Winter 1994

FORGET-ME-NOT

Myosotis Messenger

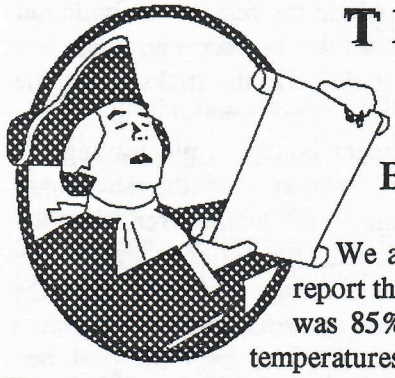
Edmund Niles Huyck Presrve
& Biological Research Station
P.O. Box 189, Rensselaerville, NY 12147

The Fourth Annual Groundhog Day Winter Carnival

This has been the winter of our discontent! For the Annual Winter Carnival on February 5th, however, winter was as good as it gets. Mother Nature graced us with mild, mostly sunny weather so everyone spent a great deal of time skiing, skating, and socializing outdoors. Thanks to **Jeff "Reb" Ouellette** and his snow thrower, we had a superb skating rink on Lincoln Pond which was packed with kids and parents all day long. This year's carnival was further enhanced from previous years because it was held at Lincoln Pond where we could take advantage of the warmth and comfort of Eldridge Research Center. Thanks to all who helped out and donated food. The fragrant and tasty tea, provided by **Jean's Greens**, of Rensselaerville, was a big hit! Special thanks to **Eileen Ruggieri** for another splendid tale. The weaving projects you provided for the kids were especially interesting and entertaining. And after that lovely reprieve from winter, we, like the groundhog, jumped back into our holes to wait for spring.

Katharine Huyck Elmore Fund for Environmental Education

The celebration of **Katharine Elmore's** 90th birthday in September was a splendid affair in honor of an extraordinary woman. Over 200 people gathered at the Rensselaerville Institute to wish her well. Contributions to the Katharine Huyck Elmore Fund at the Huyck Preserve totalled $10,090 and we thank all who contributed to this vital trust for environmental education. When the Fund reaches $250,000, earnings may be used to support Preserve activities. Our sincere gratitude to the **Rensselaerville Institute** for providing the wonderful food and for the use of the Weathervane for the event. Anyone wishing to contribute to this endowment may send a tax deductible contribution to the Preserve and note on the check "KHE Fund".



The Dam

Hear ye!
Hear ye!
Be It Known...

We are pleased - no, *thrilled* - to report that the dam on Lake Myosotis was 85% completed before sub-zero temperatures made it impossible to work. The dam has been shored up for winter and spring runoff when it will be finished. Is that a collective sigh of relief we hear? The dam has been elevated and the spillway widened and lowered. The lake level will be one foot lower.

We wish to express our appreciation to all who responded to our appeal for contributions to help offset the Preserve's committment of $25,000. To date, your gifts have provided $3,855 toward our expenses. **Thanks!** Tax deductible donations can be made to the Huyck Preserve and note "dam fund" on your check.

Student Perspective

Excerpt from a College Application Essay

"There are many experiences from my life that have prepared me for college. One of them is a college-level class that I am participating in presently. It is called Animal Ecology. This is by far the most challenging class that I have taken in my high school career. It has taught me to use superior studying skills and how to pace myself to accomplish large amounts of reading in a very short while. Not only has it helped me learn to read faster, but it also showed me how to concentrate on the main idea so that I can outline it better. Animal Ecology has also taught me to take better notes, both in class during lectures and from written materials. Because almost every exam is an essay exam, it has also improved my test taking abilities. The class has also helped me to be able to open my mind to new ideas."

Heidi Annalisa Bohne, Senior
Greenville High School

Tom Alworth's Activities

Research

For the past two years I have conducted research on the nesting behavior of the house wren (*Troglodytes aedon*). It is well known that male wrens, after arriving on their territory in the spring, begin filling available nest sites (nest boxes) with small sticks. Often males will fill a nest box to the opening leaving just enough room for the female to build her soft feather lined nest. Why males should invest so much energy in filling the nest boxes with sticks has been the subject of much speculation for some time. Does he provide an important foundation upon which the female can build her nest? Does the female choose a male based on how fast and how many boxes he fills with sticks? Do the sticks play some integral role in courtship? I have been removing all sticks from half of the boxes (treatment boxes) while leaving the other half untouched (control boxes). If the sticks are important for successful nesting in the house wren, then the boxes from which I removed the sticks should be unsuccessful. This was not the case. Not only were the treatment boxes as successful as controls, more young were actually fledged from the control boxes over the past two years. These data suggest that the sticks are not necessary for successful nesting in the house wren. So why *does* the male go to all of the trouble?

Perhaps the sticks are an important part of courtship. That is, the act of carrying the sticks to the box may help solidify the pair bond. If this is true, the sticks in the box may have already served their function and removing them would then be insifgnificant. I am now in the process of designing another experiment to look at this possibility.

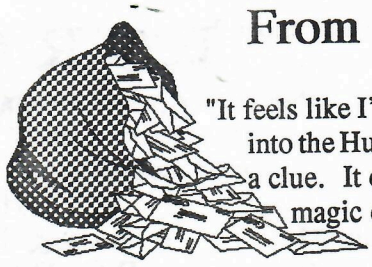
Teaching

I am teaching Animal Ecology at Greenville High School for the second year with science teacher, Sandra Orris. Accredited by SUNY-Albany, students successfully completing the course will receive three college credits in science. We discuss such topics as evolutionary biology, ecology, and animal behavior. The required reading list includes several scientific papers as well as the science section of the New York Times. Students will soon obtain Green Anole lizards (*Anolis carolinensis*) which will be used in behavioral experiments beginning in February. Learning how to ask a scientific question, design an experiment, collect and summarize data are all important skills in science and will be invaluable to students in their academic future. Students will write a scientific paper based on data obtained from their research.

We went to the Bronx Zoo in November and not only learned about captive management of animals, breeding of endangered species and animal behavior, but we also had lots of fun doing it!

Tom Alworth, Research Assistant

Fan Mail From Some Flounder...



"It feels like I've aged five years since I [illegible] into the Huyck Preserve last June, without a clue. It didn't take long to discover the magic of the Preserve and make it my own. I learned alot about science and myself last summer. When I look into my heart and search for what was truly special about the experience, I find that it was the people. Thank you for everything you've done for me, especially for making me feel welcome and at home. You are a wonderful group of people."

Chad Hershock, Researcher 1993
The Pennsylvania State University

Visitor's Center

The new Visitor's Center at the Mill House had a successful first season. It was the brainchild of Preserve Board member, **Camille Douglas**. Her committment to the project along with the dedicated volunteers who staffed the Center on weekends were the foundation of its success. Laurels to Cissy Douglas and volunteers: **Cindy Ouel[illegible]e, Beth Brand, Martin Brand, Janice Brand,** and G[illegible]y **Carter Steadman**. In addition to mugs, hats, and shirts, the Center carries an extensive line of birding books and items for children of all ages.

If you haven't yet renewed your membership for the 1994 season, please take a moment to return the enclosed form with your dues. Your support has never been more important nor appreciated.

Do Salamanders Affect Global Climate?

Richard Wyman, Executive Director

Many species of amphibians appear to be having difficulty maintaining viable populations globally. While much work is being conducted to determine the causes of decline, little work has been conducted to determine the significance of amphibian species in terrestrial habitats.

In the northeast U.S., there are 20 species of salamanders. The most abundant of species (in fact, the most abundant terrestrial vertebrate in the northeastern U.S.) is the red-backed salamander (*Plethodon cinereus*). This species is found throughout forests of the northeastern U.S. and southeastern Canada. At one research site in New Hampshire, *P. cinereus* was found to represent about 94% of biomass of all salamanders and twice the breeding bird biomass. Salamanders handle a significant portion of the sodium cycled annually through the forest. In terms of caloric content, *P. cinereus* exceeds the estimated caloric content values of all other predators combined.

Salamanders consume huge numbers of soil invertebrates. So we designed an experiment to determine whether or not salamander predation affected the species composition of soil and litter invertebrates. We also monitored decomposition to see if predation on litter invertebrates in turn affected decomposition rate. We constructed nine enclosures within which sixty mesh bags containing 3 grams of previously dried leaf litter were placed. All other material which had been removed during construction was carefully restored as we found it. After identifying, counting, and measuring a sampling of invertebrates from each enclosure, we introduced either zero, two, or six salamanders. The densities approximated those found naturally in our region.

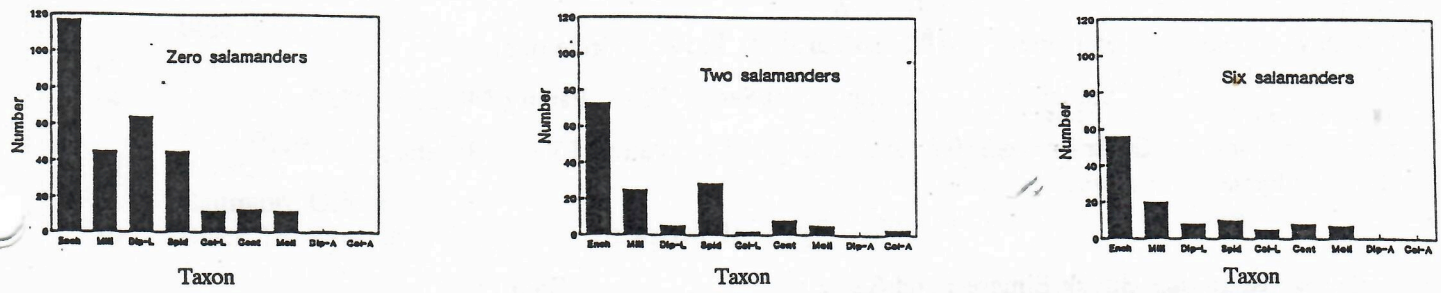
Throughout the three month experiments, sticky traps were placed in each enclosure for 48 hours on a biweekly schedule to sample invertebrates. After three months, the salamanders, remaining leaf litter, and 80 kg of humus were carefully examined by hand in the lab and remaining invertebrates were preserved and identified. Usually working in groups of three to five people, this task took **Elke, Mechthild, Cheryl, Carolyn, Marilyn, Rick, Tom, Jerrine, Allyson, and Kenneth,** over a week to complete. Eight of the mesh bags were placed in Burlese funnels with a 40 watt bulb and invertebrates extracted for 48 hours. Finally, the remaining mesh bags were dried to a constant weight and their contents weighed. The difference between the initial 3 grams and the final weight represents litter lost due to decomposition. This provides four types of data on the invertebrate community: biweekly sticky trap results, mesh bag extractions, hand-picked leaf litter results, and hand-picked humus results.

We have no first year data because the salamanders were quite clever and figured out how to escape. We modified the enclosures thus preventing largescale salamander exodus during the 1993 trial and were rewarded with solid preliminary data. Enclosures with salamanders contained significantly fewer enchytraeid worms, millipedes, diptera and hymenoptera larvae, and spiders than did the zero salamander enclosures. Also, no flying wasps or adult flies were recovered from the six salamander plots (Figure 1).

The mean rate of decomposition in zero salamander enclosures was 17% greater than in the two salamander and 11% greater than in the six salamander enclosures. This reduction in decomposition rate in the presence of salamanders may have resulted from the consumption of key litter fragmenters. Millipedes, worms, and insect larvae fragment litter through their foraging activity. This activity increases the surface area on leaf litter particles and increases the rate at which bacteria and fungi can colonize fragments. This in turn accelerates decomposition. Predation on fragmenters by salamanders thus reduces litter fragmentation and, consequently, the rate at which bacteria and fungi colonize litter and therefore decomposition rate. In the forests on the Preserve, between 2375 and 2800kg/hectare of carbon is contained in the leaf litter and available for decomposition. In the absence of salamanders in our mixed deciduous forest, most of this carbon would be converted to CO_2 and released to the atmosphere. Because salamanders reduced the rate of decomposition by 11% to 17%, they prevent or slow the release of between 261 and 476kg of carbon/ha from the forest floor. Since red-backed salamanders are distributed in high densities throughout the eastern and central U.S. and southern Canada, predation by them may influence atmospheric CO_2 dynamics. Should predators have similar effects in other ecosystem, then they may influence global CO_2 dynamics. In other words, the presence of upper level predators in terrestrial ecosystem may influence the rate of global warming.

The focus of this study evolved from past investigations of the detritus food web. Good research not only answers a question, but begs another. While we cannot draw conclusions from our initial data, this is quite possibly the first experimental demonstration of the effect of an amphibian on the function of a forested ecosystem. **Eureka!**

Figure 1.



Frequency distributions of the total abundance of macroinvertebrates hand-picked from the litter from enclosures containing zero, two or six salamanders. The distribution in the zero salamander treatment is significantly different from those in the two and six salamander treatment levels. (Abbreviations: ench=enchytraeid, mill=millipedes, dip-1=diptera larva, spid=spider, col-=coleoptera larva, cent=centipede, moll=mollusca, dip-a=diptera adult, col-a=coleoptera adult).

HUYCK PRESERVE MEMBERSHIP BENEFITS

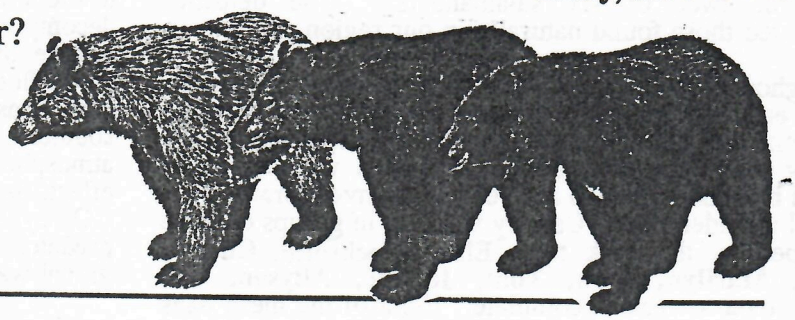
Keepers of Biodiversity

1. Feeling good because you're supporting environmental research.
2. Feeling good because you're supporting environmental education.
3. 10 miles of private hiking trails.
4. Fishing and boating on Lake Myosotis.
5. The beauty of Rensselaerville Falls, Lake Myosotis, & Lincoln Pond.
6. Access to our extensive library and species collection.
7. Huyck Hikes for families and individuals.
8. Children's nature programs.
9. Peace and Quiet.
10. Habitats for bear, beaver, bats, and birds (to name a few).
11. Discounts on merchandise, publications, and planned activities.
12. Attending the Annual Membership Meeting.
13. Priviledge of electing the Board of Directors.
14. Eligibility to become a member of the Board of Directors.
15. Receiving nifty newsletters.

Should you become a member?

Why, Soitenly!

Hairy, Moe & Furly



1994 Membership Form

Name _____

Address _____

Membership Level (circle one)

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

Contributing $100 Sustaining $250 Patron $500 Benefactor $1000

Special Appeal

Katharine Huyck Elmore Fund $_____ Dam Fund $_____

Please make your tax deductible contribution payable to the **E.N. Huyck Preserve** and mail to **P.O. Box 189, Rensselaerville, NY 12147**. Our Annual Report is on file with and available through the N.Y.S. Dept. of State, Charities Registration Section or the Preserve.

For the Birdwatchers

Initial sightings on the Preserve during 1992.

March

18	Purple Finch
20	Robin
30	Phoebe
	Wooduck
	Mallard
	Turkey Vulture
31	Bluebird

April

1	Belted Kingfisher
4	Meadowlark
	Flicker
6	Wookcock
7	Blue Heron
	Hooded Merganser
8	Chipping Sparrow
	Cedar Warwings
12	Yellow Bellied Sapsucker
13	Tree Swallow
16	Yellow Rumped Warbler
20	L. Water Thrush
24	Osprey
25	Vireo
27	Empidonax Flycatcher
29	House Wren
	Green Heron

May

1	Yellow Warbler
2	Blk. Throated Green Warbler
	Ovenbird
3	Rufous Sided Towhee
4	Kingbird
	Yellowthroated Warbler
11	Chestnut Sided Warbler
	Prairie Warbler
12	Catbird
	Blackburnian Warbler
	Blue Winged Warbler
13	Bobolink
14	Nashville Warbler
	Rose Breasted Goshawk
15	Redstart
	Baltimore Oriole
19	Black Throated Blue Warbler
	Canada Warbler
21	Great Crested Flycatcher

The Dam, Revisited

The following excerpts are from letters written by members of the Niles family to other family members in response to the news of the dam breaking April 18, 1870. The originals are in the extensive collection of **Janet Long Haseley**, a Niles descendent. We thank **Lisa Mullenneaux** for providing us with this piece of history.

From Addison Cook Niles of Nevada City, CA to his parents, John and Polly in Rensselaerville (May 6, 1870):

> "(Sister Mary and brother-in-law Niles Searls) showed me the letters from home about the break of the pond dam. What a pity that is. So! After I learned that no lives were lost at R'ville, my feeling of grief was that the pretty lake should be lost to the old town and perhaps not replaced, and the falls torn and shattered, as I can conceive must have been and the great desolation all along the creek. I suppose one ought to mourn for the private losses of the citizens, but I couldn't see that at first. I am very sorry for it all."

From Mary Niles Searls of Nevada City, CA to her sister, Cornelia Niles Allen (May 8, 1870):

> "Your letter and Pa's describing the fearful havoc made by the water at R.ville came to hand a few days ago. You may be sure we feel very sad indeed about it. It does seem as though it must be the finishing blow to the poor little deserted village. I am sorry for you all who have to be there and see and feel daily the desolation and ruin that is wrought. I can but be glad that we were all home last summer and visited and enjoyed the old rambles to the last. I hope time will be more successful than you fear in covering and restoring the beauties of the old scenes, but I fear there is no hope for the revival of business to any great degree."

From John Niles of Rensselaerville to his daughter, Cornelia Niles Allen (October 16, 1870):

> "W.R. Tanner Esq. has purchased the mill property here, and will immediately commence with all the force he can put on to rebuild the dam, intends to build it six feet higher than it was before, and in the most substantial and safe manner, his object is to raise a sufficient reservoir to supply this place and Medusa with water at all times."

I wonder if, a century from now, our descendants will be reminiscing over our faxes while contemplating dam repairs yet again.

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