatic insect larvae and nymphs and learning about their structural and behavioral adaptations. They learned that tree leaves give off oxygen, helping to purify the air we breathe. They acted as nature detectives, investigating the forest floor using soil sample tubes and looking under logs for decomposers The children learned about the interdependence of plants, animals and their environment and the fragility of natural habitats, and that people's attitudes and decisions affect those habitats in both positive and negative ways.

The overwhelming response we received from the participants made us believe that all of them had a pleasant and refreshing learning experience.

We are looking forward to another enthusiastic group of young naturalists next year.

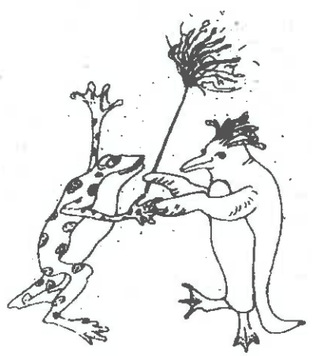
Dance Party Benefits the Preserve

The social event of the summer was the *Dance the Night Away* benefit on September 5 at Conkling Hall in Rensselaerville. Organized by Susan Kessler, Marge Rooney and the rest of the Huyck Preserve Board of Directors, the Dance Party drew 250 people to an evening of dancing and good eating.

The band was bicoastal: Giles McNamee's Boston band united with his brother Roger's band from San Francisco to present a "Grateful Dead" sound. Rensselaerville's famous Palmer House provided Barbecue and other fine refreshments.

Many thanks to the band: Giles and Roger McNamee, Chuck Gorman, Bill Kleinfeld, Chris Kikham, David Luke, Larry Marcus, and Bill Bennett, and to Bill Bensen, Susan Lenane and the staff of the Palmer House for helping make the evening such a success; to David Kraut for making available Conkling Hall, and to the Rensselaerville Institute for providing accommodations for the band.

Finally, thanks to all of you, members and friends, who came to the Party and thereby helped support the work of the Preserve as well as, we hope, having a wonderful time!



Huyck Wrens Lose Their Mentor

Tom Alworth, the Preserve's official Supervisor of Grounds and Maintenance and unofficial jack of all professions, departed the Preserve in October to become the Executive Director of the Hitchcock Center for the Environment in Amherst, MA.

During his seven years at the Preserve, in addition to his formal duties with grounds and maintenance, Tom was heavily involved in educational activities. For example, he and Sandra Orris developed the ongoing Animal Ecology course at Greenville High School (see *Greenville Students Study Animal Ecology*). He helped develop the science Minds-On programs taught at the Preserve for visiting school classes, and he worked with children at the Parsons Family and Child Center in Albany, providing nature study experiences for them both in Albany and at the Preserve. He also wrote on the naturalist John Burroughs and the value of using natural history writings as supplemental reading in high school biology courses, and contributed a section about birds on the Preserve to a book on birds of the region.

He carried on an active research program on the Preserve involving house wrens. His work resulted in three papers, one published in Condor, one accepted by the Journal of Ornithology, and one under submission. We wish Tom much success in his new position.

GLOBE Training

The Huyck Preserve, together with BOCES and the Teacher's Center, hosted a two-day GLOBE training program for Capital District teachers and science coordinators in late October 1998. GLOBE, Global Learning and Observations to Benefit the Environment, is a federally sponsored, international environmental science and education program which unites primary and secondary students, educators, and scientists from around the world in studying the global environment. The program, "Hydrology and Soils" was designed to prepare the educators to bring their students into the GLOBE network.

The GLOBE program enables participants to be a part of a worldwide network of 5000 schools in 60 countries which collects data on the environment for use by the international science community. GLOBE students learn to take accurate measurements of such variables as the amount and acidity of rain water, temperature, acidity and nitrate content of stream water, and the physical characteristics of soil. They submit their measurements to a central data processing facility via the Internet, and in return, received vivid images of their data and data from other GLOBE schools throughout the world, and collaborate with scientists and students in the GLOBE network using these data for education and research.

A current project of particular interest to GLOBE participants is a soil analysis of a possible meteor crater recently discovered in northern Bolivia. Schools that have been involved in the soils program of GLOBE can receive soil samples from the crater site for analysis. The students will thereby become part of a global research effort to identify and study sites of catastrophic collisions of the Earth with asteroids and comets. One such collision in the Yucatan Peninsula, 65 million years ago, may have caused the extinction of dinosaurs.

The two-day GLOBE training session at the Huyck Preserve's Eldridge Research Center was attended by over 35 educators.

The Preserve looks forward to further collaboration with the GLOBE program, both as a teacher training site and as a field site for classes involved with the GLOBE program.

More information on the GLOBE program can be found on its comprehensive web site,

info@globe.gov

Recreation Program at the Falls

by Marilyn Wyman

I don't often take the time to hike the Falls trail, even though it is so close by. So when the chance to guide the Rensselaerville Summer Recreation class up the falls was offered I took it delightedly. Mary Binder, the Recreation Leader, has experience in forestry and the woods in general, so was a wonderful asset. During the hike we described to the dozen or so youths (ages 4-17) the history of the Felt Mill and how it related to the changes in the landscape around the Falls. But mostly we simply enjoyed being in the woods, crossing the bridges and looking at what nature provided for our viewing pleasure. I was reminded how a walk in nature could provide a satisfying pause.

Elderhostel is Coming to the Huyck Preserve

The Huyck Preserve has been approved as a site for an Elderhostel program. Elderhostel is a non-profit organization dedicated to serve the educational needs of older adults. Their pursuit of active educational adventures will bring a group of "hostelers" to the Preserve to learn about the rich history of the Preserve and surrounding region. They will participate in research projects and generally learn about our environment in our beautiful natural setting. We are very excited about this new audience that will be visiting us.

Preserve Joins Project Feederwatch

Photograph by John McGuiness

Project Feederwatch is a winter survey of the birds that visit backyard feeders in North America, begun in 1987 at the Cornell Lab of Ornithology. The information each year helps ornithologists track changes in the abundance and distribution of bird species that use feeders in winter. The goals of the project are to

- gather long-term data on winter bird populations throughout North America
- detect significant population changes
- track the dynamic movements of nomadic and irruptive species during the winter months
- identify habitat features, including types of feeders and foods, which attract or enhance bird populations
- provide feedback to participants and the public regarding population trends.

Every two weeks over a 20-week season, feeders are observed for a predetermined two-day period as often as possible. The Huyck Preserve participated for the first time in the Feederwatch Program last winter, and plans to continue this winter.

If you have an interest in joining the Feederwatch network, call the Cornell Ornithology Lab at (607) 254-2440, or contact them online at

www.birds.cornell.edu

Preserve Welcomes John McGuiness

We are pleased to welcome John McGuiness as the newest member of the Huyck Preserve staff. He has been hired as Supervisor of Grounds and Maintenance and is already busy sprucing up our facilities and trails. Along with skills in carpentry, mechanics and computers, he is also knowledgeable in horticulture. John is also an avid hiker, birder and amateur photographer.

Natural Science Illustration – What's It All About

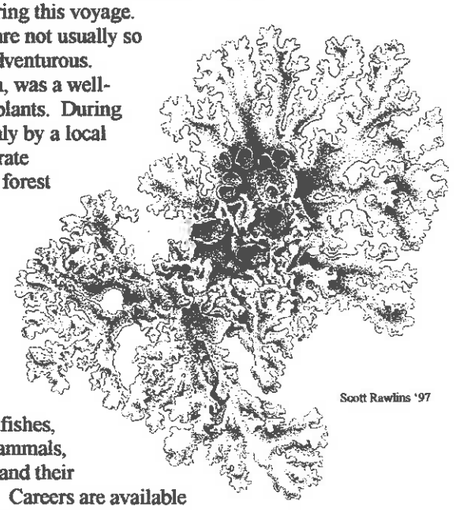
by Carlin Moyer
COM.EN.ARTResident Artist

COM(munity).EN(vironment). ARTis a natural history residence program at the Preserve that brings a half-dozen artists per year to the Huyck Preserve. The Preserve provides housing and studio space in exchange for a work of art produced during the visit. Carlin Moyer visited the Preserve in 1998 as part of the COM.EN.ARTprogram, and wrote this note about being a botanical artist.

Carrying your backpack of drawing tools down a leafy rainforest trail at dawn to draw orchids in the tree tops; creating illustrations of animals for an exhibit at the natural history division of a big city museum; helping a university research scientist illustrate a paper on gnat's genitalia. These and many more assignments are all tasks that natural history artists are trained to do.

The art of botanical illustration started in the 1200's, when woodcuts were used to print illustrations of medicinal herbs. The golden Age of botanical illustration began in the late 1700's when exotic plants from far flung places all over the world were collected and sent to England and Holland to be illustrated, and then propagated and sold. Botanical illustrators went on long ocean voyages with the explorers at that time and they made hundreds of beautiful and accurate drawings and paintings of plants that had never been seen in Europe before. When Captain Cook sailed around the world from 1768 until 1771 his ship carried Sidney Parkinson, an artist who produced 955 drawings, 675 sketches and 230 paintings in three years during the course of the voyage. Sadly, Parkinson died of dysentery on the voyage home. Many of his illustrations can be seen in a book about his work during this voyage.

The lives of illustrators are not usually so dangerous, but they can still be adventurous. Margaret Mee, an English woman, was a well-known 20th century illustrator of plants. During a 30-year period, accompanied only by a local Indian guide she went on 14 separate expeditions into the Amazon rain forest to illustrate rare plants, many of which no linger exist today. A book has been published that contains her colorful drawings and photographs of her travels.



Scott Rawlins '97

Botanical illustration is just one specialty in the field of natural science illustration. Other subjects include fossils, extinct vertebrates, invertebrates, fishes, amphibians and reptiles, birds, mammals, animals in their habitats, humans and their artifacts, and medical illustration. Careers are available with natural history museums, U.S. Department of the Interior, County or State parks and environmental offices, nature magazines, zoos and aquariums. Freelance artists work with publishers of science books, educational texts, natural history books, and children's books.

Requirements of a good science illustrator are patience and a willingness to observe and draw in exact detail, either freehand or using computer software. "The successful science illustrator must have a penchant for precision, great tolerance for and appreciation of detailed work and the patience to stare into a microscope for hours hunting for a miniscule hair." (G.N.S.I. Handbook)

Craig Furlong '98

To learn more about the field, write to the Guild of Natural Science Illustrators (G.N.S.I., PO Box 652, Ben Franklin Station, Washington, DC 20044).

Have fun!

Carlin Moyer is a free-lance natural science illustrator and a lecturer based in California. Her botanical illustrations of flora and fauna of California and the rain forests of Belize have appeared in exhibits in California, Washington and Virginia. She teaches at Santa Barbara City College and UC Santa Cruz, and is active with the Guild of Natural Science Illustrators.

Coming Events at the Edmund Niles Huyck Preserve

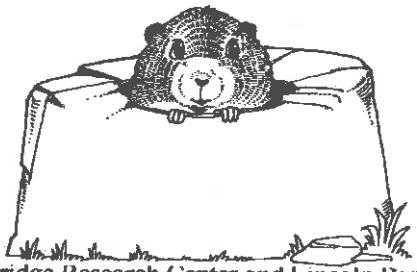
Held at the Eldridge Research Center

- Saturday, February 6: Our Annual Groundhog Day Celebration, 1-4 PM.
- Sunday, March 21: "Keeping the Earth: Religious and Scientific Perspectives on the Environment", 2-3:30 PM.
- Sunday, April 18: "Celebrate Diversity", with a guest speaker from NYSDEC's Endangered Species Unit, 2-3:30 PM.
- Sunday, May 23: "On the Wing": An all-day festival in celebration of birds featuring local bird illustrator Jim Coe, birdbinding and birdwalk led by regional birder Rich Guthrie, speakers, care and adjustments to binoculars and more. *Bring your binoculars.*
- Saturday, June 5: National Trails Day. Join us as we get the trails around the Falls and Lake Myosotis ready for summer, 10 AM.

The Public is Welcome

Everyone is invited to
The Edmund Niles Huyck Preserve's
Annual Fund Raiser

Groundhog Day Celebration



Eldridge Research Center and Lincoln Pond
Pond Hill Road, Rensselaerville, NY

Saturday, February 6, 1999
1:00-4:00 PM

Join us for
Winter Amusements by the Pond
Stories with Eileen Ruggieri
Music and singing
Food, Fun and a Cure for Cabin Fever

Donations at the Door Food for Sale

All proceeds benefit Preserve activities, research and education

Edmund Niles Huyck Preserve
And Biological Research Station
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