

Public Is Invited

Marietta Natural History Society

Winter2000 Newsletter

Our Annual Pot-Luck Dinner

SERVING

"Y2K Sorbet"

**Cleansing Our
Environmental Palate
For The
New Millennium**

*Thursday, January 13, 6:00 PM
at St Luke's Lutheran Church
Corner of Scammel and 4th St*

*Presenter: **Dr. Brent Bailey***

Brent will provide the sorbet. Bring your own food to share, place settings, and questions.

Going to Bat for the Indiana Bat!

Thursday, February 10, 7:00 PM

Room 124, Thomas Hall

Marietta College

*Presenters: **Lynda Andrews & Ken Arbogast***

Lynda Andrews, U.S. Forest Service Wildlife Biologist, will provide the natural history of the Indiana bat and how this endangered species was found on the Wayne National Forest. Ken Arbogast, Public Relations Officer, will explain the effect on forest management of having such an important resident species.

Amphibian Arrival

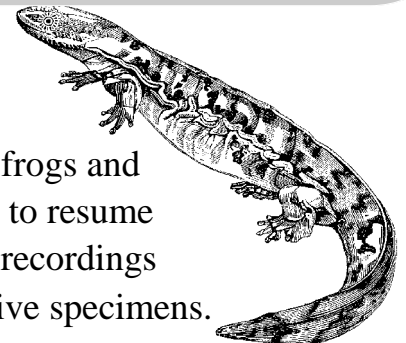
Thursday, March 9, 7:00 PM

Room 124 Thomas Hall

Marietta College

*Presenter: **Lynn Barnhart***

Did you know that salamanders, frogs and toads are among the first animals to resume activity in the spring? Come hear recordings of their sounds, and see slides and live specimens.





Bird Feeder Forum! The National Bird-Feeder Society is a great resource for authoritative information and tips about bird feeding. Membership includes a subscription to their newsletter. Check out their web site for FAQs about bird feeders and information about their publication. The "Be for Birds" logo is the winner of a national search sponsored by the NBFS to help raise awareness about the value of backyard feeding. It is a public domain logo that can be used in printed materials, advertising, or by a business establishment to show support for this growing hobby.

You can find their site at <http://www.birdfeeder.org/index.html>



The BookWorm

A Recent Acquisition on Natural History at the Washington County Public Library

Dunn, Erica H. & Diane L. Tessaglia-Hymes. **Birds at your feeder; a guide to feeding habits, behavior, distribution, and abundance** W. W. Norton & Co.. 1999. Based on years of study and surveys from Project Feeder Watch. A 'citizen science' program, this book offers more information on feeding habits of North American birds than we have ever had before. Here we learn what species frequent feeders in different parts of North America, how often these species visit feeders, and what they prefer to eat. Included are charts, maps and illustrations that tell how to successfully attract birds along with interesting natural history and biological information on many species.

It's Maple Syrup Making Season

Pure maple syrup is made by concentrating the slightly sweet sap of the sugar maple tree. The basics needed for making maple syrup therefore are some sugar maple trees and a method of concentrating the sap into syrup. There is no set time when a sugarmaker must tap his trees. He must be aware of the clues of nature to tell him when the time is right. Mostly, the sugarmaker is waiting for the arrival of the time of year known as "sugar weather," when the nights are below freezing and the days are mild.

Sap flow requires freezing nights and warm (but not hot) days. These must alternate and be in long-enough series to

allow the sap to move in the trees. Prolonged periods of either below freezing temperatures or days without freezing nights will stop the sap flow. The maple tree must be at least 10 inches in diameter and in good health before it can be tapped. It usually takes about forty years before a tree will reach tappable size. The hole is usually placed about waist high on the tree, and not near previous tapholes. Larger trees may take as many as three or four taps, but only if they are healthy.

The length of the sugaring season is totally dependent upon the weather. It may last only a few weeks, or as long as six or eight weeks. As the days become increasingly warmer, and the nights rarely get below freezing, the buds on the branches of the maple trees begin to swell, marking the end of the season.

Throughout the 4-6 week sugar season, each tap hole will yield approximately ten gallons of sap. These amount varies greatly from year to year, and depends upon the length of the season, the sweetness of the sap, and many complex conditions of nature, such as weather conditions, soil, tree genetics, and tree health.

Tapping involves drilling holes about 3 inches deep into the wood which carries the sap. A metal or wooden spout or "spile" is tapped snugly into the hole, and a bucket is hung from a hook on the spout.

Maple sap, as it comes from the tree, is a clear, slightly sweet liquid. The sugar content ranges from one to four percent. Sweeter sap is favored because less water will have to be evaporated to make maple syrup. The sap must be evaporated as soon as possible because the freshest sap makes the best quality syrup. **See Syrup, pg 7**



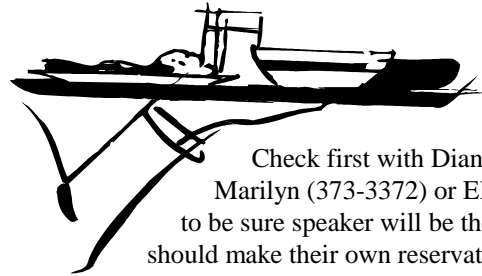
January 2000

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Remember to clean bird feeders on a regular basis to prevent the spread of avian diseases.						1 ☘
2 ☘	3	4 Quadrantid Meteor Shower Peaks	5	6 Δ	7	8
9 Leaves Gone, But Tree Roots Still Active	10	11	12	13 MNHS Meeting	14 E	15 ☘
16 ☘	17 In Mild Winter Skunk Cabbage Will Come To Flower	18	19	20 Midnight Total Lunar Eclipse	21	22 Squirrels Begin Breeding
23 Keep Unfrozen Water In Bird Baths	24	25	26	27	28 X	29 ☘
30 ☘	31	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>There is still time to participate in the 1999-2000 Bird Feeder Watch. If you want to participate, contact Ava Bradley (373-5790) or Bird Watcher's Digest (373-5790).</p> </div>				

March 2000

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
			Song Sparrows Begin Spring Nesting Bluebirds Are Inspecting Nesting Sites			
5 Δ	6	7	8	9 MNHS Meeting	10	11 ☘
Male Robins Defending Territories Watch For Paired Red-Tailed Hawks Near Large Stick nests						
12 ☘	13 E	14 Phoebes Back!	15	16	17	18
Red Fox Pups Are Born Around This Time A Warm Spell May Cause Mourning Doves To Begin Laying Eggs						
19 A	20 3:00 AM Spring begins	21	22	23	24	25
Plan Your Garden -- Order Your Seeds						
26	27 X	28	29	30	31	

You can have
Dinner with the speakers
5:00 at the Levee House



Check first with Diane (373-8031), Marilyn (373-3372) or Elsa (373-5285) to be sure speaker will be there. Members should make their own reservations.

February 2000

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5 Δ
			Groundhog Day			
6	7	8	9	10 MNHS Meeting	11 Thomas A. Edison Birthday (1847)	12 ☘
Keep Bird Feeders Stocked		Grapefruit A Great Source Of Winter Vitamin C				E
13 ☘	14 Valentine's Day	15	16	17	18	19 A
Watch for Red Winged Blackbirds			Woodcocks Should Be Returning			
20	21	22	23	24	25	26 ☘
Mourning Cloak Butterflies In Woods On Warm Days		Clean Out Bluebird Boxes				X
27 ☘	28	29 LEAP DAY!	Bird Silhouette Indicates Bird Feeder Watch days			
Hear Any Spring Peepers?						

Total Lunar Eclipse On January 20!

This is the world's first total lunar eclipse since 1997. The eclipse occurs as the moon passes through the umbra (the dark central core) of the Earth's shadow. The color of the moon while it is in the shadow varies from eclipse to eclipse. The Earth's shadow often projects a deep reddish-orange color onto the moon. This results from sunlight that passes through the Earth's atmosphere and is bent into the shadow and onto the moon.



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Insect Winters by David McShaffrey , Dept of Biology, Marietta College

"... had just settled down for a long winter's nap."

As winter snows fall, many of us revel in the delights of the winter season. Crisp days, bright sunshine on the snow, the brown fields and muddy roadsides cloaked in white. For some, another welcome aspect of winter is the absence of insects. Gone are annoying gnats, biting mosquitoes, and deafening cicadas. But is the winter as devoid of insect life as it first appears? Where do all those insects go, anyway? Like anything in nature, the answer is more complex than it first appears.

The frosts of autumn take an ever-increasing toll on insect life. As the leaves fall, more and more insects are exposed to each successive frost. While many insects have some ability to survive a frost or two, at some point the weather gets too cold for too long a time for them to survive. Whether they die directly of the cold, or whether the cold simply slows them down enough to make them easy prey, many insects die as the cold weather moves south each fall.

While the frost kills many adult insects, it doesn't affect all members of the species. For even as the adults succumb to the cold, the eggs that they laid survive. An insect egg is a remarkable device, arguably the single innovation that allowed insects to dominate the land while other insect relatives like the crustaceans were confined largely to aquatic habitats. The insect egg does not require much water. Inside, the developing embryo gets along by recycling its water efficiently, and by using very little of it to dispose of metabolic wastes. Crab and crayfish eggs, on the other hand, require water to flush away these wastes.

Partly because there is so little water in the insect egg, it is more resistant to extremes of heat and cold. And, the water inside the cells of an insect's egg is teeming with salts and sugars and other compounds which lower the freezing point below that of normal water. This lowered freezing point, combined with the small amount of water in the egg, acts to protect the egg from damage during cold temperatures. Even more remarkable is the phenomenon of diapause. Diapause is a resting state that many insect eggs enter during unfavorable conditions. Drought or cold are both conditions that bring on diapause; during diapause development is suspended and metabolism slows to almost nothing. With few resources being used, the egg can wait for the arrival of more moderate conditions. Often, in fact, it is the arrival of warm temperatures or rains which signal an egg to break diapause and resume development. Like some plant seeds, there are some insect eggs which will not develop normally unless they are exposed to a stress, like cold, that initiates diapause.

As you walk through a forest in the winter, therefore,

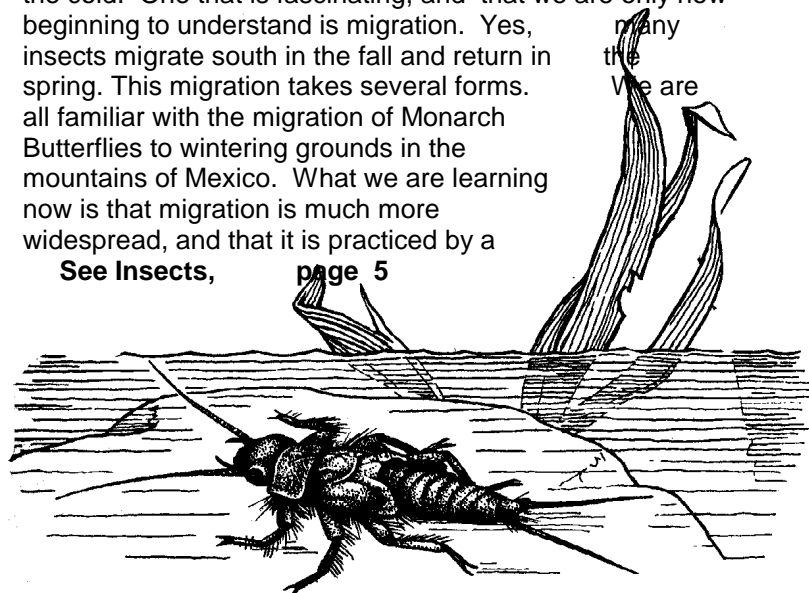
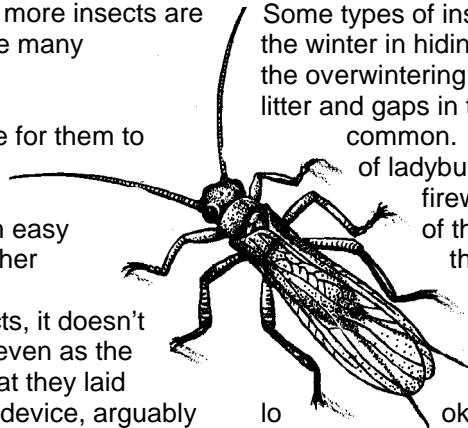
much of the insect population is waiting for spring in the form of eggs. Eggs are laid under bark, attached to twigs, scattered in the leaf litter or in the soil – many species place their future in the eggs that wait through the winter.

Other species, however, take the opposite approach. Many adult insects seek out hiding places each fall, hoping that they can survive the cold of winter. These adults enter their own form of diapause or torpor. Their metabolic rates slow to a crawl; some species may secrete sugars or other chemicals into their blood and tissues to act as antifreeze. Some types of insects have immature forms that wait out the winter in hiding; larvae and pupae of some species are the overwintering stage. The hiding places vary, but leaf litter and gaps in the bark of trees are among the more common. Anyone who has been blessed by a horde of ladybugs in the house, or who has allowed firewood to warm up inside is no doubt aware of this overwintering strategy. In the case of the ladybugs, the crevices of a clapboard house replace the crevices in the bark.

Many of these hiding insects are found over the course of the winter. Birds relentlessly probe the bark, looking for those few insects that haven't found a deep enough crevice in which to hide. Other birds, as well as mice and voles, seek out insects lying dormant in the leaf litter. By spring, many of the insects will have succumbed to predation, but enough of each species will survive. The tremendous fecundity of insects insures that even if only a few make it through the winter there will still be a bumper crop by the next fall.

While most of our insects sleep through the winter in one life stage or another, there are other ways to cope with the cold. One that is fascinating, and that we are only now beginning to understand is migration. Yes, many insects migrate south in the fall and return in the spring. This migration takes several forms. We are all familiar with the migration of Monarch Butterflies to wintering grounds in the mountains of Mexico. What we are learning now is that migration is much more widespread, and that it is practiced by a

See Insects, page 5



Insects, con't.

wide variety of insects. Let's look at two examples.

We have known for some time that the Green Darner dragonflies are migrants. Swarms of them have been seen heading north on storm fronts. Each spring, as storm fronts boil up out of the southwest and move to the northeastern United States, these large, strong-flying dragonflies come along for the ride. They reach northern ponds earlier than the local nymphs are ready to emerge, and immediately begin to feed, mate, and lay eggs to augment the resident population. What we are just now beginning to realize is that many other species migrate as well, and that these species migrate south in the fall as well. In the fall of 1999 some dragonfly experts went to Mexico, where each fall millions of hawks and other raptors funnel through a narrow band along the coast in their own migration, which was itself only discovered recently. The entomologists were able to document the simultaneous movement of huge swarms of dragonflies as well. Incidentally, many of the raptors feed on the dragonflies en route, making the dragonflies a portable food source for the birds. With the help of the Internet, in the past two years Odonatologists studying dragonflies have documented many such examples of migration among numerous species of dragonflies. If you thought that bird migration was amazing and marveled at how birds found their way, how much more amazing is dragonfly migration?

Well, don't stop marveling yet. Our second example is the Potato Leafhopper, a tiny greenish insect all of a few millimeters long. It turns out that this tiny insect also migrates hundreds of miles on storm fronts each spring. Unlike the dragonflies, which leave members of their kind behind in the relative warmth of ponds each fall even as the adults fly south, it appears that the Potato Leafhoppers that plague potato farmers in the north each year are the exclusive product of the spring migration – no leafhoppers overwinter in the cold north.

Our final strategy for overwintering is perhaps the most obvious, least likely, and most seldom contemplated. Many insects, it turns out, are active throughout the winter. For some species, it is their prime growing season.

Insects that can seek out a relatively warm habitat are able to maintain activity throughout the winter. There are several places where this can occur.

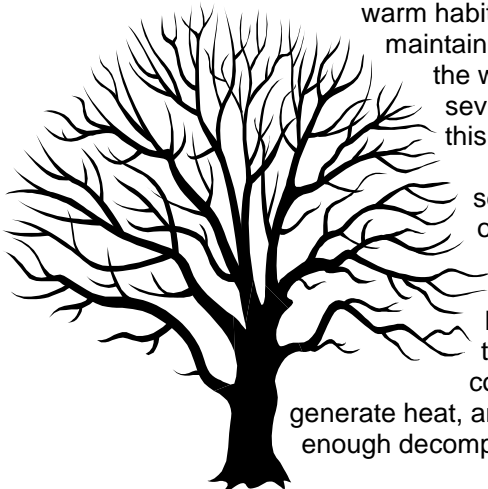
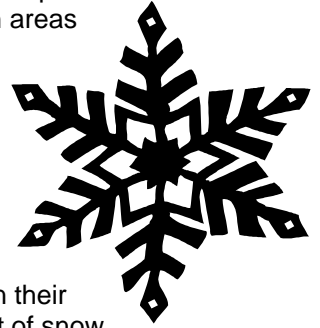
You may have seen steam coming off a compost pile in the middle of the winter. The bacteria and fungi that break down the compost also generate heat, and where there are enough decomposers and enough

insulation (in the form of the compost itself), temperatures in certain areas can be downright toasty. In this mild environment, many insect decomposers thrive. While constructed compost piles are a rarity in nature, deep leaf piles and large rotting logs are not, and these habitats can be warm enough for insects to maintain their activity levels. A thick blanket of snow can add to the insulation; the snow and leaves trap the warmth of the ground. With a thick layer of leaves covered by snow, the ground in a forest might not freeze at all. Life can proceed, slowly, under these conditions – and those leaves are a great food source.

Similar things happen under the water. Streams and ponds rarely freeze completely, and where there is liquid water life can proceed. Again, the leaves falling into the stream each autumn provide a rich food source, and many aquatic insects bulk up over the winter as the combination of ample food and a cold-slowed metabolism conspire to add calories faster than they are burned – a phenomenon many of us are all too aware of after the Christmas holidays. Even predaceous species like the Green Darner nymphs are able to find a meal under the ice of a pond in the winter.

One remarkable insect even spends the winter like many of us do – cuddled up inside a warm building. Most wasp species survive the winter in the form of scattered, solitary, fertilized queens hiding under the bark of trees. In the spring these queens found colonies, which grow over the summer, fledge new queens that mate and hide even as the colonies that spawned them disintegrate. The honeybee, however, has a different plan. Its hive is protected from the elements, and well-stocked with honey. As winter comes, the honeybees cluster in the hive in a great, writhing mass. Stoked by the honey, they shiver their wing muscles to produce warmth. While the heat generated by an individual worker is negligible, the heat generated by a swarm is not, and the temperature at the center of the cluster may approach

human body temperature. As spring arrives, the honeybee colony is quick to send out workers to restock the hive. Because many of them come through the winter, honeybees are one of the most common pollinators early in the spring. With so many robins hanging around at bird feeders through the winter, perhaps it is the honeybee that should be thought of as the harbinger of spring.



Winter Creeper: Raider That Never Rests by Marilyn Ortt

Many of the invasive non-native plants are quite apparent when they leaf out ahead of the natives in the early spring and remain green long after the natives have lost their leaves in the fall. Being able to photosynthesize an extra month or two before and after the regular growing season is an advantage right off the top.

Winter creeper is different because it is evergreen year-round and probably can take advantage of mild weather all winter long to capture the energy of the sun for use in those efficient leaf-factories.

Winter creeper or Climbing Euonymus (*Euonymus fortunei*) is a woody vine that roots frequently as it grows over the surface of the ground periodically sending up short stems. Aerial rootlets along its stem enable it to climb over rocks or up tree trunks. The oval, thick leaves are opposite each other along the stem and the lighter center-vein is usually apparent. There are small greenish flowers in clusters during spring which are followed by smooth, globose fruits in an orange capsule in June and July. Birds are very efficient at spreading the seed into other areas.

This species is a close relative of the commonly-planted burning bush (*Euonymus alatus*), also from Asia, which also has a tendency to spread into wooded areas and the wahoo (*Euonymus atropurpureus*) which is native to southeast Ohio and is usually found along the edge of a woods.

Winter creeper was introduced from Asia as a ground cover. Much to my chagrin, I ordered it for that very purpose in about 1960 to plant on a steep hillside that seemed vulnerable to erosion. Although I regret the time I have had to spend pulling it out (and will have to spend in the future), it has been interesting to see how

unobtrusively it can spread until all at once an area is carpeted and the wildflowers have been eliminated. There may only be a few sprigs extending above the leaf litter but when the litter is pulled back it's all winter creeper stems growing horizontally in every direction.

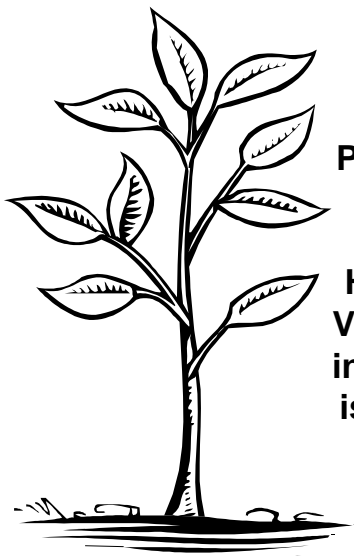
Winter creeper can spread from a homesite into surrounding woodlands successfully replacing most of the herbaceous species on the ground and creating a large shaggy mass of layered vines up to 20 feet high on tree trunks. Such growth destroys lichen habitat on tree trunks and makes it impossible for nuthatches to do their upside-down search for food. These are only two examples of disruption of habitat use.

Winter creeper will readily spread into several types of forest and also invades natural openings and relatively undisturbed forests. Since it is tolerant of most soil moisture conditions (except for saturated situations), and light conditions from full sun to heavy shade, it may be encountered about anywhere.

Euonymus may mean "good plant" but the name was not given in reference to this species in southeast Ohio. If you find winter creeper growing on your land, my recommendation is to pull it as frequently as necessary to try to eradicate it. Even if you feel you can keep it confined, the next owner may not be as knowledgeable or as committed. And even if confined, the plant will be a self-renewing reservoir of seeds for birds and small mammals to disperse. If we consider invasive species to be a form of pollution, what is the difference between allowing such an invasive species to grow and spread and allowing a vehicle to leak oil on the land?

In Remembrance of Departed Friends

Please visit the tree planted by the Marietta Natural History Society in Sacra Via Park in memory of some recently deceased members, Howard Beale, Bob Taylor, Joe Thorniley and Bud Voelker. The tree is a shingle oak, and was planted in the western end of the park (west of Front St.). It is in an area that will be part of an oak grove in the new arboretum to be dedicated this April. If you wish to know its exact location, please contact Marilyn Ortt or Steve Spilatro.

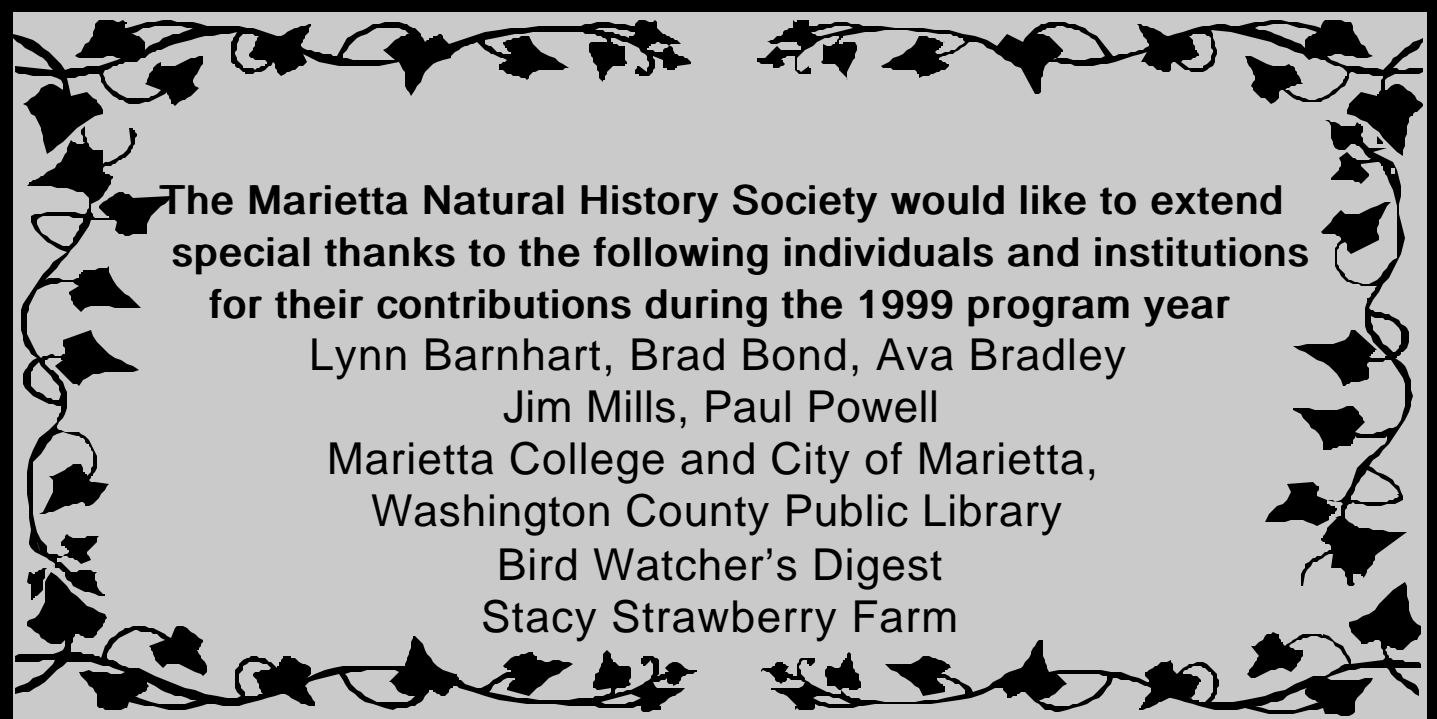


Syrup, cont.

Maple syrup is traditionally made in a building called a "sugarhouse" - the name of the building comes from the time when most sap was actually turned into sugar. Evaporators are made up of one or more flat pans which sit on an "arch," a type of firebox.

The basic design of maple syrup evaporators has changed little over the years. An evaporator pan is divided into partitions, so that the sap is continuously flowing through the pan. Fresh sap enters at the back of the pan, where a float valve keeps the sap about an inch deep. As the water is boiled off, two things happen: First, the liquid becomes sweeter, and begins to move towards the front of the pan, traveling through the partitions. Secondly, more fresh sap is allowed into the rear of the pan. The liquid is becoming sweeter as it moves towards the front of the pan, and the float valve in the rear is always allowing more sap to be added to keep the level about an inch deep.

It takes about forty gallons of this slightly sweet sap, boiled down, to make one gallon of pure maple syrup. Coming from the tree, maple sap is approximately 98% water and 2% sugar. When the syrup is finished, it is only 33% water and 67% sugar. After filtering, the syrup is bottled and is ready for sale or ready for a fresh pile of warm pancakes. [Editor's note: Special thanks to the Massachusetts Maple Producers Association for allowing us to reprint information and graphics. Check out their informative web site at www.massmaple.org.]



The Marietta Natural History Society would like to extend special thanks to the following individuals and institutions for their contributions during the 1999 program year

Lynn Barnhart, Brad Bond, Ava Bradley
Jim Mills, Paul Powell
Marietta College and City of Marietta,
Washington County Public Library
Bird Watcher's Digest
Stacy Strawberry Farm

Suggestions, Comments
or Contributions for the
MNHS Newsletter?
Send them to the editor:
625 5th St
Marietta, OH 45750
374-8778
spilatr@marietta.edu



Don't forget that videos of many
previous programs are available
at the Washington County Public
Library

Are there any programs you would like to see repeated? Do you have ideas for new ones? If so, let us know. Contact any member

Invite a Friend to Join the Marietta Natural History Society

Wood Thrush — Individual \$15
River Otter — Family \$25
Monarch — Friend \$50
Why not give a gift membership?

Mail check to address given below

Benefits of Membership

- └ Monthly programs
- └ Field trips
- └ Quarterly newsletter
- └ Great educational experiences for kids and adults
- └ Conservancy Projects



The MNHS Vision

- i To foster awareness of and sensitivity to our environment and its biodiversity
- i To provide a place where people with these interests can gather for information and activity
- i To create a presence in our community representing these ideas



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