SUMMER 1987

NEWSLETTER

THE EDMUND NILES HUYCK PRESERVE, INC.
P.O. BOX 188, RENSSELAERVILLE, NY 12147
(518) 797-3440

Resident Manager's Report

I have been at the Preserve for ten months and I wanted to take this opportunity to bring our members up to date on what has been going on here. We have made great strides in initiating many capital improvements, organizing new activities, getting the Preserve active again in community events, and assuring the continued high quality of research activities on the Preserve. I use the terms we and our throughout to indicate your involvement as a member of the Huyck Preserve because your donations allow us to do the things I will talk about.

Capital improvements will be made on Lincoln Pond Cottage, Davis Cottage, Eldridge Research Center, and the Ordway House. Lincoln Pond is scheduled to have the foundation repaired (it has slipped over the past 200 years), and a new chimney is to be installed to service a wood burning stove and furnace. Later this year, should we be fortunate enough to receive a grant from the National Science Foundation (more on this later), the cottage will be insulated, new walls and wiring installed, and the bathroom and kitchen enlarged. Davis Cottage (Lakeside Lab) may also get a face lift this fall if the NSF grant comes through. The Ordway house was painted this summer and has a new wood burning stove with a catalytic converter and a new chimney. A new furnace is being installed at the Eldridge Research Center so it can be used year-round. Heating will also help preserve our valuable scientific collections and library holdings.

This winter we have had more snow than anyone around here can remember having had for 20 years or so. We have had an accumulation of just under six feet. I spent several mornings on the Preserve's tractor plowing out the Mill House office and Ordway. It is fun to plow into a huge snow bank and send snow flying every which way. Seriously, to help us keep track of the weather better than we have in the past, soon we will have a weather station that gathers and records data onto a computer. Researchers will then have access to year-round weather data which is a very important component of any field study.

We have begun plans to establish a new bird watching trail in honor of Mr. Charles Woolsley and a nature study area to honor Dr. George Cooley, both long time friends and supporters of the Preserve. There will be descriptions of these areas in our new brochure planned for this summer.

We are pleased with the progress of the research that was conducted here last year. In addition I have been able to initiate several studies of my own. This summer, not including myself, we had 16 scientists here conducting research projects including trying to understand tree and understory succession, to the effects of acid precipita-

(continued on page 2)

CONTEST

We have been publishing this newsletter for several years now, but have never had a name other than "Newsletter" for it. Calling it "Newsletter" is a little like naming your child, "Child." We feel it is time that the newsletter had a name that signifies its place in the world and provides it with a greater degree of respectability, so we are sponsoring a contest to name our newsletter.

Members are invited to submit their ideas to the Preserve. The Board of Directors will appoint a committee to judge the entries. The winner will receive a t-shirt, a pint of maple syrup, and one year's free membership to the Preserve.

Contestants should submit a name for the newsletter of not more than five words to Dr. Richard Wyman, E. N. Huyck Preserve, P. O. Box 188, Rensselaerville, New York 12147.

All entries must be postmarked no later than August 8, 1987. Winner will be announced in upcoming Newsletter.

The American Beaver

The constructions of beavers - their dams, lodges, and canals - have fascinated people since the first colonists arrived in North America. Although the beaver is often maligned for its activities, it benefits man in many ways. I will attempt to provide a glimpse of the natural history of the beaver, a view of how the beaver is important to the natural functioning of both terrestrial and aquatic habitats, and a short history of beaver trapping.

NATURAL HISTORY

The American beaver, Castor canadensis(Order Rodentia), the largest living rodent in North America, is related to the giant, bear-sized beaver, Casteroides, that lived during the Ice Ages more than 15,000 years ago. Today's adults, while considerably smaller, weigh a good thirty to seventy pounds and measure three to four feet long from nose to the tip of the flat, scale covered tail. The beaver's small front legs have long sharp claws for digging as well as for dragging things. The webbed hind feet are designed for efficient swimming.

The beaver dam is perhaps the most spectacular construction made by any animal except man. In earlier times, almost every stream, pond, bog, or river had a population of beaver whose dams were an integral part of the terrestrial and aquatic systems. The dams start out small, but as the years go by, beavers make the dam higher and longer. They have been known to be as long as five hundred feet impounding as much as sixty acres of water.

During October and November - tree cutting season - beavers may cut down many trees and store the limbs in an underwater food cache near the dam. A beaver begins a dam by forcing small branches and tree boughs into the soft substrate of a stream, and using his snout, he packs mud, earth, rocks, and grass around the sticks. He swims, carrying his load of rocks and mud with his forepaws tucked up under his chin. He places larger poles and tree trunks randomly on the up-stream side of the dam. On larger streams, the mid-section of the dam will not have mud packed around the poles and this allows water to percolate very slowly over and through the dam. A dam 260 feet long and 6 feet high has enough material to fill twenty dump trucks - yet the beaver carried it all by hand.

The center of the beaver community is the lodge, where the young stay during their first months. Lodges may measure twenty-two to twenty-six feet across and include a seven by seven foot central chamber about one and a half feet high. There are usually two entrances, one or two feet underwater. One is long and straight to allow the beaver to bring in wood, while the other, a shorter one, is used as an everyday entrance.

(continued on page 3)

President's Message

As you know, the dam on Lake Myosotis has been classified by the Army Corps of Engineers as a potential hazard. That is if a so called "500 year rain" occurred, water could overtop the dam and cause it to erode and eventually give way. The Preserve has had an engineering firm study the dam and suggest the best possible solution. The firm suggested that the crest of the dam be raised by two feet at a cost of $200,000. The Preserve finds itself in the position of being expected to repair the dam as a private organization despite the fact that the dam impounds the drinking water supply for the village of Rensselaerville.

A Dam Committee was appointed by the Board of Directors to try to find possible sources of funding for the project. The Preserve does not have sufficient resources to correct the problem by itself. I submitted a preliminary proposal to the NYS Department of Parks and Recreation to investigate the feasibility of obtaining funds through the recent Environmental Quality Bond Act. A certain portion of funds made available by that Act was designated for the protection of historic sites. Since the hamlet of Rensselaerville lies below the dam and could be in jeopardy should the dam collapse, the Dam Committee thought that it would be appropriate for the Department of Parks and Recreation to help fund repairs to the dam through funds from the Environmental Quality Bond Act.

If such funds become available they will cover only 50% of the project cost. The Preserve must raise the other 50% to qualify for this aid. We hope that Albany County might be able to help out through the contribution of men, trucks, earth moving equipment and fill. We'll be exploring this further, and hope to have a solution to this perplexing problem during 1987.

Martin E. Sullivan
President

The 1987 Annual meeting will be held at 10:30 on August 8 in the Eldridge Research Center.

Resident Manager's Report (continued)

tion, studies of the Preserve's macrofungi, and the evolution of behavior of dragonflies. We are preparing an annual report on our 46th year that will describe the research in detail. It should be available for a modest price sometime later this year. We also plan to publish our first occassional paper that will describe the history of scientific work and the status of the ecological communities of the Preserve.

This summer and fall two graduate students worked with me and we have just finished our first report on the salamander populations of the Huyck Preserve. I have sent to 50 or so colleges and universities in New York descriptive literature describing our internship programs at the Preserve. These will give college students first hand experience in the day-to-day operation of a nature preserve and allow them to participate in ongoing ecological research.

My work examines the relationships among acidic deposition (rain, snow and dry deposition), soil acidity, and the health and well being of the Preserve's salamander populations. Salamander populations are important both because they are sensitive indicators of forest activity and because they tell us about the inner workings of the forest floor decomposer food web. This portion of the forest recycles nutrient and rare minerals so that trees may continue to grow. Salamanders are also an important food source for forest birds, small mammals, and reptiles. The salamander represents an important link between the small invertebrates and insects and the larger carnivores of the forest.

One of my other projects is to evaluate the importance of subsoil conditions during hibernation and how these conditions affect egg development in female salamanders and overwinter survival of all salamanders. The red-backed salamander, probably the most abundant terrestrial vertebrate in the Northeast United States, deserves careful study, especially since my studies have shown that the distribution of this species is limited by acid soils. Thanks to the help of the Preserve's computer, my earlier work on acid soils and salamanders will soon be appearing in a scholarly scientific journal.

In the back of the Mill House, I have an aquatic research laboratory. I am conducting experiments on how food availability affects the development of behavior in fish. I am finding that territoriality can change depending on the relationships among the fish's past feeding history, his body size, and the amount of food it is currently receiving. This work may help us better understand how scarce resources may trigger aggressive behavior in other animals as well. This work too is scheduled to appear in a scientific journal.

It is important for the Preserve and community to work together for without community involvement the Preserve's job would be much harder. This year the Town of Rensselaerville is celebrating its two hundredth birthday. I have been elected to Chair the Town's Bicentennial Committee. That committee is sponsoring throughout the summer a number of fun activities including a parade, dance and cookout in Rensselaerville (Aug 29), fireworks, baseball games, a children's play and picnic in Preston Hollow (Aug 15) and a bicentennial dinner and burying of a time capsule in Medusa (Sept 26). If you are in the neighborhood this summer, please plan to attend some of these old-fashioned, fun events.

My wife Marilyn has started a nature study club with about 25 of the town's youngsters. The Club is sponsored jointly by the Rensselaerville Library and Huyck Preserve. In addition the Preserve is now hosting a monthly lecture series where distinguished scientists present stimulating and thought provoking seminars on current topics in the sciences. These talks are always free and open to the public.

The winter has offered one other community event. The annual Lake Myosotis ice fishing contest was held in mid January with some 100 people braving the blowing snow and cold for a chance to catch the "big one." This year's winner was a 28 inch pike.

This winter and spring, I have been teaching biology at Siena College. This helps me stay current and keeps me from becoming too much of a hermit. It also provides opportunities to interact with scientists who may wish to do research at the Preserve. I have also given guest lectures on the Huyck Preserve and my research at the State University at Albany, and Union, Siena, and Hartwick Colleges. Late last fall I was able to lead a salamander hunt with 70 local volunteers at the Pine Lake Environmental Center of Hartwick College. I have now a seven year data base on the salamander populations of the Pine Lake Environmental Center's forests.

The Preserve is cooperating with the State Museum in Albany in organizing the next meeting of the Society for the Study of Ichthyology and Herpetology. That meeting will be in June and will include a tour of the Preserve. I am also on the organizational committee of the sixth Biennial Meeting on the Ethology and Behavioral Ecology of Fishes that will be held in Texas this year. I attended the First International Meeting of Behavioral Ecology last fall at the New York State Museum. I even found time to review four scientific papers as part of my position as Assistant Editor for the journal Fisheries Research.

Last fall I attended the National Meeting of Biological Field Stations in Nebraska and met many other field station managers. I also talked at length with Dr. Jim Edwards of the National Science Foundation (NSF) about that agency's new program to provide funds for the upgrading of inland field stations. The NSF has recognized the critical role that field stations and their undisturbed habitats play in expanding our understanding of natural processes. Thanks to the efforts of Board members Marty Sullivan, Laura Carter and Jerry Rozen, office assistant, Sharon Curtis, and the members of our Scientific Advisory Committee, I was able to submit a proposal to the NSF to upgrade our research facilities. We requested support for research equipment and for the installation of a stream gaging station that will monitor the water quality of the watershed that supplies Rensselaerville's drinking water. We also asked for funds to help us refurbish and winterize several of our buildings so we can become a year-round research center. We will find out in June whether our proposal was successful.

Our economic situation looks good for this year, but as always our continued success and growth depends to a large extent on the support of our members. We are currently in the process of computerizing our financial records. The time saved, once the record-keeping is computerized, can be used to develop more scientific and community activities.

As you can see it has been a busy ten months, notwithstanding the six feet of snow. Many of the projects I have described would benefit greatly from volunteer help. If you would like to participate, such as by helping out with a research project or attending a monthly seminar, please feel free to call me anytime (518-797-3440). I will be keeping you, our members, informed of what is going on at the Preserve periodically in this newsletter. Have a good spring and summer.

Richard Wyman

1987 Huyck Hike Schedule

The Edmund Niles Huyck Preserve and its Biological Research Station offer free interpretive nature walks weekly to interested area residents. You are invited to attend these informative outings and learn more about the ecology of the Huyck Preserve. The walks are guided by scientists that are conducting research on the Preserve and by others whose area of expertise includes important information relevant to the Preserve. Also listed is one Huyck Distinguished Scientists Lecture* that occurs at 4:00 PM on Sunday and is held in the Eldridge Research Center.

Date	Scientist	Topic
June 28*	Dr. Dennis Logan Mercy College	Voyage to the Bottom of the Sea (Huyck Lecture 4:00 - Eldridge Center)
July 5	Dr. Scott Collins University of Oklahoma	Forest understory
July 12	Dr. William Elliott Hartwick College	Decomposition and decomposers
July 19	Dr. Susan Beatty University of California	Forest microhabitats
July 26	Dr. Joan Herbers University of Vermont	Ants of the Preserve
Aug. 2	Mr. Art Johnsen NYS Dept. Environmental Conservation	Beavers and the Preserve
Aug. 9	Dr. Ralph Ibe Queens College	Bog sediments and 6000 years of forests change
Aug. 23	Mrs. Corlin Bauhofer Shalmont School	Fungi of the Preserve
Aug. 30	Ms. Sharon Curtis E. N. Huyck Preserve	The George Cooley Nature Study Area
Sept. 12	Dr. Richard L. Wyman E. N. Huyck Preserve	Fall Salamander Hunt

Most events begin at the Preserve's office located in the Mill House, Main Street, Rensselaerville, N.Y. Please call 797-3440 for additional information.

1987 Recipients of Huyck Preserve Research Grants

Bauhofer, Corlin R., M.S.(State University at Albany)
A floristic study of the macro-fungi of the E.N. Huyck Preserve.

Beatty, Susan, Ph.D. (Cornell University, 1981)
The role of dispersal in creating vegetation patterns in the forest understory.

Collins, Scott, Ph.D. (University of Oklahoma, 1981)
Habitat structure of tree seedlings in a hemlock-hardwood forest.

Elliott, Nancy, Ph.D. (SUNY College of Environmental Sciences and Forestry, 1971).
Survey of the insects of the E.N. Huyck Preserve.

Elliott, William, Ph.D. (Syracuse University,1970)
Role of microbes in forest floor decomposition.

Ibe, Ralph, Ph.D. (New York University, 1982)
Pollen, spore and diatom stratigraphy of the resident bog.

Marden James (Ph.D. candidate, University of Vermont)
The role of flight muscle ratio as a determinant of male mating success in the libelluid dragonfly, Plathemis lydia.

Matthews, Robert, Ph.D. (Harvard University, 1969)
Reproductive competition in parasitic wasps.

The American Beaver *(continued)*

Lodges may be islands or attached to the pond shore.

As the floor of the lodge is built just a few inches above water, beavers are very sensitive to the pond's water level. If the water level rises too much, the lodge will be flooded and the young will drown. If it falls too much, the opening of the lodge will be exposed, leaving the beaver vunerable to its predators. But the beaver can work to control the water level, by "adjusting" the dams when necessary.

Beavers cannot build dams when the water is more than two feet deep and instead create extensive burrow systems along the banks of the stream. Burrows are also used as retreat sites if the beaver is attacked when he is away from the lodge.

Beavers also build canals to gain access to forested regions and to bring wood to the lodge. Canals up to six hundred feet long have been recorded. The canal can flood new areas and make short cuts across a bend in a stream.

Most beaver are monogamous with a single male and female establishing a family unit in a pond. Some males, however, may be polygynous and have a harem of several females that they visit periodically throughout the year. Females usually bear from two to five young, called kits, in May after a three to four month gestation period. Kits make cries just like human infants. They are weaned from their mother's milk when they are six weeks old and begin to eat bark, twigs, and shoots. The young live with their parents for two years, sharing the lodge and pond. A two-year-old beaver is ready to leave home and find a mate and the new couple usually moves to another spot and builds a small dam and lodge. Beavers live about twelve to fifteen years, although some have lived to be as old as twenty-five.

The beaver's main food is the bark of deciduous trees. They prefer paper birch, cottonwood, poplar, and willow and they will also eat soft maple, walnut, black and white ash and the roots of pond lilies and grasses. Although beaver do not normally eat hemlock or pine trees, they will cut them down when these trees are near the pond. One to five beaver may work on a single tree. It will take two beaver three nights to cut down a one foot diameter tree. Usually, there is a guard beaver who watches for predators.

Beaver are equipped with four, continuously growing, chisel-like, razor-sharp incisors - two in each jaw. Because only the front of these teeth have enamel, the back of the teeth wear more quickly giving rise to the chisel shape. The beaver gnaws a tree, mainly using his lower teeth, and alternating left and right sides of his mouth. After a tree is felled, the beaver gnaws off the branches and the rest is cut up into logs or poles that the beaver can handle.

ECOLOGY OF THE BEAVER

The beaver is unique because of his ability to modify its habitat to suit his needs. By building dams and flooding the surrounding woodlands, beaver can turn an area that cannot support them into one that can. Some tree species die when their root systems become waterlogged while the beaver cut others down. In any event, the removal of trees allow willows and alders to grow - and these serve as food for the beaver.

By creating small ponds along the streams, the beaver dramatically affect the hydrology of a drainage basin. Beaver dams and ponds act as flood control systems analogous to those of the Army Corps of Engineers. They prevent flooding by slowing the rate of water loss from an area. This in turn causes nutrient rich sediments to precipitate into their ponds where they become available to other organisms and are recycled to the forest. If the beaver didn't "clean" the water in this way, the sediments would be lost to water treatment plants downstream.

The construction of ponds by the beaver also increase the diversity of habitat, allowing brook trout and bass to overwinter in areas otherwise not available. The increased growth of shrubs and bushes creates habitat for birds like warblers and thrushes. The pond's borders are used by a variety of wading birds, and ducks, herons and geese feed and reproduce on beaver ponds. Beaver ponds on the Huyck Preserve are also used by river otter, a once rare animal that is returning to our woodlands.

TRAPPING

The fame and value of beaver was established in North America when it was discovered that their pelts were very thick, an adaptation that allowed them to live in near freezing water. The first beaver pelts, used to make hats, were sent to Europe in 1624. New England

The American Beaver ***(continued)***

was the center of trapping activity until about 1700 when the beaver was no longer considered economically important in that area. Just prior to 1700, about 65,000 pelts passed through Boston each year, and in 1743, 150,000 were shipped in Hudson Bay Colony. During the 1800's, the harvest intensified. The Hudson Bay Company sold nearly three million beaver skins in London alone between 1853 and 1877. The annual take by trappers between 1860 and 1870 was close to 500,000. By 1900, the beaver, whose North American population prior to the arrival of the Europeans had been about sixty million, was nearly exterminated.

Today, with laws to protect the beaver and with the elimination of most of its natural predators, (mountain lions, coyotes, wolverines, wolves, bears, lynx, and otters), the beavers numbers are on the rise. The impact of beaver has important consequences for geology, water quality, and the dynamics of aquatic and terrestrial systems. The next time you see signs of beaver activity on the Huyck Preserve, you can take pleasure in knowing that the forests are returning to a more pristine state and that the beaver are hard at work helping you.

By Richard Wyman, PhD.

THE EDMUND NILES HUYCK PRESERVE, INC.
P.O. Box 188
Rensselaerville, New York 12147

Membership Dues

Junior (17 yrs. or younger)	$5.00	$_____
Active	$10.00	$_____
Supporting	$25.00	$_____
Contributing	$50.00	$_____
Sustaining	$100.00	$_____
Patron	$1000.00	$_____

Name: _____

Address: _____

_____

Please make all checks payable to The E.N. Huyck Preserve, Inc., and mail to the above address. Tax deductible: Annual report is on file and available through the N.Y.S. Department of State, Charities Registration section, or the Preserve.

Thank you.

THE EDMUND NILES HUYCK PRESERVE, INC.
P.O. Box 188
RENSSELAERVILLE, NEW YORK 12147

BULK RATE
NON-PROFIT ORG.
U.S. POSTAGE
PAID
RENSSELAERVILLE, N.Y.
12147
PERMIT NO. 5