Summer 1995

FORGET-ME-NOT

Myosotis Messenger

Edmund Niles Huyck Preserve
& Biological Research Station
P.O. Box 189, Rensselaerville, NY 12147

Huyck Preserve Receives Grant

Richard L. Wyman

My research on salamanders began in 1970 when I observed small-mouthed salamanders (*Ambystoma texanum*) courting in woodland ponds in central Illinois. The next year I took a trip to the Shawnee National Forest in southern Illinois and discovered that the yellow spotted salamander made two distinct sounds - one associated with courtship and the other with respiration.

After graduation I moved to New York State to work for an environmental and engineering consulting firm. To keep my sanity I began a long-term study of a population of red-backed salamanders (*Plethodon cinereus*) on Clausland Mountain in South Nyack.

By 1980 I was teaching in the Biology Department at Hartwick College and had established four more study sites in Otego and Delaware Counties. It was at these sites that a student, Byron DelaVare and I discovered that soil acidity affected the density and distribution of at least ten species of amphibians.

In 1986 I came to the Huyck Preserve and established another ten study sites. The data from all these sites confirmed that soil acidification, accelerated by acid deposition, affects amphibian community structure in the northeast United States.

My wife, Marilyn, and I attended the First World Congress of Herpetology in Canterbury, U.K. in 1989. There we heard that many species of amphibians around the world were apparently in trouble. To date around 600 declines of populations and species have been reported to the Declining Amphibian Population Task Force (International Union for the Conservation of Nature). The following year I was asked to bring together information on amphibian populations in the northeast U.S. and present a talk at the annual meeting of the Society for the Study of Amphibians and Reptiles at Tulane University. I found that in the ten states comprising the northeast, 65% of the salamanders and 55% of toads and frogs were listed by one or more states as threatened, endangered, or species of special concern.

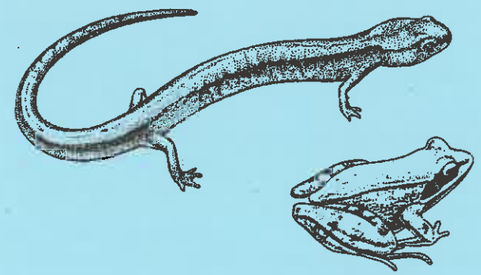
I submitted my first proposal seeking support to study factors influencing amphibians in forests while at Hartwick College in 1983. Since then, I have submitted about a dozen or so proposals to various funding agencies without success. For the last ten years, my work has been supported solely by the Huyck Preserve.

About four years ago, I was struck by the notion that while many scientists were working to document amphibian declines and to determine the causes, no one was looking into what these losses may mean. With the help of my "detritus-based team" (a group of scientists I brought together), I began to determine how salamanders affect detritus systems of the forests.

In 1992, I began an experiment that I have previously described in this newsletter. Briefly, I installed enclosures in a beach forest in which I manipulated salamander numbers. I then monitored invertebrate abundance and decomposition. At the end of five months, I found that salamanders clearly had a significant effect on many of the larger invertebrates in the enclosures. Significantly, decomposition of leaf litter was slowed when salamanders were present. Calculations revealed that an 11 to 17% reduction in decomposition translated in 250 to 500 kg carbon per hectare per year that was not released as CO_2 into the atmosphere. For New York State this equals 0.2 to 0.4 gigatons (10^9) of carbon not released into the atmosphere. If predators of the other detritus systems (spiders, centipedes, snakes, lizards, birds, shrews) have a similar effect then they could significantly modulate the carbon cycle. Of course this has consequences for the Greenhouse Effect and global warming. Also this work illustrates that biological diversity in the form of salamanders and other small predators have important functions amongst which is helping to keep the Earth habitable for humans.

On April 12th, after 25 years of work on salamanders, I received a call from the Soil Biology panel of the USDA telling me that my latest grant proposal was successful. Over the next three years the

Huyck Preserve will receive $200,000 to support additional experiments on the significance of amphibians to forest processes.



Preserve Takes Part in Scotia-Glenville Childrens Museum "Something To Do Day"

On Wednesday morning, April 19th, Rick and Marilyn Wyman, Tom Alworth, Sandra Alworth and Ken Barnett went to Scotia-Glenville High School to participate in the Childrens Museum's annual "Something To Do Day". The day began with Ken Barnett's live animal presentation where the children, ranging in age from 5 to 12, were introduced to an assortment of snakes, chameleons, lizards, toads, frogs, and salamanders. Tom Alworth then lead workshops where the children had the opportunity to identify different animals on exhibit and learn a little bit about each creature. Later in the day, Marilyn Wyman and Sandra Alworth treated the children to an original play featuring a salamander (Newt) and a frog (Rana) that meet on the side of the road on their annual migration to the swamp to breed. Most of the play centered on them trying to cross the road while cars rushed by. The play, written by Marilyn and Sandy, was designed to teach children about the differences between reptiles and amphibians and the roles they play in the environment. With amphibians and reptiles declining worldwide reflecting environmental upheavals such as pollution, increased ultraviolet irradiation, changes in the ozone layer, and even human eating habits and development, this was a timely as well as fun and fascinating day.

India

Marilyn Walters Wyman

I had the extraordinary opportunity of visiting India this past winter through a cultural vocational exchange program sponsored by Rotary International. For five weeks beginning January 1st we traveled the east central states of Orissa and Madhya Pradesh the former situated on the Bay of Bengal. My team consisted of four other professionals (CPA, editor, nurse, and media analyst) whose task it was to foster a better understanding and sense of friendship with the people we met in India during our stay. We visited steel towns, schools, Tiger Preserves and temples and experienced the exquisite culture, debated traditional roles of the United States and India and marveled at this country of contrasts. Please join me on **Friday, July 21st at 7:00 pm** in the **Eldridge Research Center** when I will share my unique adventure.

The 1995 Huyck Research Grants

This year our Scientific Advisory Committee awarded 11 grants to scientists seeking support for their work on the Preserve. These studies illustrate the diversity of work that continues to occur here. Only ten are described because one student turned down the grant to instead study in Central America for the summer.

David Gerhard from the NYS Museum won support to help the Preserve produce digitized maps of the Preserve. He will also map bedrock and surficial geology, aspect and vegetation. This map will help other workers to locate study sites with particular characteristics.

Seth Isenberg (University of Pennsylvania) will be looking at the reproductive behavior of house wrens. He thinks he will attempt to determine if more than two parents contribute to the genetic makeup of the siblings. It has recently been found in many species that were said to be monogamous, that more than one male may father the offspring in a single nest. This work has implications for our understanding of the evolution of reproductive behavior.

Dr. Keith Karoly (Reed College) returns to the Preserve to continue his studies of the evolution of flower parts in the tall meadow-rue. Some of the flowers produce male parts that apparently do not function in seed production. Why do they do this? Evolutionary theory suggests that the cost of producing these parts would select against them and that over evolutionary time the useless parts should be lost. Hence something else must be occurring.

Kathleen Moore (Atmospheric Sciences Research Center, SUNY-Albany) will be working with Rick Wyman to help determine how salamanders affect the production of CO_2 by the forest floor community. She will be using instrumentation to monitor the amount of CO_2 emitted from the salamander enclosures. This is an important additional piece of data that will refute or confirm leaf litter decomposition studies.

Kevin Omland (SUNY-Albany) requested support for his final year of studying the evolution of elaborate coloration in the mallard. He is looking at how female ducks choose the males they will mate with. It appears that females find certain males to be more "ducky" than others and in part this is based on the brightness of certain body parts.

Sonja Scheffer (SUNY-Stony Brook) will be surveying the Preserve for leaf mining flies. This is a group of flies whose young live in the tissue of leaves. These larvae create the intricate patterns of brownish tunnels you sometimes see in leaves. Very little is known about their taxonomy or ecology.

Isabella Scheiber (SUNY-Albany) received support for her continuing studies of the significance of brood amalgamation in mallards. Some species of birds amalgamate their broods so that a single female may care for the offspring of one or more other females. What is the significance of this behavior to the young? It is not known how this behavior could be selected for because it seems that the female's own young might be at a disadvantage when grouped with other young diluting parental care. Isabella's experiments are attempting to determine what are the consequences of brood amalgamation for young mallards.

Binbin Shao (SUNY-Albany) will continue her studies of the significance of golden shiners spawning in the nests of pumpkinseed sunfish. Golden shiners do not care for their offspring but frequently will spawn in the nests of other species. This is somewhat like the brood amalgamation just discussed, but it occurs between species. She is looking at the consequences of this behavior for the sunfish. Preliminary results suggest that sunfish with large numbers of golden shiner eggs do not do as well at producing living offspring as those without shiner eggs. Why then do the male sunfish allow golden shiners to spawn in their nests?

Paul Teese (SUNY-Stony Brook) will begin a study of how light conditions in the forest understory affect plant growth. He will use small chambers to measure CO_2 produced by leaves and determine how various light conditions affect leaf physiology. Little is known about how varying light conditions alter plant physiology in the forest understory.

Bettina Weber (Würzburg University, Germany) will return to the Preserve to study lichen flora. Lichen are unique forms that combine a fungi and an algae in a single individual. They are important indicator organisms because they are very sensitive to air pollution. Amongst the things that field stations do is the documentation of the species that occur on its land. This provides data that may be used in the future to help us understand changing environmental conditions.

Huyck Grant recipients will present their projects at our annual **Science Symposium** on **Saturday, July 22nd** beginning at **10:00 am** at the **Eldridge Research Center** on Lincoln Pond. All are welcome to attend. *Free.*

Nature Study

Nature Study classes will begin on Thursday, July 6th and run every Tuesday and Thursday through Tuesday, August 15th at the Jessie Huyck Nature Center on Lake Myosotis. Classes will again start at 10:00 am and end at noon. Children who will enter kindergarten in the Fall as well as those who have completed kindergarten, first and second grades will be meeting on Tuesdays. Thursday sessions will be for children who have completed third through sixth grades. There is no fee for Family Members ($40 level). The fee for non-members is $25. Call the Preserve to register (797-3440).

Swim Lessons

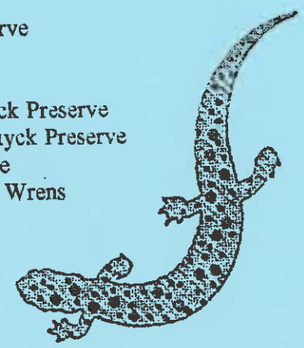
1995 Family Members ($40 level) can enroll their children in the swimming program at Lake Myosotis Beach for free. Barbara Bolster-Barrett is organizing the program this year with six weeks of lessons scheduled on Mondays, Wednesdays and Fridays from 1:00 pm to 3:00 pm beginning on Wednesday, July 5th. Please call the Preserve to register 797-3440.

drawing by Allyson Wyman

1995 SUMMER ACTIVITIES & HUYCK HIKE[1] SCHEDULE

If sunfish with large numbers of golden shiner eggs in their nest do not produce as many healthy living fish as those without shiner eggs, why does the male sunfish allow golden shiners to spawn in their nests? Do salamanders effect the amount of CO_2 produced in the forest? What can lichens teach us about air pollution? Huyck Hikes are opportunities for you to accompany researchers to their study sites and learn how scientists untangle these and other mysteries of nature. You'll discover answers to your questions and then you'll discover new questions. Won't you join us for these stimulating and entertaining hikes?

May		
28	Kevin Omland	Evolution of elaborate male plumage in ducks
June		
4	Binbin Shao	Golden shiners spawn in sunfish nests: symbiosis or parasitism
10		Visitor's Center[2] opens weekends
11	Paul Teese	Growth response of forest herbs to light
18	Susan Beatty	Climate change and the forest understory
24		**Annual Meeting**[3]
25	Keith Karoly	Why plants are sexy: stamens in tall meadow-rue
July		
2	Isabella Scheiber	Parental behavior in mallard ducks
5		Swimming lessons[4] begin
6		Children's Nature Study[5] begins
9	Seth Isenberg	Behavior in cavity-nesting birds
16	Kathleen Moore	Soil CO_2 flux at the Huyck Preserve
21	Marilyn Wyman	Passage to India[6]
22		**Science Symposium**[7]
30	Bettina Weber	Lichen Flora of the Huyck Preserve
August		
6	David Gerhard	Mapping the Edmund Niles Huyck Preserve
13	Sonja Scheffer	Leaf-mining flies of the E.N. Huyck Preserve
20	Richard Wyman	Salamanders and the carbon cycle
27	Tom Alworth	Nest building behavior in House Wrens



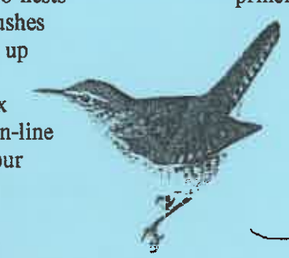
[1]Huyck hikes begin at 2:00 pm Sunday afternoons at the Eldridge Research Center on Lincoln Pond, Pond Hill Road. Free.
[2]Visitor Center hours are from noon to 4:00 pm on weekends.
[3]The Annual Membership Meeting is from 10:00 AM to 1:00 PM (members only).
[4]Swimming lessons are on Mondays, Wednesdays and Fridays at Lake Myosotis from 1:00 pm to 3:00 pm.
[5]Nature Study classes are held at the Jessie Huyck Center on Lake Myosotis from 10:00 am to noon. Tuesdays: K - 2nd grades, Thursdays: 3rd - 6th grades.
[6]Talk will begin at 7:00 pm Friday evening at in the Eldridge Research Center on Lincoln Pond, Pond Hill Road.
[7]The Annual Science Symposium is from 10:00 AM to 2:00 PM.

House Wren

Tom Alworth

Biologists are trained to avoid being anthropomorphic, that is resisting the urge to confer human qualities to their study animal. It is however difficult if not impossible to avoid doing so at least some of the time. We might describe an animal as angry, sad, happy or perhaps, indifferent. I have been studying house wrens (*Troglodytes aedon*) on the Huyck Preserve for the past three years; it is a bird with lots of "personality". Poetry is an effective way for me to vent my anthropomorphic urges....I hope you enjoy this very humanized description of the wren.

Wren of the house you sordid type
of stature small yet full of fight;
your chattered song of brave new height,
recluse, bandit, troglodyte.
Talkative friend of casual wear how bold
your daring brown eyes stare.
Inquisitive to a fault, whose relentless
verbal song assault; pursues the truth
from me each day while debating all
I have to say. You can't delay your
hurried pace while building two nests
just in case. Hiding now in bushes
thick with nervous twitch pick up
a stick. You puzzled soul in
such a fix, to fill your nest box
up with sticks and fly that wren-line
to your nest to prove to her your
sticks are best.



Visitor's Center

The Preserve has made some changes to our Visitor's Center. We now have an area where visitors can come and learn a little more about what we do on the Preserve. Many of our visiting researchers will be spending some time here, but there are still days available if you would like to volunteer. The Visitor's Center will be open weekends from noon to 4:00 pm. During this time we will be conducting a survey to determine Preserve usage and all trail traffic will be routed through the Center. If you would like to volunteer, please call the Preserve at 797-3440 to set up a time.

Teaching the Teachers

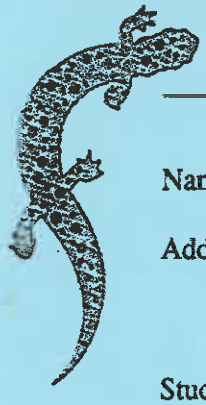
Last year the Massachusetts based Technical Education and Research Corporation (TERC) won an award from the Educational Directorate of the National Science Foundation to bring together professional ecologists and high school teachers. The purpose is to help high school teachers develop curricula in ecology through research with the professional ecologists. Rick Wyman helped TERC develop their program and suggested that they consider using the Huyck Preserve and the Rensselaerville Institute to conduct their project.

In July of 1994 about forty high school teachers and seven ecologists came to the Huyck Preserve to begin the process. Teams of teachers came from New York, Massachusetts, and Texas. During the first week teachers learned about ecological questions and how to answer them. Then they conducted their own research projects. Rick Wyman worked with the team of teachers from Greenville High School. Together they have developed a long term study plot on a small natural area owned by the school.

This year TERC will conduct the teacher training workshops twice so that they will be here for an entire month. It is hoped that long-term relationships between the ecologists and the teachers can be developed. We are pleased to be able to help bring ecology to high schools. It is important that teachers understand the principles of ecology so that they may communicate them to their students. It is also good to get students involved early on in the process of asking and answering questions about how natural systems work and what that may mean.

Elwood Siegel

The Preserve was saddened to hear of the passing of a friend and neighbor Woody Siegel. He was an interested and supportive member. He and his wife, Shirley, donated wildlife magazines for Nature Study, and attended annual meetings and Science Symposia. We will miss Woody's gentle smile and words of encouragement.



1995 MEMBERSHIP FORM

Name _____

Address _____

Membership Level (circle one)

Student $10 | Individual $30/Senior $20 | Family $40

Senior Family $30 | Contributing $100 | Sustaining $250

Patron $500 | Benefactor $1000

Please make your tax deductible contribution payable to the E.N. Huyck Preserve and mail to PO Box 189, Rensselaerville, NY 12147. Thank you.

E.N. Huyck Preserve
PO Box 189
Rensselaerville, NY 12147

BULK RATE
NON-PROFIT ORG.
U.S. POSTAGE
PAID
Rensselaerville, N.Y.
12147
Permit No. 5

Postal Patron
Rensselaerville, NY 12147