Public Is Invited

Marietta Natural History Society

Winter 2001 Newsletter

Birds: Your Questions, My Answers

Thursday, January 11, 6:00 PM
St. Lukes Lutheran Church
4th and Scammel Sts.
Presenter: **Bill Thomson, III**

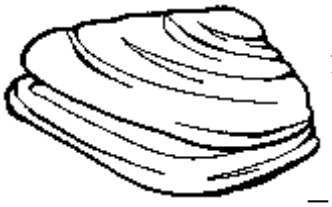
Winter time is soup time! MNHS will provide soup and crackers, and Bill Thompson, III, Editor of Birdwatchers' Digest and author of *Bird Watching for Dummies*, will provide answers to your birdwatching questions.

If you would like a sandwich with your soup, bring it with you. If you are a passionate potlucker, bring some dessert to share.

Lure of the Mussel

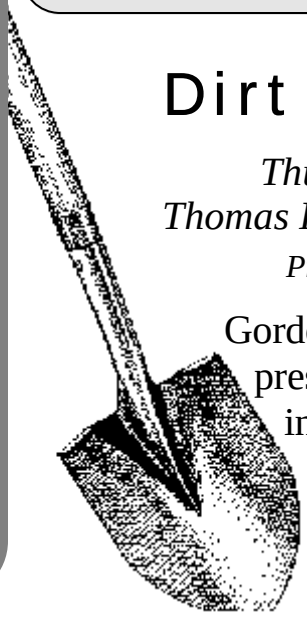
Thursday, February 8,
7:00 PM
Thomas Hall, Room 124
Marietta College
Presenter: **Tom Watters**

Tom Watters, Curator at the Museum of Natural Diversity, will update us on the Muskingum River mussels and describe a fascinating bit of mussel natural history – how to hitch a ride on a fish.



i Special Event: A Bird Trip to The Wilds **i**

Saturday, February 10 AM – 3:30PM.
Meet at Hermann Fine Arts Center parking lot.
Bob Scott Placier will lead us to see rough-legged hawks, short-eared owls, meadowlarks, horned larks and smaller grassland birds not commonly seen. A golden eagle is a real



Dirt Theatre – Act II

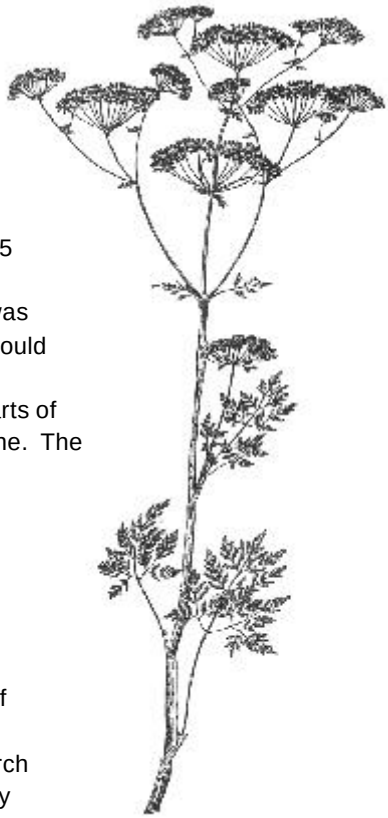
Thursday, March 8, 7:00PM
Thomas Hall, Room 124 Marietta College
Presenter: **Gordon Gilmore**

Gordon, a local USDA Soil Scientist, presented the first act from a soil pit in Oak Grove on a MNHS field trip in 1999. Don't miss the second act – you will never refer to 'just dirt' again.

Web Threads

Flaky Fascination. Created by physicist Kenneth Libbrecht of the California Institute of Technology, *Snow Crystals* is the everything-you-ever-wanted-to-know web site for snowflakes. The site presents information about these bits of winter from the general (what are the different types of snowflakes) to technical (the physics of snowflake formation) and practical (a user's guide to snowflake photography). Summer or winter, you can "sled the web " at **www.its.caltech.edu/~atomic/snowcrytals.**

Poison Hemlock – *"Bad to the Bud"* *by Marilyn Ortt*



Another member of the Aggressive, Alien Plant Species Hall of Infamy is poison hemlock. Plants are apparent now because they often provide the only green in many disturbed areas during winter. The foliage is finely dissected like carrot tops and could be easily mistaken at this time of year. Both are members of the Umbelliferae Family – having clusters of small flowers in many flat-topped clusters or umbels.

Conium maculatum is a biennial that makes a rosette in early fall after late summer germination and photosynthesizes on mild days even through the winter. The resulting starches are stored in the taproot ready to give it the boost in spring that allows it to outgrow many native species. In late spring the white umbels appear on purple-spotted stems up to 9 feet tall although 5 feet is more common.

Although our native hemlock trees are sometimes blamed, this is the real poison hemlock that was given to Socrates. One has only to smell the plant to realize having to drink anything made from it would qualify as cruel and inhuman punishment.

People sometimes mistake the leaves for parsley or the seeds for anise with fatal results. All parts of the plant contain a group of closely related poisonous alkaloids that are structurally related to nicotine. The first effect is stimulation and then severe depression of the central nervous system leading to death from respiratory paralysis.

Only about 25 years ago there were only two known populations in the county but now poison hemlock can be found in many disturbed areas. Since it germinates at about the time herbicide is used along highways and railroads, these barren sites provide good habitat and a corridor along which this European immigrant can travel.

The railroad right-of-way next to State Route 7 toward Belpre from the Eramet plant is a good place to see this species. The green rosettes are apparent now but in May and June the masses of plants will be difficult to miss.

Since poison hemlock grows in habitat where milkweed and butterfly weed formerly grew, monarch butterflies have significantly fewer plants on which to lay their eggs. Other invertebrates are similarly affected especially those with an obligate food plant.

Although we may not be able to eradicate poison hemlock, we can try to make a place in our own gardens for monarch caterpillar food. A good New Year's resolution would be to plant some milkweeds.

Happy IBOY!

That is, Happy International Biodiversity Observation Year! 2001-2002 is a year to focus global attention on biodiversity and the sciences that explore it. The primary goals are to:

- promote and integrate biodiversity science and
- explain the importance of biodiversity and biodiversity research.

An ambitious mix of research, education and communication projects that address questions such as *What do we have biodiversity for and where is it? How is biodiversity changing? What goods and services does biodiversity provide? How can we conserve biodiversity?* For more information check out the IBOY webpage at **www.nrel.colostate.edu/BOY**.

January 2001

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 New Year's Day	2	3 E	4 Earth At Closest To Sun, 91.4 Mil Miles	5	6
7	8	9	10 A	11 MNHS Meeting	12	13
Cold Weather Allows For Healthy Winter Tree Dormancy						
14	15 Bald Eagles Begin Nesting	16	17 X	18	19	20
Crushed Limestone Environmetally Better Deicer Than Salt						
21	22	23	24 Δ	25	26	27
Help: Newsletter Editor Desperate For Ideas!						
28	29	30	31	New millennium begins January 1, 2001		

Greatest Show On Earth

Be alert for a display of northern lights, or aurora borealis. Massive ejections of charged particles from the sun are predicted during the next 1 ½ years which could lead to a display of curtains and lumps of green and red light, even visible in Ohio. Look north -- the display may last anywhere from 20 minutes to 4 hours.

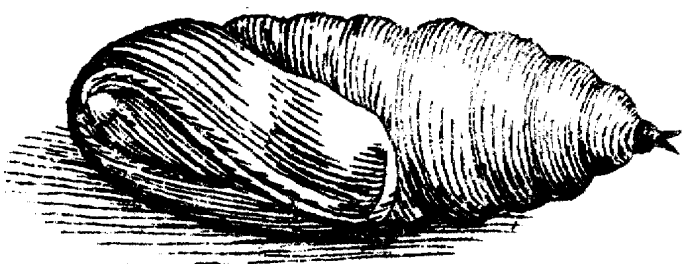
To improve your chances of seeing this phenomenon , Tom Burns, Director of Perkins Observatory in Delaware, recommends checking the space weather forecast at **www.spaceweather.com**. Satellites are constantly checking the density of the solar wind near earth. The key figure is the number of protons per cubic centimeter. If this density is hovering around 1 or 2, don't bother. At 10 or higher with a clear, dark sky, be prepared for a great show.

February 2001

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Bird Silhouette Indicates Bird Feeder Watch Days 				1 E	2 Ground-hog Day	3
4	5	6	7	8 MNHS Meeting A	9	10
Keep Bird Feeders Stocked						
11	12 Lincoln's Birthday	13	14	15 X	16	17
Listen for Cardinal "What Cheer" calls						
18	19	20	21	22	23 Δ	24
Early Woodcock Migrants Begin To Arrive						
25	26 Peepers Peeping Yet?	27	28			

March 2001

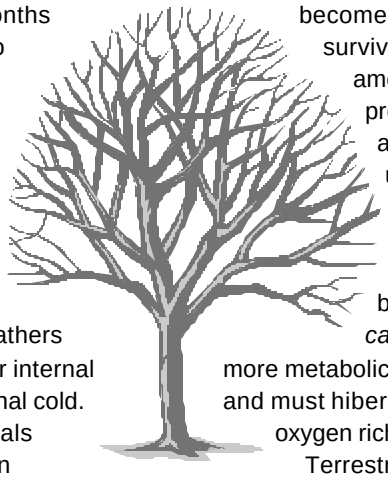
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3 E
4	5	6	7	8 MNHS Meeting	9	10 A
Has Your Compost Thawed?				Song Sparrows Begin nesting		
11	12	13	14	15	16	17 X
	Robins Are Defending Nesting Territories					
18	19	20	21	22	23	24
	Pussy Willows Beginning To Bud Out	Migrating BlueBirds Arriving Daily				
25 Δ	26	27	28	29	30	31
	Warm Early Spring Rains Awaken Sleeping Animals			Time To Till?		



Frozen to the bone . . . but still kick'n!

By: Steven R. Spilatro

Take away flame and clothing and the human species is ill-equipped to survive the chill of winter. Yet, with none of these advantages many other species endure months of freezing temperature to reemerge unscathed in the spring. Organisms deploy a variety of maneuvers to survive winter. Mammals and birds are endothermic (warm-blooded), and with insulating fur and feathers can retain enough of their internal heat to ward off the external cold. Some endothermic animals remain active all winter, in constant search of enough food to energize their internal body furnace. Some mammals resort to hibernation, a period of inactivity with reduced metabolic activity and body temperature, as a means to minimize their food requirement during the spartan winter months.



Hibernation is also the strategy of most exothermic (cold-blooded) organisms. Exothermic organisms, which includes reptiles, amphibians, and insects, cannot regulate their body temperature internally, but rather must absorb heat radiating from the sun and their surrounding environment. With onset of cold weather, movements become more sluggish and activity becomes increasing more difficult for these organisms. Before becoming too easy a target for predators, they find a secluded recess and enter hibernation.

Aquatic turtles burrow into the mud at the bottom of a stream or pond. There, snug and secure (if not warm), a hibernating turtle's metabolism will become so low that it can survive on the minuscule amount of oxygen that is present. Aquatic frogs also usually hibernate under water. However, some frogs, such as the leopard frog (*Rana pipiens*) and American bullfrog (*Rana catesbeiana*), remain more metabolically active than turtles and must hibernate in the more oxygen rich water.

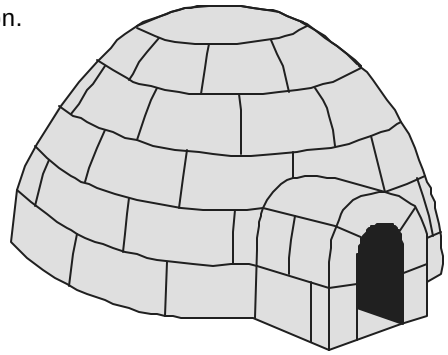
Terrestrial frogs hibernate on land. The American toad (*Bufo americanus*) digs its own burrow, or 'hibernacula', whereas species such as the wood frog (*Rana sylvatica*) and spring peeper (*Hyla crucifer*) seek crevices in rocks and logs, or merely bury themselves under the leaf litter. These terrestrial sleepers often bear the full brunt of wintry weather and appear to freeze solid. With the arrival of warmer weather, the frogs begin to thaw, cellular metabolism picks up and their heart, lungs and other organs resume activity.

But while freezing means death for some organisms, how do these critters (and others) escape winter's icy scythe? While cryogenic storage of humans remains in the realm of science fiction, nature long ago solved the problem. What do these organisms know that we don't!?

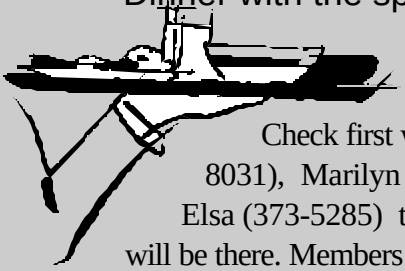
The peril of freezing lies in the formation of ice crystals that disrupt the structure of cells and organs. Like a bottle of water left in the freezer, cells burst as ice crystals form and grow in freezing tissues. When thawed, the result is a biological mush, incapable of resuming life processes.

Many organisms tolerate freezing by using biological "antifreeze" — substances that allow water to solidify without formation of ice crystals. Some common biological antifreeze molecules include sugars and special proteins that accumulate within the cells as the surrounding environment cools. A high concentration of glucose in frogs and sucrose or other sugars in plant seeds prevent ice crystal formation, causing the water to assume a non-crystalline, glass-like form as it solidifies.

Antifreeze proteins are found in a wide variety of species, including antarctic fish, plants, insects, and fungi. These proteins function differently than conventional antifreezes, such as salt and ethylene glycol (the common automotive antifreeze). When such substances are mixed with water the freezing point is lowered, allowing the solution to remain liquid at subfreezing temperatures. Antifreeze proteins do not lower the freezing point, but appear to prevent tiny ice crystals from growing after they form. The antifreeze proteins thereby limit ice formation to crystals too small to cause damage.



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.

Bird Feeder Watch Time

There is still plenty of time to participate in this winter's bird feeder watch. Its very easy, and a great activity for kids and adults. Every other weekend record the types and numbers of birds that frequent your feeders. A handy form is available from the MNHS (contact Ava Bradley at 373-5790). You don't have to make observations every counting weekend for your observations to still be valuable. Any good bird identification book will make it easy for you to learn to identify the birds that are common in your yard.

Keep your bird feeders clean

Included with this newsletter is a copy of *Tips for a Healthy Feeding Station*, provided by the Bird Watchers Digest. It is a good reminder of the importance of keeping your bird feeders clean.

One valuable outcome of a national bird feeder watch was the discovery of a dramatic decline in house finch populations in the eastern U.S. since the winter of 1993 — 1994. The data was obtained from volunteer participants in Project FeederWatch (sponsored by Cornell Laboratory of Ornithology and the National Audubon Society), and reflects the spread of mycoplasmal conjunctivitis. This disease doesn't affect humans but is similar to human conjunctivitis in causing swollen, crusty eyes. However, the avian disease is fatal to birds, and also affects goldfinches and purple finches.

The pathogen can be spread on objects that become contaminated by an infected bird. Bird feeders, thus, are of particular concern since they can quickly spread the disease to many birds. Other pathogens of birds, such as *Salmonella*, also can be spread on bird feeders.

So [illegible]elp assure that your feeders enhance rather [illegible]han eradicate local bird populations. Birds, [illegible]like people, prefer a clean plate.

Some Bird Feeder Q and A

What is the effect of bird feeders on bird feeding behavior? While there remains a great need for further study of bird feeding behaviors, some recent insights are presented below. (see *The Winter Banquet* by Stephen Kress, January-February, 2000).

Do bird feeders affect species survival?

A controlled, three year study of two populations of black-capped chickadees in Wisconsin suggests that there isn't a major impact on survival during a normal (mild) winter, but that survival rates were increased during longer, more severe winters.

Does artificial feeding of birds make them less capable of surviving on their own?

Apparently not. As part of the Wisconsin project, bird feeders were removed from a woodland site where chickadees had been fed over a 25 year period. The feeders were estimated to provide 21% of the bird's daily energy requirement. Survival in this population did not differ significantly from that of chickadees in another site that had not been fed.

Does feeding increase nest predation?

Feeders also attract and support populations of blue jays, grackles, European starlings and the parasitic cowbird– species that prey upon songbird species. An analysis of the North American Breeding Bird Surveys indicates, however, that populations of these species have actually declined since 1966. Populations of a variety of common backyard species increased during the same time period, suggesting that availability of bird feeders was not indirectly diminishing populations of these species.

Does feeding birds affect migration?

Since migration is an instinctive behavior triggered by environmental cues, migratory birds will begin their travels whether the bird feeder is full or not.

If I forget to fill my feeder, will the birds suffer?

It is unlikely that birds in your yard are entirely dependent upon your feeder. Most birds use feeders to merely supplement their natural diet, and they are well aware of the locations of other feeders in the neighborhood.

Suggestions, Comments or Contributions for the MNHS Newsletter? Send them to the Editor:

625 5th St Marietta, OH 45750

374-8778 spilatrs@marietta.edu

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

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

Marietta Natural History Society
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