



The Newsletter LANDIS ARBORETUM

Esperance, New York

Winter 2000

Volume 19, No. 1

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Calendar

(At the Arboretum unless otherwise noted.)

Jan.	18, 25	Horticulture Certificate Class:
February	1, 8	Landscape Design, 6:30-8:30 pm
February	12	Adult Workshop: Trees-Learning to Tell One from Another, 11 am-1 pm
March	1	Adult Workshop: Time-Saving Secrets for Your Garden's Care and Upkeep, First Unitarian Society, Schenectady, 7-9 pm
March	8, 15, 22, 29	Horticulture Certificate Class: Trees and Shrubs - Health Care, 6:30-8:30 pm
	24	Astronomers Star Party, 7:30 pm
April	22	Family Workshop: Earth Day Hawk Watch, 8 am-5 pm Hawk Identification Workshop, 2-3:30 pm
	28	Astronomers Star Party, 9 pm
May	6	Family Workshop: Early Morning Bird Walk, 7-9 Bird Watching for Families, 2-3:30 pm
	13	Family Workshop: Nature for Scouts and Youth Groups, 2-3:30 pm

From the Garden - Fred Breglia

ARBORETUM UPDATE

Heavy snow completely covers the ground at the Arboretum and I'm using snowshoes to get around. It's absolutely beautiful this day after a big snow storm. The evergreens are truly magnificent with the branches pulled right to the ground by the heavy snow that blankets them. This winter has been a very busy one for me; even though the visitation and outside work have slowed, the inside work has picked up the pace.

At this time of year I do most of the curatorial work. There are four distinct and equally important parts that need to be done, in order, when updating and improving documentation of the collection. The acreage that holds our specimen plants is divided into one-acre squares, or sections. 1) In order for a section to be complete, all plants growing there must have a location in relation to the section measured and plotted on a map. In this way we accurately pinpoint where every plant is in the field. 2) The next step is to update the paper files on every plant so they match the information on the new maps. 3) Then we go to the Bg-base system (Computer Database on Collections), making sure that the information on the maps and paper files match what we have on the computer system. 4) The final step is to attach a label with all pertinent information directly to the plant.

1999 D.E.C. GRANT COMPLETED

As mentioned in the last issue of the newsletter, the Arboretum was the beneficiary of a DEC grant which is now complete. The grant allowed us to purchase and install new signage. The Notable Trees have each received a 5 x 7 inch photo-metal sign guaranteed against defects and fading for 20 years. In addition to the Notables, all of the trees in the collections that are recommended by Cornell University for urban/street planting, and well over a hundred others, have new signs. The grant also provided funding to develop and print 5000 brochures which provide a self-guided tour of the Notable Trees, along with a map showing tree locations, names, key features, and a listing of seasonal highlights of the various species. This brochure will serve as a blueprint for other Arboretum brochures describing the Van Loveland perennial border, Arboretum trails, etc. The brochure will be available in the spring, and we thank NYS DEC Urban and Community Forestry who helped make this possible.

2000 D.E.C. GRANT AWARDED

I'm pleased to say that Landis is the recipient of another grant from NYS DEC Urban and Forestry. This summer and fall we will be adding between 20 and 30 "new" two- to three-inch caliper trees to our collections - and we'll be looking for volunteers to help us plant.

(Continued on page 2)

From the Garden, continued

ANNUAL NYS RELEAF CONFERENCE

Releaf NY is a coalition of groups promoting urban and community forestry to increase public awareness about the value, benefit, and stewardship of trees. On Saturday, July 15, 2000, the Landis Arboretum will be one of three tour sites for the NYS Releaf Conference. The group will tour our collection of urban trees and we will give plant health care demonstrations. Volunteers will be needed to assist all day; please call the Arboretum to find how you can help.

LANDIS ARBORETUM INTERN

Andrea Arnold, a student at SUNY Cobleskill working on her bachelor's degree in plant science, has been helping me here at Landis since December and will continue until May. In preparation for work at a botanical garden, arboretum or similar organization after her graduation, Andrea wants to accumulate experience in the day-to-day operations of an arboretum and to reinforce her knowledge of horticulture.

SPECIAL THANKS

I want to say thanks to some special people who have been helping me this winter.

A thank you to Andrea Arnold has been helping me with the mapping process recently, and we will work on the Woodland Trail in the spring.

A thank you to Terry Staley, an Arboretum member who is an active volunteer and serves on the building and grounds committee. He has assisted with the mapping; he has photographed the Notable Trees with his digital camera (all the photos in this issue are by Terry); he is a true Jack of All Trades who has helped with many tasks.

And thanks to Sonja Javarone, a member of the horticulture committee and long-time volunteer, who has been invaluable as a photographer and experienced contributor to the Arboretum's record keeping system.

Gil O'Brien, member of the Arboretum and the building and grounds committee, has donated numerous tools - Craftsman screwdrivers, drill bits, punches, chisels, wrenches, sockets...and a tool box to put them in. We do thank him.

And, if I've missed anyone, YOUR help has been appreciated, too! There are plenty of volunteer opportunities where you can really make a difference...and you'll be hearing from me.

Long Range Planning Committee

Detailed topographic and planting maps are fundamental in producing a long-range plan for the Arboretum. The aerial photographs necessary to make these maps have now been taken and work is under way to prepare the needed maps.

Progress continues to be made in developing a long range plan for the Arboretum. On Saturday, November 13 the entire Board of Trustees met at SUNY Cobleskill to further develop an understanding of the assets and the needs of the Arboretum in five key areas listed in the last newsletter. Each of the committees is working on the strategies and goals relevant to the responsibilities of that particular committee.

To this point, most of the work has been dedicated to gathering information so that everyone understands the condition and trends of the Arboretum. It will soon be time to



THE LANDIS ARBORETUM

NEWSLETTER

is published quarterly for its members. The Arboretum's mission is to provide natural history and horticultural education through its programs and through its plant collection.

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Fran Finkbeiner

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understand and develop the hopes for the future and marshal the resources of Landis to make those hopes a reality.

We hope Arboretum members will make their own views and resources known and available to the committee as work progresses.

Landis Website!

Landis Arboretum now has e-mail! Our address is landis@midtel.net and we invite you to add it to your address book.

But - we need a volunteer to construct a web page for the Arboretum and, if possible, to maintain the site. You can, of course, do this from your own home. Information about arboretum events, programs, classes, and workshops will occupy the site initially, and we'll expand when it becomes practical. Can YOU help us?



How Does Our Garden Grow?

New Members - Please note that the names listed here are new members that joined during the fourth quarter of 1999. **We wish you welcome!** A complete list of members and contributors is available once each year.

David Buddle

Robert Buddle

W. Ramsey Christian

Dan Maier

John McKeeby

Michelle Singer

Pat Van Buren

Nancy Young

Spring Plant Sale Preparation

- Carol Wock

For those of us who love gardening, planning for the coming gardening season is one of the most satisfying aspects of winter. Snow blankets my garden, but on my computer table is a long list of the plants we have ordered for the spring sale. This list stimulates images of the beauty that will emerge next spring, as well as ideas for adding new plants to enhance my garden.

Ordering for the spring sale started last summer. The plant sale committee has also met several times to plan the details of the sale. We will soon start calling volunteers, without whom there would be no sale. Well over a hundred volunteers work together to make the sale possible. Many of you automatically put the sale week dates on your calendars and plan other activities around those dates. For this we are grateful.

If you are interested in joining our plant sale volunteer staff, please phone or e-mail the Arboretum office. In March and April, volunteers are needed in the greenhouse - a lovely warm, moist, and pleasantly aromatic place to be during the blustery days of early spring. In May we need volunteers to put up sale signs throughout the area. Committee members need help with specific tasks in preparation for the sale: securing raffle items, organizing and making plant signs, record keeping, and mailings. More volunteers are always needed to set up for the sale, as well as to help out during the sale. Won't you join us? We work hard, but we have lots of fun. >>

Spring WORKfest 2000

- Cindy Mickle

Spring WORKfest 2000 is being planned for April 15. Members, family, friends, everyone are needed for a day of work and fun. Volunteers of various skill levels and abilities are needed, including to plan food set-up and child programs. Fred Breglia will lead the work crew in chores to maintain the grounds and buildings. The day will begin at 9 am and food and refreshments will be served. Music is planned for the afternoon and programs will be available for younger attendees.

Call early to volunteer; we're looking for a head-count. To volunteer, or for additional information, please call the Arboretum at (518) 875-6935 or Cindi Mickle at (518) 868-4065.

Unless you are a new member, you are probably aware that we rotated some jobs on the plant sale committee. Trustee Herm Finkbeiner has passed the chairmanship of the committee back to me. I have given the job of ordering all plants and planning the advance order to Viktoria Serafin, who has greatly expanded the range of offerings. In the next newsletter, Viktoria will include plant previews along with an almost-complete listing of plants she has ordered for the sale.



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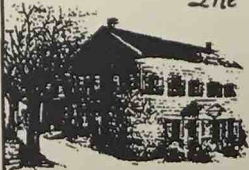
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Ginkgo biloba - A Bearer of Hope!

- Fred Breglia

The lineage of the *Ginkgo* makes the dinosaur age look like a recent event. The *Ginkgo* tree is the last living representative of the Order Ginkgoales, a group consisting of about 18 members that goes all the way back to the Triassic Period of the Mesozoic Era, 300-350 million years ago - long before the Alps and Himalayas even existed. During this time there were no other trees on the surface of the earth other than *Ginkgos*. But there were many ferns - and this might be a clue to the *Ginkgo's* origins.

During the heyday of the dinosaurs, the Jurassic period, around 213 million years ago, the *Ginkgo* family (*Ginkgoaceae*) dominated the earth. Fossil records show that there were at least two species. During the middle of the Jurassic Period the number of species increased to five with a diversity of 15 species during the Cretaceous Period 144 million years ago. *Ginkgo* was common and widespread in areas now known as North America, Europe, and Asia.

Around 65 million years ago, the *Ginkgo* began to decline, perhaps as a result of the extinction of dinosaurs, who acted as important dispersers of the large seeds. Due to geological cataclysms only one species remained, *Ginkgo adiantoides*. This species is identical to the modern *Ginkgo biloba* in every way. *Ginkgos* are the oldest living seed plants on earth and are considered by some to be one of the wonders of the world. Sometimes they are called "living fossils" because they are extinct in the wild and are grown only under cultivation.

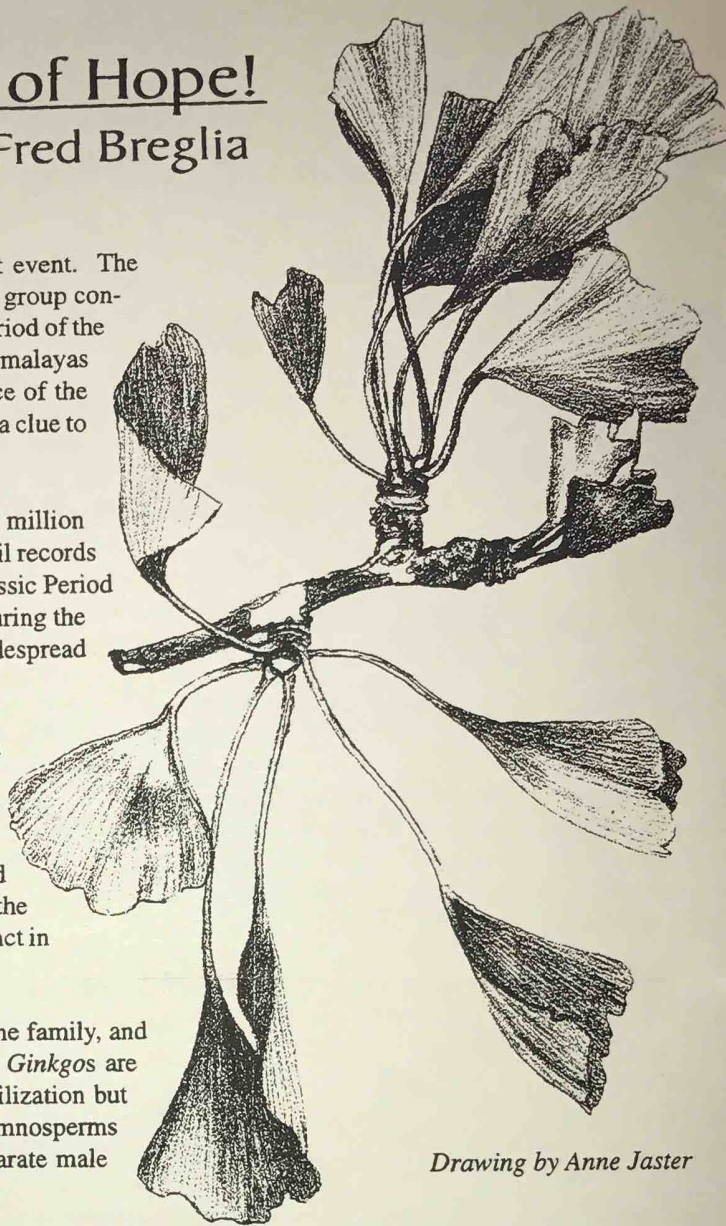
Botanists give this tree the unique honor of one species, one genus, one family, and one order - all for itself - for good reason. Like ferns and conifers, *Ginkgos* are gymnosperms that don't produce ripened fruit to house seeds for fertilization but instead have seeds protected by a fleshy seed coat. The majority of gymnosperms have both sexes on the same plant; the *Ginkgo* is dioecious, with separate male and female trees.

It usually takes 20 to 30 years for flowers to appear the first time. The flowers are inconspicuous and grow on short spurs. The female produces numerous ovules that contain egg cells, and resemble cherries when formed. In the spring, pollen cones containing the male sperm are produced; they also grow on short spurs and resemble catkins. Pollen blows in the wind. Once the ovules are pollinated, they develop into yellowish, plum-like seeds about an inch long, consisting of one large nut with a fleshy outer cover. The actual fertilization usually takes place after seeds have fallen to the ground and natural rainfall or dew allows the swimming sperm to fertilize the egg.

The female *Ginkgo* produces a foul-smelling fruit, about an inch- to an inch-and-a-half long, tan, and plum-like. (In landscaping you might want to plant only male plants to avoid the foul smell on your lawn.) Despite its odor, the fruit contains an edible nut or seed that is used in Oriental cooking. The name *Ginkgo* comes from the Chinese (later Japanese) words *gin* for silver) and *kyo* for apricot.

The leaves of *Ginkgo* are distinctly fan-shaped with a split in the middle that divides the leaves into two lobes. The name *biloba* is taken from the Latin *bi*, or double, and *loba*, or leaf. The leaves are bright green on both sides during summer, and depending on the weather, turn a beautiful yellow in fall, but they will drop off without coloring if temperatures are too cold. When looking at the two-inch to three-inch leaves, you might be reminded of maidenhair fern leaflets which are similar in appearance. Hence the *Ginkgo's* common name, Maidenhair Tree.

The *Ginkgo* is usually pyramidal in shape when young, but in old age it spreads, with large branches and a picturesque silhouette. *Ginkgo* trees, like wine, get better with age, so the landscaper should be patient. Individual trees may live longer than 4000 years! The species can reach 100 feet with a spread of 30-40 feet. They are relatively fast-growing if given adequate water and fertilizer. The bark is usually a grayish-brown, with plenty of ridges and furrows that create an interesting effect. >>



Drawing by Anne Jaster

Ginkgo, continued from previous page

Ginkgo trees can live in USDA Zones 4 to 9; however, success at higher temperatures has been reported from Singapore which means it can survive in tropical conditions as well. *Ginkgos* prefer full sun to partial shade and moist, deep, well-drained soils, but they are extremely adaptable. They can also survive in poor, compacted soils, various soil pHs, heat, drought, salt, and air pollution. Also, *Ginkgos* are recommended by Cornell University as trees suitable for Urban/Street planting (male only!).

The *Ginkgo* leaf contains components claimed to have therapeutic benefits for a variety of ailments. The earliest record of their medicinal use can be found in the ancient Chinese Materia Medica Pen Tsao Ching dating back to 2800 BC, which describes how aging members of the royal court were treated for senility. Later the *Ginkgo* was considered good for both the heart and the lungs. In traditional Chinese medicine, the edible seeds were used more than the leaves, as digestion aids and to treat many other disorders. In the late 1950s, western medicine began to study the uses of *Ginkgo*, and in the 1970s paleontologists, botanists, and biochemists joined in the studies. Today products from the *Ginkgo* are prescribed in Europe, the United States, Canada and other countries. An extract made from dried leaves and seeds is used as a diet supplement and is claimed to be a remedy for disorders of the brain, legs, eyes, heart and ears. Scientific studies have shown that extracts may prevent blood clotting, improve blood circulation and memory, and promote an improved sense of wellbeing judged useful in combating other disorders.

The *Ginkgo's* ancient beginnings give it a unique advantage. It evolved before any leaf-eating insect, and insects that mutilate the leaves of other trees often won't touch a leaf on the *Ginkgo's* crown. Also, it is resistant to disease, fungi, and even ionizing radiation. On September 1945, after

the atomic bomb was dropped on Hiroshima on August 6, trees and plants near the epicenter of the blast were examined. A *Ginkgo* that grew near a temple about 1000 meters away from the epicenter appeared to be the only tree that survived and was the first tree to bud without any deformities. The tree is alive today, and thus the *Ginkgo* is considered to be a "bearer of hope."

Our specimen *Ginkgo* here at Landis is located on the right side of the driveway as you walk toward the barn, just below the Van Loveland perennial borders. Come and visit the oldest tree species of the world - and consider its fascinating history that has unfolded over hundreds of millions of years.

Certificate Program - Nancy Boericke

The Horticulture Certificate Program's first course, "Landscape Design," January 18, 25, February 1 and 8, began with a full complement of 20 students (and four on a waiting list). Instructor Edward Kleinke of Kleinke Associates, Landscape Architectural Design and Town Planning, challenged each student to make suggestions for one of his firm's small landscaping projects. The final class will visit SUNY Cobleskill to see how computer-aided garden design works.

The second course, "Trees and Shrubs: Health Care," by Arboretum Horticulturist Fred Breglia will describe how to maintain your collection with proper health care, including judicious pruning. The health of the Arboretum's own collection has been greatly enhanced with the implementation of good, modern healthcare since Fred began his work at Landis. The class meets March 8, 15, 22 and 29 from 6:30 to 8:30 p.m. at the Landis library.



Betula pendula 'Youngii' at wintertime Landis. The tree's form reminds one prominent plantsman of a fat mop head.

"Tree and Shrub Identification," the third course, taught by Chris Cash, professor and nursery production specialist at SUNY Cobleskill, meets September 12, 19, 26 and October 3 from 6:30 to 8:30 p.m. at the Arboretum, our own outdoor laboratory.

"Introduction to Botany," the fourth and last course in 2000, taught by Peter Kaskeski, professor of plant sciences at SUNY Cobleskill, will meet on October 11, 18, 25 and November 1 at SUNY to enable students to use their laboratory equipment.

To register, call SUNY Cobleskill at 255-5323. Registration forms will be mailed to you; the cost is \$80 per class. Maps and information will be sent to those who register. Class size is limited so get your registrations in early.

Certification is awarded to students who complete six out of the eight courses offered in 2000-2001. The courses for 2001 are: Annuals and Perennials of the Northeast; Soils and Lawn Care; Herbaceous Plants: Identification; and Hardscaping in the Landscape.

Gary DeLuke



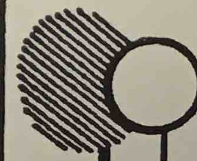
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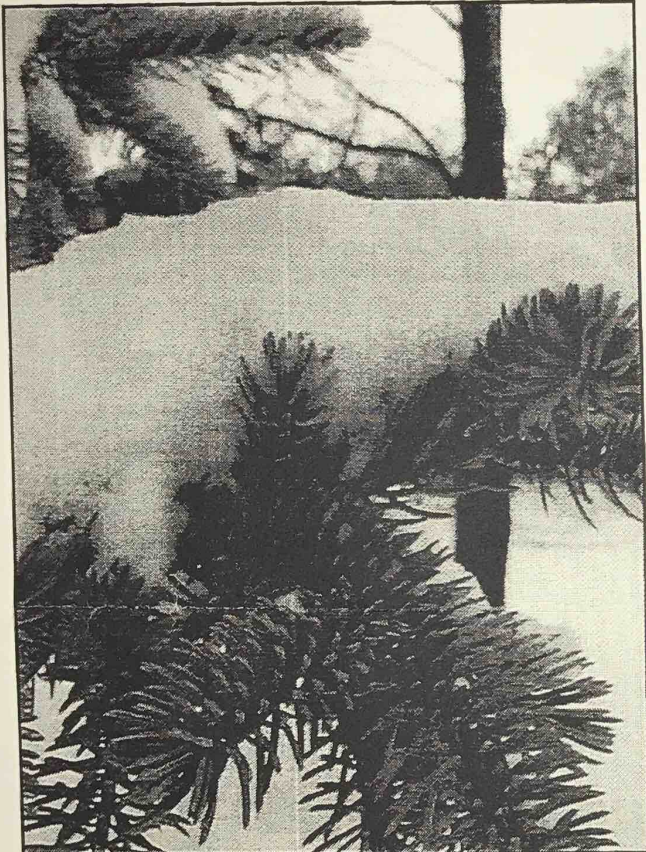


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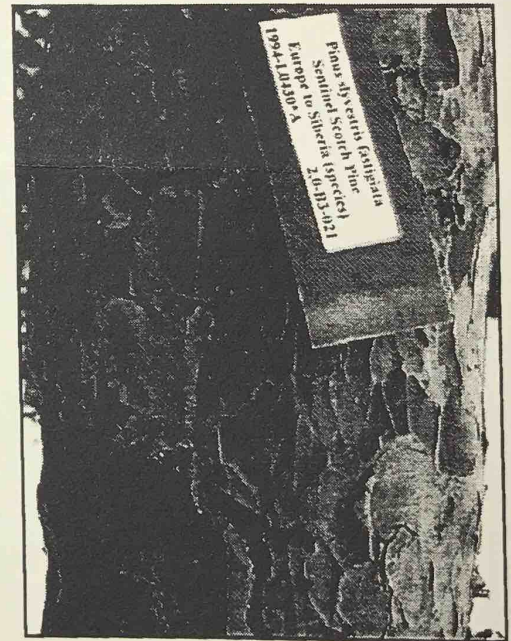
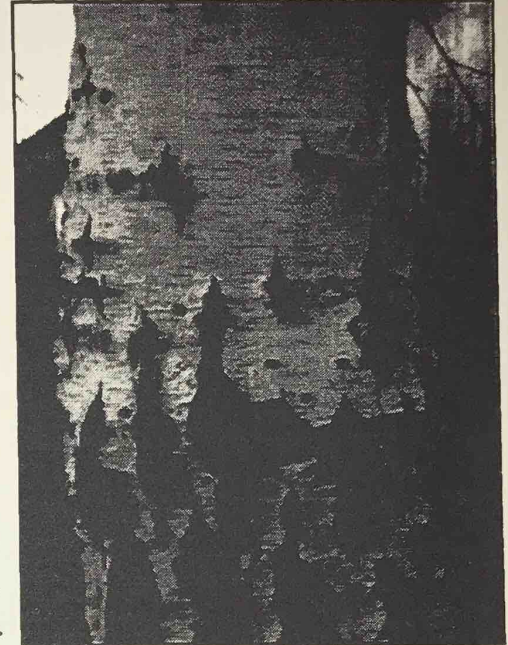
Out and About at the Wintertime Arboretum



Picea pungens 'Prostrata' in winter dress.

Betula pendula 'Youngii'
closely observed >

A well-marked *Pinus*
sylvestris fastigiata >



All photos by Terry Staley.

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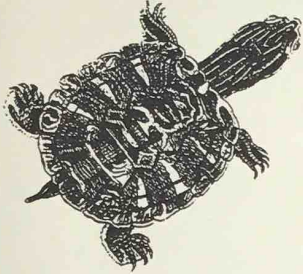
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ARBORETUM ADVENTURES FOR KIDS - Registration Form

Parent's Name _____ Daytime phone _____

Address _____

Child #1 _____ Age _____
 Number of sessions (1-5) @ \$10 _____ Session 6 @ \$5 _____ Total cost _____
 Child #2 _____ Age _____
 Number of sessions (1-5) @ \$8 _____ Session 6 @ \$4 _____ Total cost _____
 Child #3 _____ Age _____
 Number of sessions (1-5) @ \$8 _____ Session 6 @ \$4 _____ Total cost _____



Please indicate the sessions which each child will attend.

Child #1	Child #2	Child #3		
_____	_____	_____	July 12	Reptiles & Amphibians
_____	_____	_____	July 19	Backyard Bugs
_____	_____	_____	July 26	Birds
_____	_____	_____	August 2	Outdoor Living Skills
_____	_____	_____	August 9	Beginning Botany
_____	_____	_____	August 16	Pond Study

Please indicate below the name and phone number of someone to contact in case of emergency. This person should be available during the 10 am to 12:30 pm time period on each of the session days.

Name _____ Phone number _____

Please fill in, make your check payable to *Landis Arboretum*, and mail to:
 PO Box 186, Lape Road, Esperance, New York 12066



Hen in Snow

She comes out of the chickenhouse with dignity
 Not suspecting the soft snow awaiting her.
 Finding it all about her legs, she stops,
 Arches her neck, looks to the right,
 Looks to the left, and sees the white expanse
 Around her like a feed bin scattered.
 She reaches down and pecks herself a mouthful,
 and moves again, lifting her feet high
 and walking delicately, like last century's old maid
 with skirts lifted.

Suddenly dissatisfied,
 She gives her wings a flutter, lifts herself,
 And soaring twenty feet across the yard,
 She lands breast down deep in the middle of a bank,
 And tries to right herself, and fails,
 And all her dignity now gone, she flounders,
 Stretches her long neck goose-like above the snow,
 And cackles.

- Fred Lape, Barnyard Year



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Pinus parvifolia

Cold Skies, Cold Day

The storm has passed, white cumuli roll
Over the snowy hills to the eastern sky,
Cold drives in from the west, sky clears.
On the eastern clouds the deep blue grows,
cold deep blue, oxide of steel.

I have known eyes blue like those clouds,
Hands strong as the wind that drives them,
But the wind of time has torn them from me.
I stand alone.

Fury and beauty of earth,
I must plant my feet against you.
I must grow rooted like a tree.
I must feed deeply, I must transform,
I must give more than I have taken,
Then I will close my eyes, I will sleep.

- Fred Lape, Along the Schoharie



COMING ATTRACTIONS

The Landis Arboretum, Esperance, NY

Plant Sales

Two plant sales are held each year at the Arboretum, the larger Spring Sale on May 20 and 21, and the Preview Party on May 19; the Fall Sale will be September 9 and 10. Descriptions and details are published in the Arboretum newsletter and are available on request from the Arboretum office.

Concerts

Concert performances are held in our renovated 1830's barn amid the sights and sounds of a summer night at Landis. The ticket prices for each concert is \$10 for Arboretum members, \$12 for non-members, and children under 12 free. Advance reservations are requested. Consult a later issue of the newsletter or call the Arboretum for complete program information.

Saturday, June 17 at 7 pm. The Quercus Quartet, led by Ann-Marie Barker, will present a program of classical music for string quartet.

Saturday, July 29 at 7 pm. The Rubber Band Cajun Fiddlers. Rompin' and stompin' for the whole family.

Star Parties

The Albany Area Amateur Astronomers meet regularly at the Landis Arboretum for its dark skies and good horizons. On sun/moon picnic dates, the club's special solar telescope is used to provide a safe view of the sun; lunar and star gazing is continued after dark. Visitors are welcome to join the club's activities; bring a blanket to sit or lie on, and a picnic supper if you wish.

Adult Workshops

Saturday, February 12, 11 am to 1 pm. - Trees: Learning to Tell One From the Other with Fred Breglia, Staff Horticulturist. and Certified Arborist.

Wednesday, March 1, 7-9 pm - Time-Saving Secrets for Your Garden's Care and Upkeep, (Part II of "How to Have a Glorious, Everblooming Perennial Garden" presented in 1999) with Kerry Mendez. At the First Unitarian Society, 1221 Wendell Avenue, Schenectady.

Saturday, June 24, 9 am-12 pm - Pruning I with Fred Breglia, Staff Horticulturist and Certified Arborist.

Saturday, July 22, 9 am-12 pm - Pruning II with Fred Breglia, Staff Horticulturist and Certified Arborist.

Pre-registration is required. Call the Arboretum (518) 875-6935 or FAX 875-639 for further information or to register; make your check to *Landis Arboretum* and mail it to Box 186, Esperance, New York 12066.

Horticulture Certificate Program

Landis and SUNY Cobleskill are offering a program designed to inform professionals, homeowners and garden lovers about the latest in cultural practices and landscape design. Certification is awarded to students who complete six of the eight courses offered over two years, 2000-2001. Classes to be offered in 2001 are: Landscape Design, Trees and Shrubs: Health Care, Tree and Shrub Identification, and Introduction to Botany. To register, or for further information, contact the Arboretum or SUNY Cobleskill at (518) 255-5323.



CALENDAR OF EVENTS



JAN.	18, 25,	Horticulture Certificate Class: Landscape Design, 6:30 - 8:30 pm.
FEB.	1, 8	Pre-registration required.
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MARCH	1	Adult Workshop: Time-Saving Secrets for Your Garden's Care and Upkeep, at First Unitarian Society, Schenectady, 7-9 pm
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	20-21	Spring Plant Sale, 10 am-4 pm
JUNE	3	Family Workshop: Evening Moth Watch, 8-9:30 pm
	16	Family Workshop: Full Moon Campfire Sing-a-Long, 7:30-9 pm
	17	Concert: Quercus Quartet, 7 pm
	23	Astronomers, Star Party, 10 pm
	24	Adult Workshop: Pruning I, 9 am-12 noon. Pre-registration required.
JULY	8	Astronomers, Sun/Moon picnic, 5 pm
	12	Arboretum Adventures: Reptiles and Amphibians, 10 am-12:30 pm
	15	Family Workshop: Pond Ponderings, 2-3:30 pm
	19	Arboretum Adventures: Backyard Bugs, 10 am-12:30 m
	22	Adult Workshop: Pruning II, 9 am-12 noon. Pre-registration required. Family Workshop: Bat Watch, 8-9:30 pm
	26	Arboretum Adventures: Birds, 10 am-12:30 pm.
	29	Concert: Rubber Band Cajun Fiddlers, 7-10 pm
AUGUST	2	Arboretum Adventures: Outdoor Living Skills, 10 am-12:30 pm
	5	Family Workshop: How to Use a Topographic Map, 2-3:30 pm
	5	Astronomers, Sun/Moon Picnic, 5 pm
	9	Arboretum Adventures: Beginning Botany, 10 am-12:30 pm
	15	Astronomers, Annual Meeting and Star Party, 7:30 pm
	16	Arboretum Adventures: Pond Study, 10 am-12:30 pm
	17	Astronomers' Club, 7:30 pm
	26	Family Workshop: Herpetology Hike, 2-3:30 pm
SEPTEMBER	1	Astronomers, Star Party, 8:30 pm
	9-10	Fall Plant Sale, 10 am-4 pm
	10	Family Workshop: Grandparents' Day Nature Hike, 2-3:30 pm
	12, 19, 26 & Oct. 3	Horticulture Certificate Class: Tree and Shrub Identification, 6:30-8:30 pm. Pre-registration required.
	23	Family Workshop: Insect Investigations, 2-3:30 pm
OCTOBER	7	Family Workshop: Fall Foliage Tree Identification Hike, 2-3:30 pm
	11, 18, 25 & Nov. 1	Horticulture Certificate Class: Introduction to Botany (at SUNY Cobleskill), 6:30-8:30. Pre-registration required.
	20	Astronomers, Star Party, 7:30 pm
	28	Family Workshop: Halloween Owl Prowl, 7-8:30 pm
NOVEMBER	17	Astronomers, Star Party, 7:30

ALL EVENTS ARE HELD AT THE ARBORETUM UNLESS OTHERWISE NOTED.

The Acorn Shop, the Arboretum's gift shop, will be open from Saturday, May 6 to the end of October. 12-5 Saturday; 1-5 Sunday.

FAMILY WORKSHOPS

Family Workshops with nature educator George Steele will be held on selected weekend days, at the times designated, from April through October. All programs begin - rain or shine - at the Arboretum Meeting House. No advance registration is necessary. Programs are free; donations from non-members are greatly appreciated.

Saturday, April 22, 8 am-5 pm - **Earth Day Hawk Watch and Hawk Identification Workshop** - 2-3:30 pm. With the warming of spring comes the return of migrating birds. Join us for a day on the look out for hawks as they make their way north along the Schoharie valley. You can drop by any time to see what's flying or stop by at 2:00 in the afternoon for a session on hawk identification and information on the ecology of local resident hawks.

Saturday, May 6, 7-9 am - **Early Morning Bird Walk** - For beginning to advanced birders a chance to join us for an early morning walk to identify birds of the Arboretum's fields and forests. Families with younger children might want to join us for the afternoon program.

Saturday, May 6, 2-3:30 pm - **Bird Watching for Families** - Introduce your family to the fun of bird watching. We'll take an easy walk through the Arboretum's fields and forests on the lookout for birds. Learn how to use bird field guides. There will be a limited supply of binoculars for those who don't have a pair.

Saturday, May 13, 2-3:30 pm - **Nature for Scouts and Youth Groups** - There are many scout and youth projects that focus on nature, ecology and the environment. On this walk we will cover many topics that will help to meet these badge and project requirements. Call ahead to reserve a space for your group.

Saturday, June 3, 8-9:30 pm - **Evening Moth Watch** - There are many species of moths, some quite showy and spectacular, that go unnoticed because of their nocturnal behavior. Join us for this evening event as we set up a light to attract moths and see what shows up. You'll be amazed at the numbers and variations in the different species.

Friday, June 16, 7:30-9 pm - **Full Moon Campfire Sing-A-Long** - Join us for an evening of nature tunes and tales as the full moon rises over our campfire. Come early and have a relaxing picnic dinner, then enjoy the evening with songs, stories and theater-in-the-round participatory activities that will have you laughing and smiling as you learn about nature.

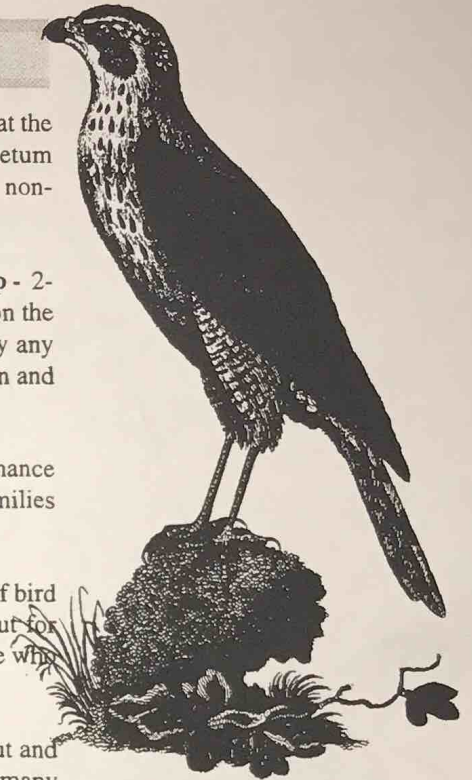
Saturday, July 15, 2-3:30 pm - **Pond Ponderings** - The ponds at the Arboretum are exciting places to look for living things. From the larger amphibians to the smaller insects, there'll be plenty to get your hands on as we learn about our freshwater ecosystems.

Saturday, July 22, 8-9:30 pm - **Bat Watch** - In one evening a bat can eat many thousands of mosquitoes. Join us as we search the Arboretum grounds on an evening walk for these amazing mammals. We talk about their biology and efforts to conserve these insect eaters.

Saturday, August 5, 2-3:30 pm - **How to Use a Topographic Map** - Last year's compass workshop was so successful that we've decided to offer a companion workshop on how to use a topographic map. We'll learn how to find features on a map, how to orient it and how to find directions with it.

Saturday, August 26, 2-3:30 p.m. - **Herpetology Hike** - We'll be looking for amphibians and reptiles, the animals studied in herpetology. As we walk through the Arboretum's woodlands on the way to the farm pond we'll pass some great habitat for these interesting creatures. We can't guarantee it but there's a good chance to see bull frogs, green frogs, toads, spotted newts, red-back salamanders, water snakes, and painted turtles. Learn about the life cycle and ecology of these interesting Arboretum residents.

Sunday, September 10, 2-3:30 pm - **Grandparents' Day Nature Hike** - Treat grandparents to a plant sale at the fall plant sale and then stay for an afternoon nature walk. We'll take a leisurely walk through the Arboretum's woodland and take in the sights and sounds of nature and learn some of her secrets.



FAMILY WORKSHOPS, continued

Saturday, September 23, 2-3:30 pm - **Insect Investigations** - Insects are the most numerous of all animals. We'll have plenty of opportunities to look closely at them as we catch and study the insects, and their close relatives the mites, centipedes, spiders and pill bugs of the fields and forests of the Arboretum.

Saturday, October 7, 2-3:30 pm - **Fall Foliage Tree Identification Hike** - Enjoy the fall foliage as we take a walk on the Woodland Trail and learn how to identify the native trees of the Arboretum.

Saturday, October 28, 7-8:30 pm - **Halloween Owl Prowl** - We'll start the evening learning about the owls of our area. We'll dissect owl pellets to see what they eat. We'll learn their calls. Then we'll take a short walk into the woods to see if we can get one to call back to us.



ARBORETUM ADVENTURES FOR KIDS

This series is designed for children 7 to 11 and taught by nature educator George Steele. The adventures take place Wednesdays from 10 am to 12:30 pm and include participatory learning sessions, and crafts, games and other activities related to the program topic. Classes are held rain or shine; please dress accordingly. Bring a snack or a sack lunch. The fee is \$10 per session for the first child in a family, \$8 for additional children from the same family. Any child who attends the first five sessions may come to the sixth session at half price. *Registration and payment are required at least one week before each session.* Parents are *welcome* to remain with their children, but are not required to remain. Any session is subject to cancellation with too few signups; if so, fees will be refunded.

July 12 - **Reptiles and Amphibians** - Explore the Arboretum for amphibians and reptiles and be a herpetologist.

July 19 - **Backyard Bugs** - Become an entomologist and learn about insects. We will make a variety of insect-capturing tools.

July 26 - **Birds** - Learn how to use binoculars and study birds as an ornithologist would.

August 2 - **Outdoor Living Skills** - Learn the basic skills that everyone that goes outdoors should have, including how to read a map, use a compass, build a fire and work with the outdoors.

August 9 - **Beginning Botany** - What tree is that, what flower is this, you'll know because you're learning to be a botanist.

August 16 - **Pond Study** - Explore the exciting world of the pond full of arthropods, amphibians and a few reptiles.

PLEASE FILL IN THE ENCLOSED REGISTRATION FORM AND RETURN IT TO:
The Landis Arboretum, PO Box 186, Lape Road, Esperance, New York 12066