

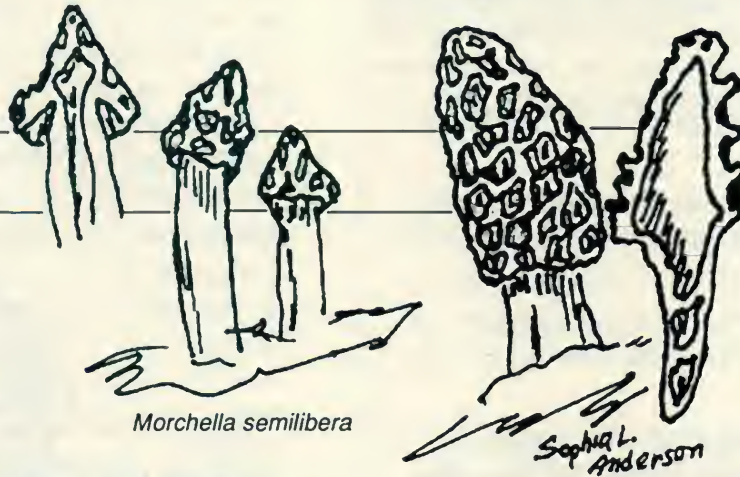
INDIANA

Native Plant and Wildflower Society

NEWS

Volume II Number 1

Spring 1995



Morchella semilibera

Morchella esculenta

Free for the Eating

Morel Mania - A Hoosier Rite Of Spring

by Dan Anderson

About the same time millions of Americans turn to their TVs and radios to hear the beginning games of the baseball season (if there is one), many thousands head out into the boonies in search of the elusive morel mushroom. Some make it a one- or two-shot deal, others begin in Kentucky or Southern Indiana and finish three or four weekends later in Michigan.

Like many other mushrooms, morels need the right combination of soil moisture and temperature to form the fruiting bodies. In Central Indiana, few if any are found before April 15th, and almost none after the first week in May. Temperatures should be no lower than the middle 50s at night, and there should be enough rain that the soil is damp and not dry. Some years provide a generous harvest; last year, at least for us, was a bummer, not only for morels, but for many other kinds of mushrooms as well.

There are three major types of morels to be found in our area. *Morchella esculenta*, the yellow morel, is the most substantial and one of the easier ones to spot among last fall's leaves. Another common one, the gray morel, is usually small, about 3-4 inches tall, and is often hidden in and under leaves. The gray is probably a subspecies of *Morchella elata*, the black morel, which seems to be both larger and much darker in Northern Indiana and Michigan. The third, *Morchella semilibera*, called snakehead or other names which I am not at liberty to mention, features a tall hollow stipe (stalk) on which is perched a cap which appears to be several sizes too small.

At the same time the morels are appearing, a number of somewhat similar-appearing species can be found. The most common of these is *Gyromitra esculenta*, locally called false

morel or elephant's ear. The mushroom handbooks give this one mixed reviews - some claiming edibility, some considering it poisonous, while a number waffle by stating that it is edible after cooking to remove a water-soluble toxin. I have talked to people who state that they have eaten these mushrooms many times without ill effects; however, with mushrooms, it is best to err on the side of caution. *Helvella crispa* is somewhat saddle-shaped and subject to the same caution as the false morel. Morels can be distinguished from false morels by their regular shape, which resembles a Christmas tree light bulb with a reticulated surface. (The accompanying drawings by Sophia Anderson will help distinguish among the several species).

Free for the Eating continued on page 2

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INPAWS

Coming Events

Your program committee, under the leadership of Bill Brink, met on January 11 to plan activities for 1995. Here are the scheduled events for February through May:

Sunday, February 26:

Visit to Big Walnut preserve in Putnam County to learn how to identify trees in winter.

Saturday, March 11:

Work day at Holliday Park in Indianapolis to remove invasive Amur honeysuckle.

Sunday, March 26:

Indoor meeting at an Indianapolis location, probably in the afternoon. Subject will be a discussion on damage done by deer, and what can and has been done about it.

Saturday, April 22:

Field trip to Oil Creek Cliffs, near Tell City, to study the sandstone formations, woodlands and wildlife.

Saturday, May 13:

Trip to Dunes National Lakeshore

Sunday, May 21:

Plant Auction and Sale

Members will receive more detailed information prior to the scheduled dates on the above as well as additional field trips of an informal nature.

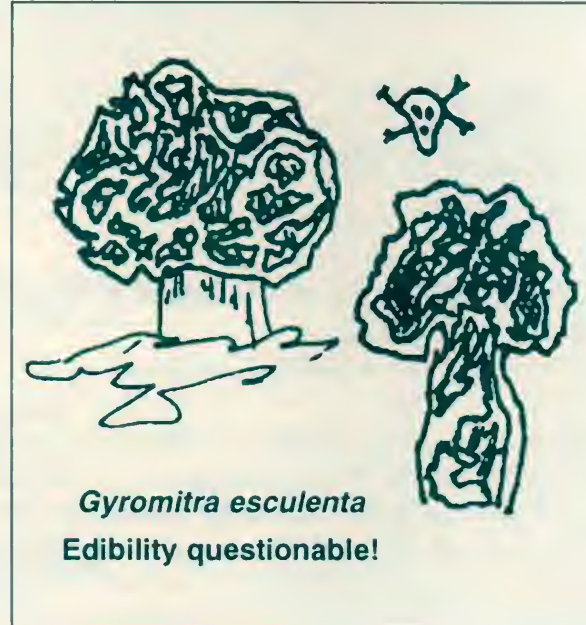
Free for the Eating continued from page 1

If you are fortunate in finding a nice mess of morels, it is best to cut them in half lengthwise and soak in salt water for 1-2 hours to help remove any resident insect life. Morels are best sautéed and served on buttered toast, or used as a garnish. Allow for shrinkage - they shrink at least 50% in each direction after cooking. They can be frozen - take the cut pieces from the salt water and parboil for about five minutes. Then drain and put into freezer bags for later use.

Happy New Year to all of you, and if you are frivolous fungus fanciers, "Fantastic Foraging!"

Dan Anderson and his wife Sophia are charter members of INPAWS who have

enjoyed a wide range of edible wild greens, mushrooms, nuts, fruits and an occasional snapping turtle or muskrat over the past thirty years.



Gyromitra esculenta
Edibility questionable!

Indiana Native Plant and Wildflower Society Newsletter

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Published quarterly by the Indiana Native Plant and Wildflower Society for members.

The Mission of the Indiana Native Plant and Wildflower Society

is to promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the values, beauty, diversity and environmental importance of indigenous vegetation.

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Submission of articles

Information for the newsletter is supplied by Society members and others interested in sharing information about Indiana native plants. Articles or drawings should be sent to the Editor, Dan Anderson, 7412 Graham Road, Indianapolis, IN 46250.

Photos: Bill Brink, Anne Wilson
Trillium flexipes: Cheryl LeBlanc
Jumping mouse tracks: Anne Wilson
Mushrooms: Sophia Anderson

President's Message

by Jeffrey Maddox

Dear Friends,

The start of the year is always a slow time for plant enthusiasts. Following our annual meeting and the Christmas party (once again graciously hosted by Carolyn and Peter Harstad) we relaxed a little, but now we're rolling into this new year. INPAWS did a lot of growing last year, and there is much to do. I'm glad you're with us!

It has been almost two months since our annual meeting. Hard to believe, isn't it? People are still talking about what a good time it was. The 1995 annual meeting committee is beginning to plan now, and volunteers are needed. Please call me if you'd like to help with this effort.

The program committee and the plant rescue committee are also gearing up for the coming year. The program group is working on an exciting calendar of events with plenty of diversity. They also are considering some neat tie-ins with events of other organizations.

The Plant Rescue folks certainly had one of the more spirited discussions at the annual meeting. They have a report of their activities in this issue.

People are noticing INPAWS and asking us to get involved in all kinds of issues. I feel this is a strong sign for such a young organization. Please don't hesitate to call anyone on the executive committee to get more information on the topics or to let us know your thoughts.

INPAWS has written letters of support for native plant projects for Indy Parks and Recreation and the Hamilton County Parks Department. We have been contacted on subjects ranging from 4-H projects to Department of Transportation roadside plantings. Of course, the damage being done by the deer in our state parks is still a big issue.

INPAWS will continue to work on as many issues as we can. I look forward to working with all of you as our membership continues to grow and add strength to this society. Let's make 1995 a banner year for INPAWS!

Letters to the Editor

To the INPAWS Newsletter Editor:

Bob Frantz's article *Beauty is in the Eye of the Beholder* in the Winter '94 issue touched home in my heart. If only more people could identify with the natural beauty of our native woodlands. Thank you, Bob, for so eloquently spreading the word.

In response to Dan Anderson's call for help in making white acorns edible (again, an excellent article) here's what I learned years ago from E.J. Carr, a Kentucky Naturalist of the Year. First, to separate the meat from the hulls, place the acorns in the oven at the lowest heat setting for an hour or two, no longer. They should come apart easily then, when you break open the hull. (Save those hulls! They make a great substitute coffee when ground and roasted - really!) Place the nut meats in a blender with an equal amount of warm water and chop briefly. Drain and replace water, continue until the water is clear. I like to leave the nut meats in small pieces to be used in brownies or muffins, but you may want to turn them into a mush which can be substituted for half the flour and liquid in muffin and pancake recipes. Or, by draining the mush in a mesh bag and spreading it out to dry you can create a flour with a wonderfully nutty aroma and taste.

When gathering the acorns, save the biggest and best looking ones for presents. Given to a small child with a colorful cup containing soil and simple directions, it will be a present that will last more than a lifetime and teach more than words could ever say.

Bette Anderson, Naturalist
Falls of the Ohio State Park
Indiana Department of Natural Resources
201 W. Riverside Drive
Clarksville, IN 47129

Invasive Plant Threatens Woods

What is garlic mustard?

Garlic mustard (*Alliaria petiolata*) is a biennial herb that is rapidly spreading through the United States threatening the diversity of our native woodlands. It is believed that European settlers introduced this plant in the late 1800's as a food or medicinal herb. Since then, garlic mustard has settled in disturbed, shaded areas. Its aggressive nature allows it to replace the native wildflowers and it will soon threaten the wildlife that depend on these native plants.

Identifying garlic mustard

As the name suggests, one property of this plant is the strong odor of onion or garlic that its crushed leaves or stems emit. Since it is a biennial, it flowers during the second year of growth. Bright white flowers are present from April through June. The second year plants stand approximately 30 inches tall. The toothed leaves are heart-shaped and alternate along the stem.

Distribution of garlic mustard

This plant usually first invades along trails, roadsides, and waterways. Often garlic mustard can be seen growing in dense stands in these areas. If allowed to remain, this plant will soon overrun wooded areas.



Controlling garlic mustard

The only way to eradicate this plant is to remove it before seeds are produced. This means that action should be taken in the early spring when the plant is beginning to flower, or in the fall when many native plants are dormant. All efforts should be made to avoid harm to the native flora. In areas surrounded by native plants, cutting the plants at ground level and removing the cuttings is most effective. In areas where large, dense stands are found, an herbicide application according to manufacturer's recommendations may be used. These procedures should be repeated for 3-5 years with follow-up inspections to stop future threats.

Priority warning!

Garlic mustard is a very serious threat to the diversity of flora and wildlife found in Indiana. This plant is known to out-compete the native plants and tree saplings. The longer this problem goes unmanaged, the harder it will be to eventually control garlic mustard and the greater environmental loss to our state.

(Technical Editor's Note: Garlic mustard was not known in Indiana when Deam wrote *Flora of Indiana* in 1940. It is now invasive throughout the state.)

Adapted from a brochure developed by the Department of Biological Sciences at Butler University, Indianapolis, Indiana.

Wildflower Seed from NEWFS

The New England Wild Flower Society is offering seeds or spores of more than 175 varieties of wildflowers and ferns in their **1995 Seed and Book Catalogue**. The wide choice of seeds offered is an economical way for novice or experienced gardeners to grow native plants not usually available from nurseries. All catalogue requests (filled in the order received) must be received by March 1; seed sales close March 15.

To obtain the catalogue, send \$2.50 to

Seeds

New England Wild Flower Society, Garden in the Woods

180 Hemenway Road

Framingham MA 01701

New INPAWS Editor

Dan Anderson has accepted the position of Editor for the Indiana Native Plant and Wildflower Society Newsletter, effective with the mailing of this Spring, 1995 issue. A research engineer who retired from Mallory-Emhart in 1987, Dan has for years pursued his interest in plants, native and non-native. He and his wife, Sophia, are enthusiastic foragers and have collected edible fungi, nuts, fruits and greens for more than 25 years. He regularly writes of his culinary adventures for INPAWS newsletter.

For the past several years, he has been photographing wildflowers and mushrooms for reference purposes and has led groups on nature hikes at Holliday Park in Indianapolis and Richey Woods in Hamilton County. His latest projects include attempting to propagate several of his favorite milkweeds and orchids.

Dan has served as co-editor of this newsletter since its inception one year ago and for six years was editor of *The Ethnic Hoosier*, the bimonthly publication of the Nationalities Council of Indiana.

Contributions for future newsletters should be sent to:

Dan Anderson
7412 Graham Road
Indianapolis IN 46250
317-849-3105

As a result of change in editors, the preferred format for articles has changed slightly. Please consult the accompanying article on page 11 for additional details.

Dan replaces Christine Carlson who served as INPAWS editor from the initial organizational stages in 1993 through this current issue.



Three cheers for Chris!

*and welcome
to Dan from the
newsletter committee!*



Dogwood Alert!

Flowering dogwood trees infected with the tree-killing disease Dogwood Anthracnose were sold throughout the state last spring. Anthracnose is widespread in eastern states from Connecticut to Georgia and has, in some areas, killed 90 percent of the dogwoods. Until recently, however, reports of this disease in Indiana were limited to only a small area in North Central Indiana. An Indiana Department of Natural Resources plant pathologist supervisor discovered trees infected with the fungus while browsing in a nursery on May 23, 1994. By May 25 the DNR had ordered Kmart, Lowe's and Wal-Mart to stop sales of these trees immediately.

Many of the stores continued to sell these trees during Memorial Day weekend, waiting more than a week to stop sales, according to the DNR. Kmart now faces a \$96,000 fine for not stopping sales. Lowe's has been fined \$18,000 and Wal-Mart may have to shell out \$17,000



for non-compliance. This serious disease now threatens all native and garden dogwoods in Indiana.

The Department of Natural Resources asks that citizens inspect their dogwood trees for symptoms, including the following:

- Early symptoms are medium-large (1/4 to 1/2 inch in diameter), purple-bordered leaf spots, and scorched tan blotches that may enlarge to kill the entire leaf. Diseased leaves often hang on twigs throughout the winter.
- The disease stimulates trunk sprout production along large limbs and the main stem. This succulent tissue is very susceptible to infection. These small profuse stems do not follow the usual pattern of paired, or opposite branching.
- The fungus infects twigs and can grow down a limb and infect the main stem. Cankers, which appear as discolored sunken areas, form on the main stems and branches. They are identified by distinct margins surrounded by healthy tissue and can be detected by pulling back the loose bark.
- Flower spots or blight may develop if rainy conditions prevail during flowering.

Dogwood Alert! continued on page 12

A Successful First . . .

Report of the Annual Meeting

by Carolyn Harstad

DowElanco's impressive new facility in Indianapolis was the setting for the 1994 annual meeting of the Indiana Native Plant and Wildflower Society on Saturday, November 12, 1994. One hundred twenty five people attended the sessions which began with registration staffed by Carolyn Bryson and Katrina Vollmer. Jean Vietor and Chris Turner handled membership applications.



Registration table

Attendees were greeted by festive displays of native grasses, beautiful watercolors by Mary Rose Wampler, Jean Vietor and Janice Glimn-Lacy, stunning photographs by Tom Potter and Lee Casebere, and educational displays from the Indy Parks Department (Don Williams), the Indiana Department of Transportation (Don Bickel and Dave Sosbe), The Nature Conservancy (Jeffrey Maddox), the Indiana Department of Natural Resources and Butler University. Bill McKnight of the Indiana Academy of Science had a large table of books for sale with topics ranging from Fred and Mary Rose Wampler's *Wildflowers of Indiana* to books on butterflies and fresh-water mussels.



Carolyn Harstad, Sue Nord

Each participant received a shopping bag and bird poster from Wild Birds Unlimited, marigold seeds from Scott's Garden Center, an INPAWS notepad from Presto Print, Inc. of Columbus, a pencil from Katrina Vollmer, and several brochures.



Rolland Kontak, Neil Diboll, Bill Brink

After a welcome by President Jeffrey Maddox, Janice Glimn-Lacy spoke briefly on attracting butterflies using native plants. She displayed her extensive collection of Indiana butterflies in the main foyer. Bill Brink's slide-lecture presented a thorough guide to creating a beautiful garden with brightly colored flowers to attract hummingbirds. Both speakers distributed lists of recommended plants.

Kevin Tungesvick and Sue Nord led the panel discussion on plant rescue. The varied ideas and expertise of panel members, Sue Dillon, Mike Homoya, and John Schaut sparked a lively discussion session. Included were ideas on discovering areas destined for destruction, getting permission to dig plants, what kinds of plants to watch for and where to take the rescued plants. (Input from INPAWS members will be valuable to the plant rescue committee in the future, and interested members are invited to participate on the plant rescue committee).

Sophia Anderson, Mildred Kontak, and their committee of Dan Anderson and June Gallion, had an inviting table of pastries to accompany a welcome cup of coffee in mid-afternoon. Katrina Vollmer contributed exquisite homemade flower-shaped chocolates.



Ruth Ann Ingraham, Kevin Tungesvick

Establishing and Maintaining a Meadow or Prairie was the topic of a discussion, led by Dr. Michael Dana of Purdue University, with panel members Neil Diboll and Ellen Jacquart. They discussed the advantages of seeds vs. plants, burning vs. mowing, plants to choose, and soil preparation.

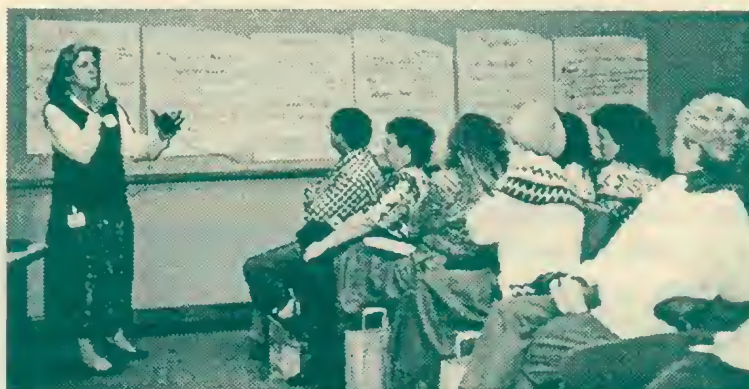
Panelists welcomed questions and discussion, and the audience was reluctant to end this interesting session!



Peter Harstad, Gil Daniels, Sue Dillon, Gisela Reibel

Session facilitator Rolland Kontak kept everything on schedule and six groups formed to brainstorm on "What future can we hope and plan for INPAWS?" At 5:00 P.M. leaders Chris Carlson, Rolland Kontak, Sue Nord, Tom Potter, Chris Turner and Anne Wilson presented ideas from the break-out groups. Regional and local chapter formation, educational possibilities, workshops around the state, praise for the newsletter, and encouragement for a diversity of programs (including hikes and more "sedentary" activities) were among the suggestions.

After a genial social hour and delicious banquet, attendees reconvened for coffee, brownies and our keynote speaker. Neil Diboll of Prairie Nursery, Westfield, Wisconsin, spoke on the *History of the Prairie Restoration Movement* combining an informative lecture, beautiful slides and his delightful wit and humor to make a very enjoyable presentation.



Chris Carlson leading discussion group

Evaluation remarks from participants expressed delight with this first regular annual meeting and recommended repeating the event next fall. Special thanks go to all individuals mentioned above, plus Max and Julia Gentry, Jonathan Wilson, Hilary Cox, volunteers, and to the Annual Meeting Planning committee consisting of Bill Brink, Carolyn Harstad, Ruth Ann Ingraham and Anne Wilson.

INDIANA

Native Plant and Wildflower Society

Financial Report January 1, 1994 - December 31, 1994

| Item | Income | Expense | Balance |
|-----------------------------------|------------------|-----------------|----------------|
| Balance forward from 1993 | | | 2648.23 |
| Dues | 7814.00 | | 7814.00 |
| Plant Auction | 2188.54 | 414.26 | 1774.28 |
| Annual Meeting | 3134.00 | 3291.00 | (157.00) |
| Matching Gifts | 25.00 | | 25.00 |
| Cash for change | 30.00 | 30.00 | |
| Postage | | 794.69 | (794.69) |
| Printing (other than newsletter) | | 464.37 | (464.37) |
| Office expenses | | 101.35 | (101.35) |
| Newsletter | 200.00 | 2791.57 | (2591.57) |
| Miscellaneous | | 2.00 | (2.00) |
| Savings account interest for 1994 | 52.88 | | 52.88 |
| Transferred to savings account | | 3000.00 | (3000.00) |
| TOTAL | 13,444.42 | 10889.24 | 5203.41 |

Sketches of the Prairie

The following is excerpted from *Sketches of My Own Times*, an autobiography by David Turpie (1828-1909), published in 1903. Turpie was a longtime politician whose tenure included two terms as U.S. Senator from Indiana. It was by traveling the state that he came to know the magnificence of Indiana's "Grand Prairie" and its people.

The most notable plant in these great natural meadows was the bluejoint grass, so called from the color of its stalk and leaves, which was dark green with a bluish tint near the ground. It was indigenous to the prairie, not found in the woodlands. The blue-stem ordinarily grew to the height of a man's shoulder, sometimes so tall as to conceal a man on horseback.

The blue-stem was a free-born native of the soil. It would endure burning and thrived lustily after its cremation, but it could not endure captivity. It scorned inclosures, resented being too often trodden under foot, and brooked not cultivation in any form. Thus when fields and fences came into vogue it soon disappeared and has now become extinct. It was this grass, the blue-stem, which furnished fuel for the prairie fires. ... Here then were thousands of acres of highly combustible material, awaiting only the touch of the torch. [Sometimes a fire was accidental or set by a herdsman, however, if it escaped from his control, it could] spread with amazing rapidity, and become a wild fire. A wild fire on the open prairie was a magnificent spectacle, combining all the elements of terror and grandeur. ... In advance of it was heard a loud roar, sullen and incessant; volumes of smoke arose from its burning front, obscuring the light of the sun, clothing the whole landscape at midday for miles in the somber hues of twilight; huge masses of flame, in startling form and figure, leaped high into the air.



Photo by Bill Brink

When this blazing peril threatened a farm, the neighbors mustered a fire-brigade in hot haste. ... These firemen were each equipped with a pair of buckskin gloves and a bundle of long twigs made into what was called a brush or fire broom. ... These skirmishers rapidly set out fires along their whole line, which spread toward the place to be protected; but these fires were kept carefully under management until they had

consumed all the grass in a space of sufficient width, when they were whipped out with a brush. ... When the wild fire reached the outer line of the "need-burn," as the burnt off space was called, it halted. Having nothing to feed upon it died down, and the flames gradually subsided. The only danger was from the sparks, which, borne by the wind, now risen to a gale, were sometimes carried clear over the need-burn into the dry grass beyond. The skirmishers, at this time, did lively work. They watched

where the sparks fell, and wherever a blaze appeared they whipped it out. After a while the fire in front ceased burning, the sparks coming from it were all black and dead, the danger point was passed, and the neighbors dispersed to their homes.

Charred remains of a great prairie fire were, to the beholder, more impressive than the ruins of any other conflagration.

Let him take his position near the center of a burn of three or four thousand acres and look round him. He might well fancy that the whole earth was hidden beneath the pall. Here and there, rarely, he might see a spot on the blackened surface; this was a small patch of the dry blue-stem which, by some

inconceivable caprice of the wind, had been left untouched by the flames.

Excerpted by Sue Nord

Prairie Burn Volunteers

Anyone interested in volunteering to assist with prairie burns for The Nature Conservancy should contact Jeffrey Maddox at (317) 923-7547.

Plant Rescue Committee Report

by Kevin Tungesvick, Chair

The plant rescue committee has begun to take shape. A lively panel discussion at last November's annual meeting provided a great deal of input as members and panelists discussed their hopes and concerns. As a result, preliminary goals and ethical and procedural guidelines for planning and implementing wildflower rescues have been developed.

The plant rescue program has several important goals. The first and most obvious objective is the removal of native plants from areas destined for imminent destruction by development. Secondly, plant rescue will provide a source of native plants for public gardens and educational displays. The plant rescue program will also serve as an educational tool in several ways. The publicity generated by the rescue of native plants will underscore the need to save natural areas as habitat for Indiana's diverse native flora. In addition, the use of rescued plants in public gardens will serve to educate visitors about indigenous plants. Finally, the possible use of these plants at schools will give children an early introduction to Indiana's natural history.

Concerns raised at the annual meeting have led the committee to develop a set of ethical guidelines for the rescue and relocation of native plants. First, the site of a possible rescue will be inspected by a knowledgeable volunteer. This inspection will provide a preliminary inventory of the species that may be rescued. More importantly, the volunteer will look for invasive exotic plants such as garlic mustard. If the site is found to be contaminated with such exotics, plans for rescue may be scrapped to avoid the accidental transport of species detrimental to native ecosystems.

Another ethical issue raised at the annual meeting was the possible transport of rescued wildflowers to areas of the state where they are not native. To avoid this potential problem, plants will be relocated within the natural region of the state from which they were rescued. This precaution will prevent

plants from being transported outside their natural range. Further, plants will not be relocated into a setting that already contains a full complement of native species. There is no need to fill a niche that is already occupied. These precautions will insure that the plant rescue program is in no way detrimental to native plant communities.

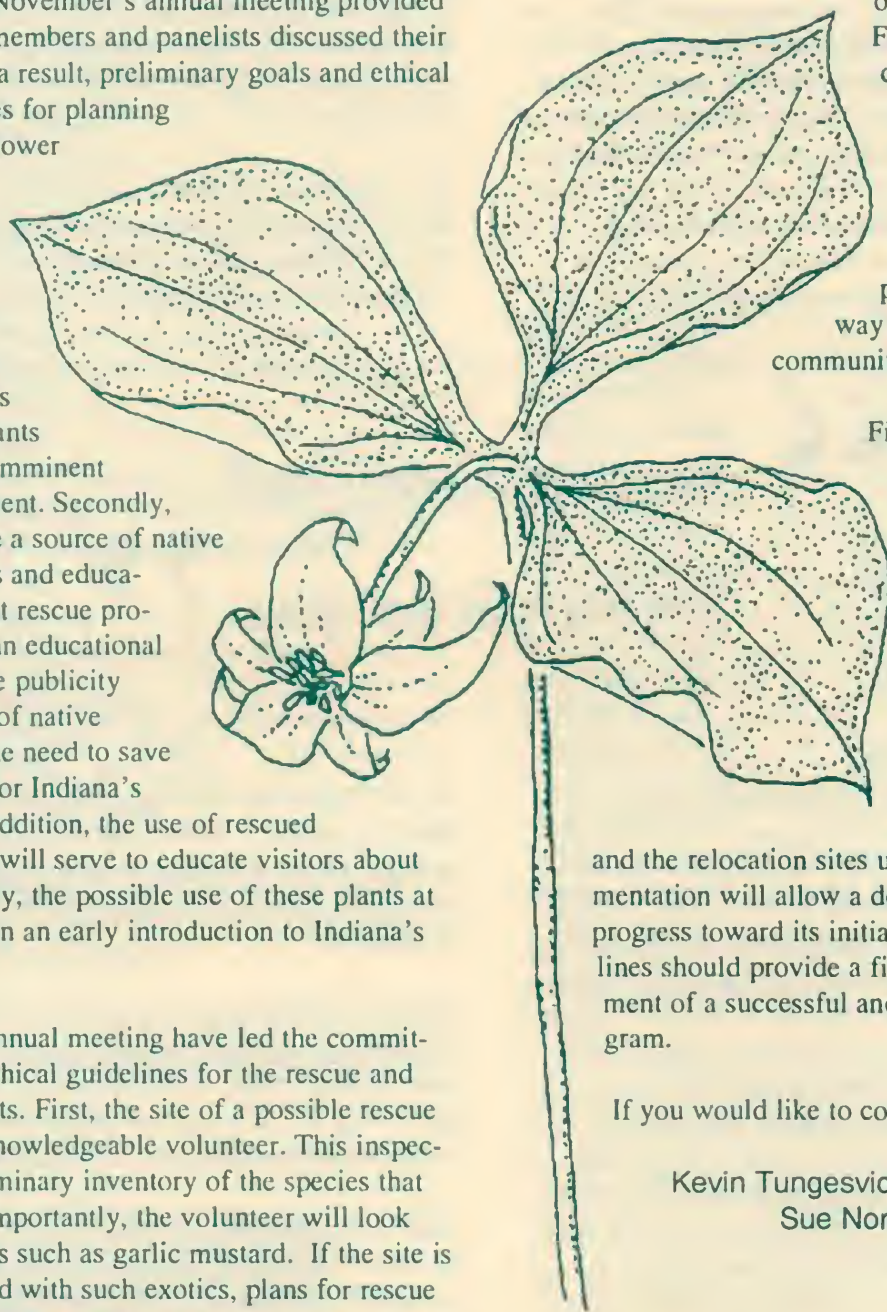
Finally, when a plant rescue is performed, certain guidelines will be followed to facilitate a successful rescue and insure accurate records. Guidelines and restrictions placed on the rescue by the landowner will be adhered to by the volunteers. Thorough records will document such statistics as the number of participants, rescued species and the relocation sites used in each rescue. This documentation will allow a detailed report of the program's progress toward its initial goals. These goals and guidelines should provide a firm foundation for the development of a successful and rewarding plant rescue program.

If you would like to comment or volunteer, please call:

Kevin Tungesvick (317) 354-2775
Sue Nord (317) 782-0763

Kevin Tungesvick is chairman of the plant rescue committee. He grows many native trees, shrubs and wildflowers at his rural Anderson home, providing a rich and varied diet for the local deer.

Trillium flexipes by Cheryl LeBlanc



One Small Creature

by Bob Frantz



Here at Wildwood we never know from one day to the next, or even from one hour to the next, what may appear. We never cease to marvel at the infinite variety in nature and that's what makes living in the midst of woods-swamp-grassland so interesting. When we look out of a window or poke around in the woods we never know what we'll see or find.

It is past the middle of March, always a time of uncertain weather. About a week ago on a rather warm day the time seemed right to do a bit of repair on our stone drive. It needs constant attention and we have a pile of crushed stone which we use for that purpose. I had finally taken the snow blade and chains off the old Ferguson (for the second time this spring), hoping that the last of winter was past, and attached the loader so that such jobs as hauling stone for the road could be done.

“... I happened to notice a small furry ball in the loose stone.”

As I shoveled stone into the loader, I happened to notice a small furry ball in the loose stone. I'm not sure if it had been there before I disturbed it or not, but it was about to be shoveled onto the loader. It was hardly the size of a golf ball and light brown in color. On closer examination, I discovered that it was a little animal, very much alive, but in a state of hibernation. I could tell that it was some species of jumping mouse since its rear legs were larger than the front and it had a long tail that was wrapped around the little sleeping body. I carried it to the house and asked Alice to bring the camera so that we could photograph it. I carried it back to the approximate place I had found it, wearing a glove so that the warmth of my hand would not awaken it prematurely. I picked a spot, as near as I could to where I had found it, and covered it with dry leaves. A day or so later, I checked to see if it was still sleeping, but either it had awakened and disappeared or I hadn't accurately marked the spot where I had returned it. At any rate I didn't see it again.

We looked in *A Field Guide To The Mammals* and decided that it was a meadow jumping mouse. We are not likely to see it again, since they are nocturnal, but we discovered some

other interesting facts about it. According to the book, the body of this species is about three inches long and the tail four to five. The weight ranges from one-half to four-fifths of an ounce. Jumping mice hibernate from October–November to April–May.

Most people do not know or care that this little animal exists, and before this experience we were only vaguely aware of it. The fact that it is not well known doesn't make it unimportant. It is my belief that there are no unimportant animals or

plants in nature. Every single part of our ecosystem has a part to play in the whole. We simply cannot know the role that any one of the millions and millions in existence has to play in the system. Over eons of time the earth's ecosystem has evolved, and is continuing to evolve today. We can't know how the

destruction of any one of its parts, no matter how insignificant it may seem to us, may affect the whole. I believe that everything on earth is interdependent, and so when one animal or plant, no matter how seemingly worthless, is eliminated from the system, we are all affected.

And so, even though we may rarely, or perhaps never, see another little meadow jumping mouse, we hope that they continue to exist. Here at Wildwood we are attempting, in a very small way, to have a part in protecting what remains of the intricate and wonderful world of nature.

Bob Frantz and his wife Alice are dedicated to preserving a 90-acre "wasteland" as much as possible in its natural state. Named Wildwood, it is a portion of a former family farm near Silver Lake, Indiana, and is comprised mostly of woodlands and swamps. This essay comes from Bob's collection of writings entitled If you Stand Very Still...Thoughts and Experiences from the Woods.

Input • Ideas • Images

Articles and Artwork Encouraged

The Indiana Native Plant and Wildflower Society newsletter committee invites submission of articles, drawings and photographs for the quarterly publication.

Articles

- **Subject matter**
Should be pertinent to Indiana native plants (trees, shrubs, mosses, algae, wildflowers, weeds, lichen, fungi, etc.); in keeping with the mission of the Indiana Native Plant and Wildflower Society; of interest to INPAWS members.
- **Length**
No longer than 500 to 600 words (two to three pages, typed, double spaced); shorter articles welcome.
- **Format**
Wherever possible articles should be submitted on Macintosh-compatible 3.5" diskette in Microsoft word 4.0. Do not add any formatting to your article (tabs, indents, etc.). If this is not possible, articles should be neatly typed, double spaced.
- **Editing**
All articles are subject to editing by members of the committee, including review by our technical editor.

Line Art & Photographs

- **Subject matter**
Should be pertinent to Indiana native plants; in keeping with the mission of the Indiana Native Plant and Wildflower Society; of interest to INPAWS members.
- **Format**
Black & white photographs preferred. Color images should have good contrast for best reproduction. Line art should be clean, crisp and free of dirt and smudges.

General

- **Inclusion**
The final decision to include or not include your submission rests with the newsletter committee. In some cases, timeliness of subject matter or available space may dictate using the material in a later issue.
- **Credit**
Authors and artists should include a brief (two to three-sentence) biographical statement for inclusion with the article or image.

General (continued)

- **Send to**
Dan Anderson, Editor
7412 Graham Road
Indianapolis IN 46250
(317) 849-3105
- **Deadlines**
 - April 15 for the Summer issue
 - July 15 for the Autumn issue
 - October 15 for the Winter issue
 - January 15 for the Spring issue
- **Return of materials**
Diskettes and artwork will be returned if a self-addressed, appropriate mailing package or container with sufficient postage is provided.
- **For more information**

| | | |
|--------------|--------------|---------------|
| Dan Anderson | 317-849-3105 | Editor |
| Anne Wilson | 812-342-6838 | Layout Editor |

Guidelines

for Letters to the Editor

Recognizing that a statewide organization embodies diversity of opinion, and recognizing that INPAWS members may provide perspective on issues by sharing that diversity with others, INPAWS Newsletter welcomes thoughtful letters to the Editor which meet the following criteria:

- on issues and concerns relating to native plants of Indiana
- may be of interest to the membership
- consistent with the mission of INPAWS

It would be helpful if letters were provided on a 3.5" Macintosh computer disk in Microsoft Word 4.0.

If the above is not possible, articles should be typed, double spaced. Please be as concise as possible in stating your views and kindly include a *brief* statement identifying yourself (2-3 sentences).

Send your letter to Dan Anderson, INPAWS Editor, 7412 Graham Road, Indianapolis IN 46250. Dan's phone number is (317) 849-3105.

Letters will be printed in as timely a fashion as possible. Do keep in mind that this is a quarterly publication; the publication deadlines are listed above. There may be circumstances where the newsletter committee delays printing your letter or declines to publish it altogether, and we reserve that right.

Dogwood Alert continued from page 5

Because Dogwood Anthracnose is favored by cool, damp conditions, dogwoods in most of Indiana may be spared widespread destruction. However, the receipt of over 10,000 infested dogwoods via out-of-state shipments could tip the balance in favor of the disease. The DNR's division of Entomology and Plant Pathology is working to keep this tree-killing disease in check by intercepting infested shipments and by utilizing the cooperation of Indiana's citizens.

A combination of cultural and chemical control measures is necessary to stem the disease. It includes an extensive and vigorous management program, which many homeowners may find too demanding and cost intensive. Total destruction of trees may be more economic and more prudent in protecting Indiana's dogwood population. Extensively diseased trees should be destroyed because effective control is not possible.

If you suspect that your dogwood may be infected, contact your local County Cooperative Extension Service Office or send samples to the Plant and Pest Diagnostic Laboratory, 1155 LSPS, Purdue University, West Lafayette, IN 47907-1155.

This article was compiled by Dr. Gilbert Daniels from IDNR information. It first appeared in The Lilly Pad, The Newsletter of the Horticultural Society of the Indianapolis Museum of Art, Fall, 1994.

Ten Essential Steps to Maintaining Healthy Dogwoods

1. Select healthy trees to plant.
2. Purchase trees from a reputable nursery; do not transplant trees from the wild.
3. Select good planting sites with good air circulation to promote rapid foliage drying.
4. Use proper planting techniques.
5. Prune and destroy dead wood and leaves yearly; prune trunk sprouts in the fall.
6. Water weekly during drought. Water only in the morning.
7. Maintain a 4 to 6-inch-deep mulch around the trees; do not use ground dogwood chips in the mulch. Prevent mulch from touching the trunk of the dogwood.
8. Fertilize according to soil analysis.
9. Use proper insecticide and fungicide where appropriate.
10. Avoid mechanical injury from weed whips and lawnmowers. Avoid chemical injury to trees from weed killers and high-nitrogen lawn fertilizers.

From the U.S. Department of Agriculture Forest Service

INPAWS Logo Contest

by Hilary Cox and Katrina Vollmer

Are you an artist or designer, or do you know one? INPAWS needs a distinctive logo to help represent the organization to those interested in native plants. The artwork would be used on INPAWS' publications and stationery and possibly other items such as shirts, mugs, jackets, and tote bags.

This project was recently approved by the INPAWS Executive Board. If you would like to help put INPAWS in the mainstream with other organizations, your participation or that of an interested friend is invited.

Here are the rules of the contest:

1. Original artwork must be submitted.
2. Artwork must include the name *Indiana Native Plant and Wildflower Society* or *INPAWS*.
3. Artwork must be in accordance with the mission of INPAWS.
4. No payment will be made for the artwork; however, artist credit will be given wherever possible including an announcement article in the newsletter.
5. Artwork will be selected by the Board of INPAWS, will become the property of INPAWS, and will be used only by INPAWS with the discretion of the Board and not by any other person or organization.
6. Artwork must be in black and white; however, the artist may indicate color preference on a copy of the artwork in the event that INPAWS decides on color reproduction of the logo.
7. Artwork must be clean and capable of enlargement or reduction.
8. The selected design will not be returned to the artist. Any entry not selected will be returned to the artist provided an appropriate self-addressed envelope with sufficient postage is submitted along with the entry.
9. The deadline for entries is November 1, 1995. Entries received after that date will not be considered.
10. Include your name, address, city, state, zip and day and evening phone numbers, secured to the back of your entry.
11. Please mail artwork and return envelopes (if desired) to:

Katrina Vollmer
3134 N. Greenbriar Lane
Nashville IN 47448.

If you have any question regarding the contest, please call Katrina at 812-988-0063.

Share Us With Your Friends

by Carolyn Harstad, Membership Chair

If you have friends who would like information about the Indiana Native Plant and Wildflower Society, please send their names, addresses and phone numbers to membership chair:

*Carolyn Harstad
5952 Lieber Road
Indianapolis IN 46208-1319*

or call (317) 257-9452.

New prospects will receive one complimentary issue of the newsletter plus an application for membership.

At this printing we have a total of 240 members for 1995. To date, only 35 people who were 1993 charter members and/or members for 1994 have not renewed. We are thrilled with this retention and hope our newsletter and programs planned for 1995 will continue to keep our membership high. Let's all work together throughout the entire state to build a stronger organization.

We are always happy to receive suggestions for programs, goals and projects and welcome your involvement in any committee on which you may like to serve. Even if you are "over-involved" (as so many of us are) perhaps you could participate in a single activity: a committee, a special project, a field trip etc. Let us hear from you!

Nominate Your Favorite Plant!

The Garden Club of America will award the new Montine McDaniel Freeman Horticulture Medal for North American native plants that are "little known but deemed worthy to be preserved, propagated, promoted and planted." Anyone may nominate a plant and virtually any type of plant is eligible. Nominees should "enhance the landscape, attract wildlife and/or be effective for environmental uses, such as erosion control." To nominate a plant or to receive additional information, contact Mary Ann Streeter, Freeman Medal Coordinator, Garden Club of America, 598 Madison Ave., New York NY 10022. (*Fine Gardening* magazine, February, 1995)

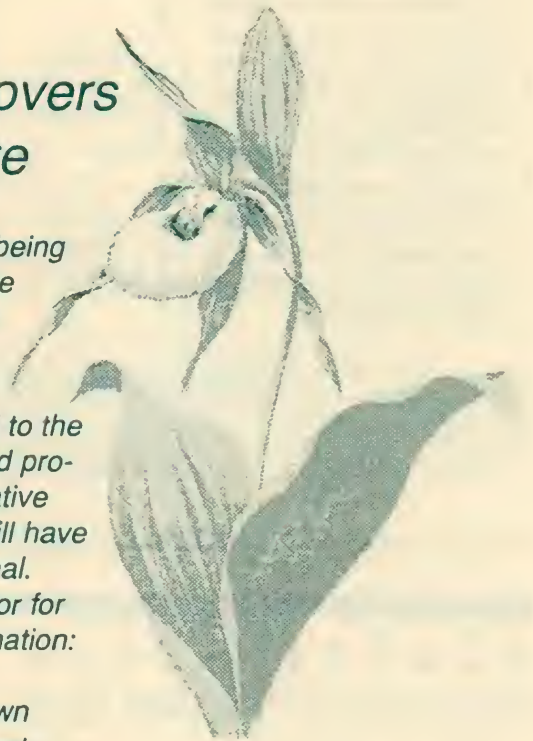
Indiana Dunes Diversity

"Consider this: The Indiana Dunes National Lakeshore is the most fragmented unit in all the national park system, its protected patches broken by housing and industrial development. At just over 14,000 acres, it is a tiny national park, compared with places like the Everglades (1.5 million acres) or Yellowstone (2.2 million acres). Yet the dune park harbors more total biological diversity than all but three national parks, and by far the highest plant diversity per acre. Here you can find Arctic bear-berry hundreds of miles south of its usual boreal range, growing within feet of prickly pear cactus. You can find southern dogwood just over a rise from jack pine, normally a tree of the far-north woods." (From *Audubon*, November, December, 1994)

Orchid Lovers Take Note

A new group is being formed called the *North American Native Orchid Alliance*, a group dedicated to the conservation and promotion of our native orchids. They will have a quarterly journal. Contact the editor for additional information:

*Paul Martin Brown
15 Dresden Street
Jamaica Plain, MA 02130-4407.*



Gardens as Plant Communities

An in-depth seminar for landscape professionals (and other flora enthusiasts) is scheduled for Saturday, February 25, 1995 in The Morton Arboretum in Lisle IL. The seminar has been developed by New Directions in the American Landscape, a conference series presented by Larry Weaner Landscape Design. For additional information call 1-800-274-3478.

INDIANA NATIVE PLANT AND WILDFLOWER SOCIETY

MEMBERSHIP APPLICATION

Yes! I/we have been waiting for this exciting opportunity! Enclosed is a check for the following:

- | | | | | | |
|-------------------------------------|------|---------------------------------|-------|------------------------------------|-------|
| <input type="checkbox"/> Student | \$10 | <input type="checkbox"/> Family | \$25 | <input type="checkbox"/> Sponsor | \$250 |
| <input type="checkbox"/> Individual | \$18 | <input type="checkbox"/> Patron | \$100 | <input type="checkbox"/> Corporate | \$500 |

Additional Donation \$ _____

Total Enclosed \$ _____

NAME _____

TELEPHONE _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

COUNTY _____

Gifts Do Help

Your gift of any amount will be most appreciated. Donations above student, individual and family membership dues are tax-deductible to the extent provided by law. Gifts will be used to help further the programs and purposes of INPAWS, such as publishing a newsletter and providing services related to monthly programs.

Membership Categories:

- Student:* For full-time students under the age of 22. Benefits include meeting notices, one vote on organizational issues, newsletter, membership directory.
- Individual:* Benefits are the same as for student.
- Family:* Includes head(s) of household and dependents. Benefits include meeting notices, newsletter, membership directory, and two votes on organizational issues.
- Patron:* Benefits are the same as for family, plus donation.
- Sponsor:* Benefits are the same as for family, plus donation.
- Corporate:* Benefits include newsletter, meeting notices, directory, special recognition, plus donation.

I would like to help on the following committee(s):

- Annual Meeting
- Programs
- Special Projects
- Newsletter
- Membership
- Publicity/PR/Marketing
- Fund Raising
- Plant Rescue
- Field Trips
- Other

Please complete this form and mail, along with your check made payable to:

Indiana Native Plant and Wildflower Society
c/o Carolyn Harstad, 5952 Lieber Road, Indianapolis, IN 46208.

← *Inside - page 13 - share us with your friends*

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INDIANA

Native Plant and Wildflower Society

NEWS

Volume II Number 2

Summer 1995



Asclepias purpurascens



Asclepias meadii

The Milkweed Family in Indiana

by Kay Yatskievych

Most of the 18 species of the Milkweed family in Indiana can be found blooming July through September, though some start blooming in June and a couple in May. Four-leaved Milkweed (*Asclepias quadrifolia*), a lovely smaller pink-flowered Milkweed with a whorl of four leaves, can be found as early as the first week in May in the woods in the southern third of the state. The Common Milkweed (*Asclepias syriaca*) also sometimes begins blooming as early as late May. It is a common sight along roadsides throughout the state. Also seen statewide is the only orange-flowered member of the family in Indiana, Butterflyweed (*Asclepias tuberosa*).

Three species that most people have not had the good fortune to see are the White Milkweed (*Asclepias variegata*) and two other species in a different genus, the Angular-fruited Milkvine (*Matelea gonocarpus*) and Large-flowered Anglepod (*Matelea obliqua*). All are listed on Indiana's Endangered, Threatened, and Rare list and are found in just a few counties in the southern third of the state.

Sadly, Mead's Milkweed (*Asclepias meadii*) formerly known from Lake County has been extirpated. It is now known only from a few states west of Indiana and is listed as threatened federally.

A list of all the species that have been found in Indiana follows. Where current scientific names differ from those used in Charles C. Deam's 1940 *Flora of Indiana* and a few other references, these have been noted in parentheses following the accepted name.

Indiana Species Milkweed Family (*Asclepiadaceae*)

Asclepias amplexicaulis. Blunt-leaved Milkweed, Sand Milkweed. Many counties in the northern third, plus a few in the rest of the state.

Asclepias exaltata (A. *phytolaccoides* of Deam). Poke Milkweed. Many counties, but not common.

Asclepias hirtella (*Acerates hirtella* of Deam). Tall Green Milkweed. Scattered counties in the western two thirds.

Asclepias incarnata subsp. *incarnata*. Swamp Milkweed. Most counties.

Asclepias meadii. Mead's Milkweed. Lake County.

Asclepias perennis. Thin-leaved Milkweed. Some counties in southwestern third, plus St. Joseph County.

Asclepias purpurascens. Purple Milkweed. Many counties in the northern third and southern third.

Asclepias quadrifolia. Four-leaved Milkweed. Many counties in southern third.

Asclepias sullivantii. Sullivant's Milkweed, Smooth Milkweed, Prairie Milkweed. Many counties in the northwestern quarter, plus a few in the rest.

The Milkweed Family continued on page 2

Inside. . .

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INPAWS

Coming Events

Saturday, May 13

This trip (to the Indiana Dunes) has been cancelled.

Sunday, May 21

INPAWS Plant Sale and Auction, Lawrence Community Center, 5301 N. Franklin Rd. Plants may be delivered from 11 AM to 1 PM. Auction will begin at 1 PM. Snacks and beverages will be available.

Saturday and Sunday, June 3 and 4

An overnight trip to Pigeon River Nature Preserve and Pokagon State Park to see native orchids and more. You may camp or stay in a motel.

Sunday, July 9

A visit to Bill Arnold's Field Guide Park, near Anderson, to see his wire sculptures in a setting of native prairie plants. Later, we will stop at Charlie's Pond, a restored wetland and prairie near Summit Lake State Park and enjoy a wiener roast.

Saturday, August 12

A trip to Falls of the Ohio State Park where we can view the world's largest exposed fossil reef and many interesting native plants of the Ohio River valley.

Sunday, August 20

Lecture program; subject to be announced at a future date.

Call an officer or committee chairperson for details.

The Milkweed Family continued from page 1

Asclepias syriaca. Common Milkweed. Most counties.

Asclepias tuberosa subsp. *interior* and subsp.

tuberosa. Butterflyweed, Pleurisy-root. Many counties.

Asclepias variegata. White Milkweed. A few scattered counties in southern third.

Asclepias verticillata. Whorled Milkweed, Horsetail Milkweed. Many counties.

Asclepias viridiflora (*Acerates viridiflora* of Deam).

Short Green Milkweed. Northern tier of counties, plus a few others in the rest of the northern half, and Harrison County in the extreme southern part.

Cynanchum laeve (*Ampelamus albidus* of Deam).

Bluevine, Sandvine. Many counties.

Cynanchum louiseae (*Cynanchum nigrum*). Black Swallow-wort. Collected only once as a weed in lawns in Marion County.

Matelea gonocarpos (*Gonolobus gonocarpos*). Angular-fruited Milkvine, Large-leaved Angle-pod. A few counties in the extreme southwestern corner.

Matelea obliqua (*Gonolobus obliquus* of Deam).

Large-flowered Angle-pod. A few counties in the southern quarter.

Kay Yatskievych is one of the founding members of INPAWS. She works at the Missouri Botanical Garden in St. Louis, and has written articles and had photos published in National Geographic and Flora of North America. She is presently writing and illustrating a Field Guide to Indiana Wildflowers, which will be published by Indiana University Press.

Indiana Native Plant and Wildflower Society Newsletter

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Published quarterly by the Indiana Native Plant and Wildflower Society for members.

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| Vice President | Bill Brink | (317) 255-0166 |
| Corresponding Secretary | Ruth Ann Ingraham | (317) 253-3863 |
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| Newsletter | Dan Anderson | (317) 849-3105 |
| Nominating/Governance | Chris Turner | (317) 251-9470 |
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| Publications | Anne Wilson | (812) 342-6838 |
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| Speakers Bureau | Colletta Kosiba | (317) 852-5973 |

The Mission of the Indiana Native Plant and Wildflower Society

is to promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the values, beauty, diversity and environmental importance of indigenous vegetation.

Newsletter Committee

| | | |
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| | Betty Trusty | (317) 831-6404 |
| Consulting Editor | Chris Carlson | (317) 257-5413 |

Submission of articles

Information for the newsletter is supplied by Society members and others interested in sharing information about Indiana native plants. Articles or drawings should be sent to the Editor, Dan Anderson, 7412 Graham Road, Indianapolis, IN 46250.

President's Message

by Jeffrey Maddox

Well Spring has really sprung now and I'm sure most of you are busy out in your gardens. Others of us are out hunting mushrooms and other early edible and medicinal plants. If you get out early enough you can hear the turkeys gobbling in most parts of Indiana now. Yes, spring brings fresh delights to replace the winter wonders.

While mother nature has been busy, so have INPAWS members. This news hot off the press....our first chapter has been formed in the Muncie area! They are just getting started and have a lot of good talent there to help them on their way. They are considering a proposal from the Minnetrista Center to form a partnership full of opportunities. They are calling themselves the *Oakhurst Garden Chapter* of INPAWS. Call Kemuel Badger at 317-285-8847 for more information. Good going folks! Who's going to be next?

INPAWS was also able to get five of the state's leading experts to help us better understand one of the biggest current issues in native plants - degradation by overpopulated deer, especially in our state parks. The March 26 meeting was very informative and gave us some constructive actions to take. We adopted a resolution and testified at the April 25 public meeting of the Indiana Department of Natural Resources Commission. We will also take an active role advocating appropriate management which will conserve the native plants in our state parks by supporting the advice of the experts on the Deer Study Committee.

INPAWS RESOLUTION: *In light of documented degradation of the flora and fauna on state-owned lands by problem animals and in light of the need for ecological restoration, the Indiana Native Plant and Wildflower Society supports the recommendation of the Brown County Deer Study Committee and the recent ruling of the Natural Resources Commission which would enable and enhance the ability of the Indiana Department of Natural Resources to protect native flora in Indiana's state parks.*

We are also doing a project with the Indianapolis Museum of Art to provide a native flower to school children as they learn about our natural heritage. Indy Parks has several more proposals where we can help. The plant rescue committee is ready to act when they find some sites. If you know of any potential areas, please call Kevin Tungsveick at 317-354-2775. INPAWS displayed at Orchard in Bloom May 5-7. We are sponsors of the Wildflower Foray in Brown County this year. And, there are several good trips coming up as well as the plant auction. I hope you'll make the time to come along.

There are many more good projects we can do when we get more members involved. Come join in the fun!

Regional INPAWS Chapter Guidelines

How do you organize a local chapter of the Indiana Native Plant and Wildflower Society?

According to our bylaws, at least five members residing in an area should first apply in writing to the Executive Board of INPAWS stating their purpose, proposed name of the chapter and the chapter's proposed territory.

What are some functions such a chapter would serve?

- Rescuing native plants and wildflowers from designated construction sites or areas where they are destined for destruction, and relocating them.
- Identifying native plants and wildflowers in the area.
- Meeting with people in the regional area for programs, field trips, special projects and fellowship.

What about dues?

Regional chapter members pay regular dues to the *Indiana Native Plant and Wildflower Society* (the state organization). Chapters may elect to have local dues as well if they so desire.

Are there any regional chapters in existence now?

See *President's Message* on this page for announcement of our first chapter!

Where can we get further information about establishing a regional chapter?

Write or telephone the membership chairman:

Carolyn Harstad
5952 Lieber Road
Indianapolis, IN 46208-1319
(317) 257-9452

FOREST Fragmentation

Isolated Islands of Native Vegetation

by David J. Hicks

The last two centuries have been hard on Indiana's native plants. Relatively undisturbed habitats exist as an archipelago of tiny islands in a sea of fields and pastures in most parts of the state. Although I will focus on forests, the same theories, facts and thoughts hold for prairies and wetlands as well.

A study that I did in collaboration with Douglas Keller revealed the degree to which Indiana forests have been fragmented. We found nearly 1300 separate farm woodlots, nature reserves and other forest patches in Wabash County. The average area of these isolated stands is only 16 acres, and 90% are smaller than 50 acres. Although Wabash County had a nearly continuous forest canopy before European settlement, just 9% is forested now. Forests are isolated from each other; the average distance between them is 450 feet.



The picture in Wabash County is typical of the central and northern regions of the state. What are the consequences for conserving woodland plants? The ecology of such plants is key to answering this question. Most are specialists in the low-light, high-moisture conditions of the forest understory, and do not prosper in large, open areas.

How does the environment of a forest change when it is carved out from an extensive forest area and made into an isolated woodlot? Many studies have demonstrated the "edge effect" or production of a zone around the periphery of the stand where conditions are brighter, drier, warmer, and more variable than in continuous forest. These environmental changes penetrate 20 to 30 feet or more from the edge and thus are of greater consequence in small patches. Edge effects are generally unfavorable to specialized native plants, but favor invasive, introduced species. For example, in studies of

old-growth forests in central Indiana, Timothy Brothers and Arthur Spingarn found that edges are invaded by non-native, weedy species such as dandelion and pigweed. These aliens cannot invade undisturbed forest in force.

Trees in isolated patches also have much greater exposure to wind than they would in the interior of a large, continuous forest. The increased wind has significant effects. Many studies by foresters have shown higher rates of treefall in small forest parcels. Further, the holes left in the canopy by dead trees let light into the interior of the forest, introducing edge effects in the middle of the stand. Small stands are especially susceptible, and may suffer catastrophic damage. For example, in one Swedish study patches up to 2.5 acres in size had 90% to 100% death and damage rates vs. less than 10% for continuous forest.

Biologists who have studied oceanic islands have found evidence for increased rates of extinction on islands. Island populations are limited in size by the extent of the habitat, and thus are more susceptible to the effects of inevitable environmental fluctuations. But, unlike mainland populations, islands do not have a ready supply of new migrants to restart populations in areas where a species has gone extinct. This may be a significant problem in nature reserves, which are often isolated from other forested areas, and in which conservation of plant diversity is an important goal. Many deciduous forest plants have rather limited means of dispersal, and the number of seeds or fruits crossing a non-forested "sea" to an "island" reserve is probably quite low. Once a population becomes extinct, the chances of re-colonization without human help may be very low.

David J. Hicks teaches ecology, botany and genetics at Manchester College in North Manchester, Indiana. He is currently doing a study of cactus population dynamics in the Galapagos Islands.

Dr. Willard Nelson Clute

Co-Founder Of The American Fern Society

by Paul Debono

One day when I was very young, I found in the attic of our home a board with the name "Clute" on it. I never forgot the name, and years later, when I had graduated from college, I researched the name and came up with the following information:

Willard Nelson Clute was interested in plants from childhood, and graduated from the University of Chicago with a degree in botany. In 1893, he joined the Botany Department of Columbia University. The same year, he and five other botanists founded the American Fern Society. Clute became both publisher and editor of the society's newsletter, then called the *Linnean Fern Bulletin* (now *The American Fern Journal*).

From 1903 to 1928 Clute taught botany in three Illinois high schools and wrote four high school botany texts. During that period he wrote several other books on ferns and fern allies, including *The Fern Collector's Guide* and *Useful Plants of the World*. His writings were notable for the ease of reading and of use, and were appreciated by amateurs as well as professionals. He loved poetry, and often included poems in his textbooks, when he thought they were applicable.

In 1928, Clute moved to Indianapolis to begin a new position as Professor of Botany and curator of the Holcomb Botanical Gardens at Butler University. While there he continued writing, producing his best-known work *Our Ferns: Their Haunts, Habits and Folklore*. Other works included *Common Names of Plants* and *Swamp and Dune*.

In 1938, Indianapolis received an 86-acre parcel of land on the city's northwest side in a will, with the stipulation that a botanical garden be developed on the site. Clute was appointed as director of the garden, which was called Holliday Park. In order to devote his entire time to the project, he resigned his position at Butler.

During the following years, he filled the garden with rare and beautiful plants, some of which had been obtained from all over the world and raised by hand. One of his favorites was the golden-rain tree, which was brought to the Midwest by early settlers at New Harmony, Indiana. He built a sand garden in which he planted 43 varieties of cactus. Other unusual trees and shrubs included a "rubber-band tree," a tree that produced a flammable gas, and a winter witch hazel that flowered in the dead of winter. As part of future development of the park, a museum, library, and an auditorium were planned.

Three years later, Clute resigned his position after a dispute with city officials on how the park should be run. Plans for a showplace park were first shelved and then forgotten.

In 1950, Willard Clute died in his home at the age of 81, but many of the specimens he planted still live at Holcomb Gardens and Holliday Park. Unfortunately, this outstanding botanist and author has never received the recognition he deserves.

Notes:

- The Smithsonian is anxious to find a number of glass-mounted type specimens of ferns collected by Clute. The ferns are not at Butler, and may have been taken by Clute's assistant, Scott McCoy, who may have taught at Crispus Attucks. If any INPAWS members can help in the search, please contact the author.
- This article was condensed by INPAWS Editor Dan Anderson from the original. Dan comments, "I would like to see at least a plaque in his memory, and invite any of you who have questions or information about Clute to write to

Paul Debono
2346 N. Delaware Street
Indianapolis, IN 46205."

Debono is a free-lance writer and historian interested in lesser-known aspects of Indiana history. The above is an abridgment of his article published in Fiddlehead Forum, the newsletter of the American Fern Society.



INPAWS Activities

Our first field trip of the year, on February 26th, was a visit to Big Walnut Nature Preserve, west of Indianapolis. About 60 were in attendance, many of whom were not familiar with INPAWS but who had read our announcement in the activity section of the newspaper. President Jeff Maddox led the hike, which focused on tree identification using bark textures and bud arrangements as clues to tree identity. The March meeting on the deer problem, which was held at the 4-H extension offices on North Meridian Street, drew about 50 INPAWS members and visitors.

INPAWS members have been busy with exhibits and presentations:

Vice President Bill Brink presented some of his outstanding nature photographs at Holliday Park on March 17-19.

Carolyn Harstad was the guest speaker at the March 10 meeting of the Sons of Norway, and showed many of her beautiful slides of wildflowers.

Sue Nord gave a series of presentations on using wildflowers in the garden at several Marion County libraries during March and April.

Dan and Sophia Anderson have revived Carolyn Harstad's wildflower project for 4-H, and have scheduled a series of six sessions which began on March 29th. Five youngsters signed up, and more are expected by the time the classes begin.

INPAWS Executive Board meetings will be held on the third Thursday of every month. If you would like to attend contact a board member for details.

Walks at Butler University

Dr. Becky Dolan, INPAWS member and director of the Friesner Herbarium and Butler's 5.5-acre prairie, is leading the following walks:

May 9 Wildflowers in Butler Woods
June 13 Butler Prairie and the Water Canal
July 11 Butler Prairie and the Woods

Meet at the back of Gallahue Hall at noon. Walks will last about one hour. All are welcome; there is no charge. Call (317) 924-9644 for more information.

PUBLICITY COMMITTEE

The Publicity and Public Relations Committee, chaired by Katrina Vollmer, is directed towards making the Indiana Native Plant and Wildflower Society publicly known throughout Indiana. Objectives include establishing a logo, developing a member and book resource list, obtaining junior members, and participating in public events such as Orchard in Bloom, Indiana State Fair, and the Flower and Patio Show.

The Publicity and Promotion Subcommittee is headed by Hilary Cox, and is responsible for advertising and news items in print which will help advance our organization by publicizing its activities. The Public Relations and Marketing Subcommittee, headed by Katrina, will work with special projects and logo development. Both will work closely with the Membership Chairman and the Special Projects Committee.

If you would like to help in this area, please call Katrina at 812-988-0063 or Hilary at 317-272-4938.

SPEAKERS BUREAU

There has been an increasing demand from public organizations, schools, and garden clubs for speakers knowledgeable in the areas of native plant appreciation and identification, use in the garden, propagation, restoration of prairie habitat and other subjects. Several of our members have had more requests for assistance than they have been able to accept, so a Speakers Bureau is being formed. In this newsletter you will find a separate form which you may fill out if you are interested in sharing your love of native plants with others. Colletta Kosiba, the chairperson, would like very much to have a pool of volunteers to draw on. The questionnaire will give you an opportunity to express your preferences regarding subject, time, location, and type of audience you would feel most comfortable with.

For more information please call Colletta at 317-852-5973.

Since publication of the 1995 Member Directory INPAWS has welcomed more than 40 new and renewal members!

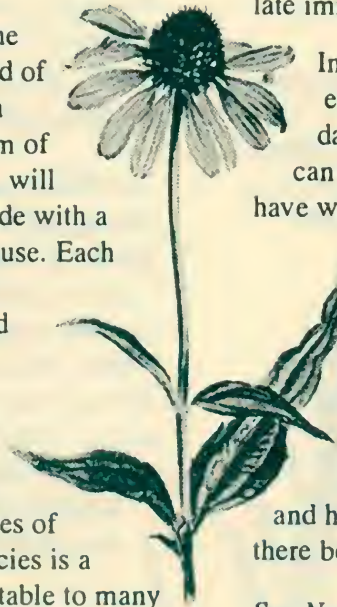
The first addendum to the directory is enclosed in this issue of the newsletter.

Sowing Seeds for the Future

by Sue Nord

As part of INPAWS' mission to help educate the public about the uses of native plants, our Board of Directors authorized funding for a portion of an enrichment program at the Indianapolis Museum of Art. The program, designed for second-graders, will teach about plant communities, and will conclude with a tour through the IMA grounds and the Greenhouse. Each student will decorate a clay pot, plant a purple coneflower in it, and will take home a "care and fun fact" sheet along with the plant.

Purple coneflower, *Echinacea purpurea*, was selected for the enrichment program because it ties in so well with the communities theme, providing a link between the communities of the past and the present. This native prairie species is a reliable perennial, being easy to grow and adaptable to many garden situations. The plants will provide a bounteous supply of colorful blooms, even for novice gardeners.



The coneflower has a rich history as an herb for healing. Native Americans used it long before European settlement, and early travelers brought the plant and knowledge of its uses back to Europe, where it is still being used. Some published reports indicate that extracts of *Echinacea* may stimulate immunity and help to relieve symptoms of colds and flu.

In addition to its medicinal uses, purple coneflower is excellent for attracting wildlife to the garden. The large daisy-like flowers are a landing pad for butterflies, who can sip nectar readily from the blooms. After the flowers have withered, the bristly seed-head or cone forms. Because it resembles a hedgehog (Greek *echinos*), the name *Echinacea* was given to the genus. Goldfinches will perch on the sturdy stems and peck the nutritious seeds right out of the cone. Any seed they miss can be collected and sown the following spring to produce many more plants.

Purple coneflower at once links beauty, reliability, and history with natural science. What better way could there be to show the interconnectedness of communities?

Sue Nord is a horticulturist and gardener at the Indianapolis Museum of Art, and a charter member of INPAWS.

INPAWS Newsletter Advertising Guidelines

With a thought to encouraging communication between members, and perhaps providing goods and services members need, we will run display and classified advertising in this newsletter. Here are the guidelines:

Display advertising:

Camera-ready ads are preferable, but we will also typeset ads. You may provide a logo (on a business card or letterhead).

Items for sale, such as seeds, plants, gardening supplies, landscaping, books, etc., or services, should be related to INPAWS activities.

Display rates:

| size | per issue | per year (4 issues) |
|------------|-----------|---------------------|
| 1/4 column | \$30 | \$100 |
| 1/2 column | \$40 | \$130 |
| 1/2 page | \$60 | \$200 |
| full page | \$100 | \$330 |

A 1/4 column ad is approximately business-card-size; a 1/2-page ad can be either vertical or horizontal.

Classified advertising:

Sold by the column-inch, at \$5 per half inch (four lines of approximately 25 characters each).

Deadlines:

- April 15 for the summer issue, published May 15
- July 15 for the autumn issue, published August 15
- October 15 for the winter issue, published November 15
- January 15 for the spring issue, published February 15

free!

Each INPAWS member will be entitled to place a half-column-inch classified ad **free** once each year, listing his or her needs, interests, or material available!

The editorial staff reserves the right to reject any ad. INPAWS will not be responsible for defective merchandise or problems resulting from a product or service.

Requests for advertising space must be accompanied by a check made out to INPAWS for the amount due.

Please send your ads to

Dan Anderson
7412 Graham Road
Indianapolis, IN 46250.

For more information call

Dan Anderson (317) 849-3105 or
Anne Wilson (812) 342-6838.

Restoring Tallgrass Prairie in Indiana

by Phil Delphey

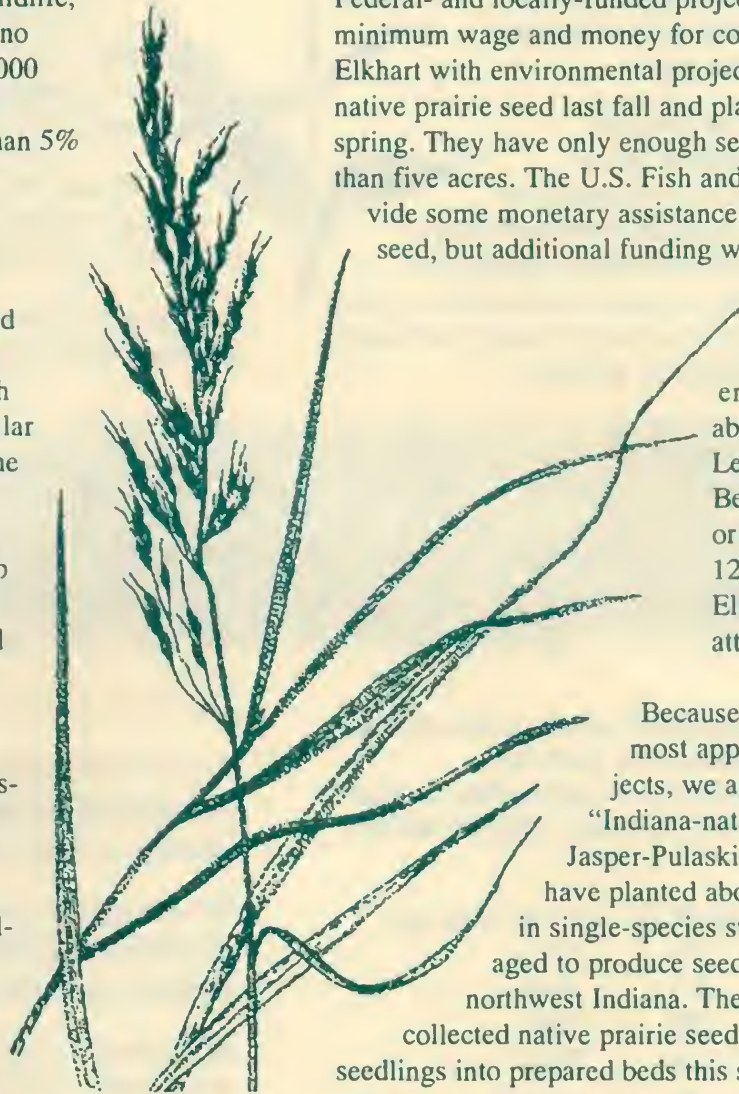
U.S. Fish and Wildlife Service's *Partners for Wildlife* Program

When Euro-American settlement began in the 1800's, Indiana contained about 3 million acres of tallgrass prairie, mostly in the northwestern part of the state. This prairie contained a diverse mix of tall and mid-height grasses, spectacular wildflowers, and many species of wildlife, several of which are now endangered or no longer exist in the state. Of the 169,000,000 acres of tallgrass prairie present in North America at the time of settlement, less than 5% remain.

With the loss of Indiana's prairie, large, "charismatic" prairie species, such as American bison and elk, quickly vanished from the region. Smaller prairie animals declined more gradually, since areas such as hayfields and large pastures were similar enough to native grassland to enable some species to hang on. Since the 1950's, however, midwestern agriculture has become dominated by intensive row-crop production, eliminating most of the last vestiges of grassland. As a result, several grassland bird species are suffering precipitous declines.

To recover some of this vanishing ecosystem, the U.S. Fish and Wildlife Service (FWS) began working with private and public landowners in 1993 to establish tallgrass prairie habitat. Landowners willing to devote five or more acres to supporting tallgrass prairie vegetation for at least 15 years may receive cost-share and technical assistance.

Smaller areas may qualify if the prairie planting would provide waterfowl nesting habitat for a nearby wetland. In general, we can only cooperate with landowners who will burn the planting themselves or do so with the assistance of a local fire department or conservation group. Burning is by far the best tool to successfully establish and maintain a prairie plant community. Mowing the planting for weed control during the first few growing seasons is also necessary.



If you do not have five acres on which you can plant prairie, but are interested in helping with the recovery of Indiana prairie, you can help by volunteering to collect seed or by donating money to a project such as the one listed below.

The FWS is working with the Elkhart Envirocorps in establishing an 80-acre prairie plant community on the City of Elkhart's "Boot Lake Property." The Envirocorps is a Federal- and locally-funded project in which persons earn minimum wage and money for college tuition while assisting Elkhart with environmental projects. The EE collected some native prairie seed last fall and plans to plant 20 acres this spring. They have only enough seed, however, to plant fewer than five acres. The U.S. Fish and Wildlife Service will provide some monetary assistance to purchase additional seed, but additional funding would increase the diversity

and quality of the seed mix planted. This project will likely continue for several years. For information about this project contact Lesia Bennett or Beth Coon at 219-294-6661 or write them at 1201 S. Nappanee Street Elkhart, IN 46516 attn. Eric Horvath.

Because local seed is likely the most appropriate for restoration projects, we are working to develop "Indiana-native" seed supplies. At Jasper-Pulaski Fish and Wildlife Area we have planted about 15 acres of native grass in single-species stands, which will be managed to produce seed for prairie plantings in northwest Indiana. The Hoosier National Forest collected native prairie seed in 1994 and will plant seedlings into prepared beds this spring. These beds will also be managed to produce seeds for restoration projects.

To discuss establishing native prairie species on your property or otherwise assisting with prairie restoration projects in Indiana, contact

Phil Delphey
U.S. Fish and Wildlife Service
620 S. Walker Street
Bloomington, IN 47403
812-334-4261 x207.

Introducing Children To Nature

by Betty Trusty

As more and more school systems are integrating classroom lessons with nature studies, it becomes increasingly more important for gardeners to offer their expertise as educators. Many teachers do an excellent job in introducing horticulture and agriculture in science lessons, design in math class and wildlife studies in biology. Yet after the children have been introduced to nature, what happens to the course of study?

Too often the class moves on to other subjects and the child with an acute interest is left wanting more information. That is when the "gardener" can offer to participate. You and your organization can plan one-day nature seminars for youth at the local library. Adopt an elementary school class and visit once a month with a short lesson on building birdhouses or making dish gardens. Invite a class to your home for a walk in the woods or a bird watch. Adult clubs can put out a nature newsletter for kids with nature-related recipes, pictures and games. Organizing a junior garden club is possible in many school systems; sometimes sponsoring PTO's will help with financing.

When instructing children on horticulture, do not be afraid to use scientific names and correct terminology. Don't forget, however, to EXPLAIN their meanings. By repeating *Tagetes erecta*, or marigolds, during a discussion with youth, they will

soon be telling others that *Tagetes erecta* ARE marigolds. Use correct names for gardening tools, never referring to tools as "digger" things because children, like adults, will remember the first explanation.

Children are like sponges, absorbing all information spilled out to them. Because of the innovative instructions in many public schools, children are being exposed to many phases of nature. Yet it is up to those who love gardening, wildlife and nature to continue to offer opportunities for children to expand their knowledge in these areas.

Perhaps you feel that you are not "qualified" to instruct children. Then try offering scholarships to high school students who plan to enter horticulture or a nature-related field.

Purchase trees for schools, scouts, church youth groups or 4-H members to plant for Arbor Day. Donate books on gardening, wildlife and nature to your local library. It can be a one-time gift, but chances are that when you begin encouraging youth to become involved, YOU'LL get involved!

With the many social and intellectual opportunities that society offers the youth of today, it is important that we give our children a sense of responsibility and "roots". This is our opportunity to ensure that the love of the earth endures.

Betty Trusty is a Master Gardener, landscape design critic, gardening consultant and holds positions on the local, district and state level in the Garden Club of Indiana, Inc. A Girl Scout leader, 4-H sponsor and leader of Hall's Junior Garden Club, she keeps involved in her three daughters' activities.

Children are like sponges, absorbing all information spilled out to them.

Turning On the Public to Turning Off Exotics

is the title of a meeting sponsored by the Eastern Native Plant Alliance, June 1-4, at Hilltop Arboretum, Baton Rouge, Louisiana.

For information call
(504) 767-6916 or
(504) 892-5424.

*... And NOW is the time to go after garlic mustard
(see article in spring newsletter)*

And speaking of exotics...

According to the September/October 1994 issue of *Audubon* magazine, Indiana botanist Charlie Deam issued this warning in 1948:

I understand they are strongly recommending now that all the old cemeteries be planted with multiflora rose. When Gabriel sounds his horn, I am afraid some will be stranded and not be able to get through the roses. Please do not recommend the multiflora rose except for the bonfire.

Free for the Picking

by Dan Anderson

What a difference a month makes! As I write this at the end of March, the woods floor is still covered with last fall's leaves, and one has to look closely to see the leaves of adder's tongue and cut-leaved toothwort just beginning to poke their way through the debris. By the time you receive this newsletter, in early May, the woods will be carpeted with green, the leaves of most trees will be out, and the short fruiting cycle of the delicious morel mushrooms will most likely be over.

The months of May, June and July are "prime time" for most of the wild edibles which can be eaten as leaves or shoots. Some of the ones we have found most enjoyable are very familiar to most; a few others perhaps less so.

Viola papilionacea

The blue violet, *Viola papilionacea*, is a familiar woodland friend and almost ineradicable invader of lawns, which sports flowers of purplish-blue, white, and seemingly as many variations of mottling and striping of the two colors as there are variations in snowflake designs. The leaves, which are reported to be high in vitamins A and C, are pleasant in salads and can be used as a cooked green. The flowers are most attractive when incorporated in a gelatin-type dessert or salad, giving a touch of elegance to a food which is often plain.

Cercis canadensis

One of the showiest small trees of spring is the redbud, *Cercis canadensis*, whose small flowers of a delightful pinkish-purple spring directly from the trunk and branches. According to some writers, the flowers can be dipped in batter and deep-fried, but the small size of the flowers and the need to avoid fried foods have discouraged their use in the Anderson household. Instead, we have used the young seedpods on several occasions as a substitute for snowpeapods in Oriental recipes. If the pods are picked while still tender, and cooked in boiling water for about five minutes, they will be tender and tasty and far less costly than the \$2 or more per pound for the purchased vegetable.

Hemerocallis fulva

The day lily, *Hemerocallis fulva*, is often seen in large patches along roadsides, blooming in June or early July. Its showy orange blossoms bloom for one day only, yet there will be a sufficient number in any clump to maintain color for two weeks or more. According to the Audubon Field Guide, the day lily does not produce seed, and reproduction takes place by propagation of the rootstalks. It's hard to go wrong with this delightful edible - the flower buds can be eaten raw or cooked like string beans, and the liquid remaining has a most

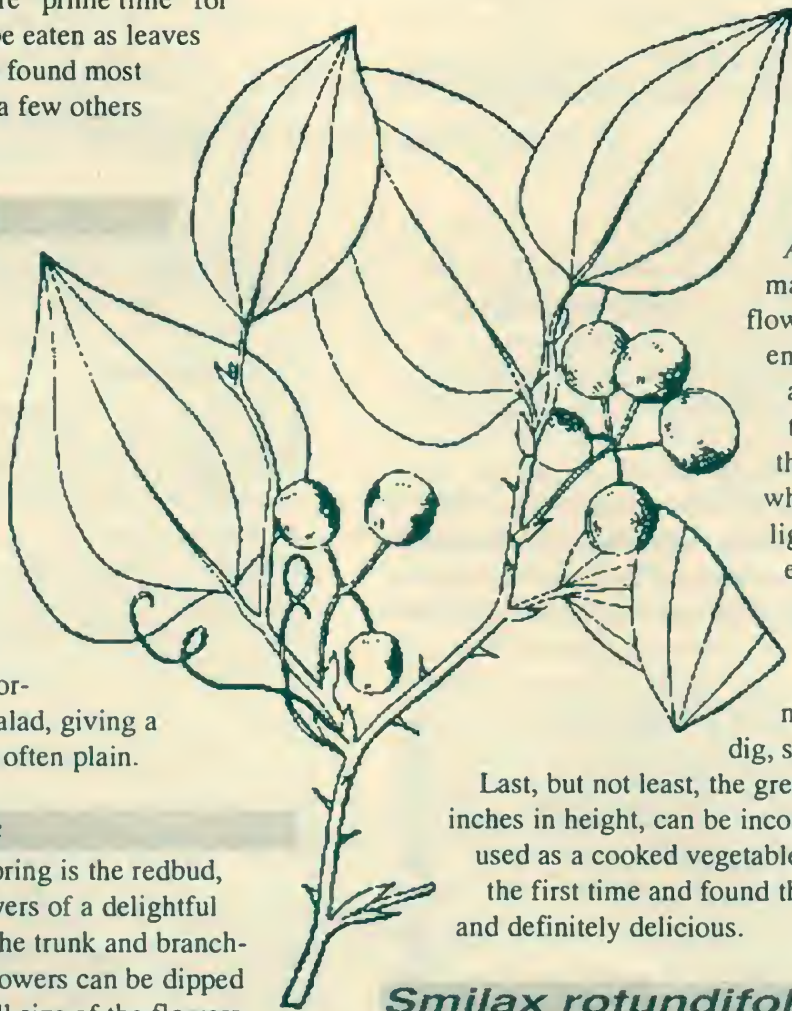
attractive aroma. If you should see "golden fingers" mentioned in an Oriental recipe, you're eating day lily buds!

Euell Gibbons, in his book *Stalking the Wild Asparagus*, reported that he made use of the withered flowers in flavoring and thickening soups and stews, and in addition, dug up portions of the root clump to separate the small tubers. These, when boiled for 15 minutes in lightly salted water, reminded him of sweet corn, but with a flavor all their own. (I tried this, but the small size of the tubers may not be worth the effort to dig, separate and clean them).

Last, but not least, the green shoots, which are 2-4 inches in height, can be incorporated raw in salads or used as a cooked vegetable. I recently tried them for the first time and found them to be slightly crispy and definitely delicious.

Smilax rotundifolia

Have you ever encountered a thicket of a thorny green vine with heart-shaped leaves? In all probability, it was Greenbrier (*Smilax rotundifolia*) or one of its close relatives. This prickly pest has one redeeming feature - the young growing tips with tendrils offer a choice nibble. But, before popping one into your mouth, make sure you shake off the ant or ants on the tip, otherwise you may get taste and protein you hadn't bargained for!



Polygonatum biflorum

Two other nibbles which can also be used in salads are Solomon's Seal, *Polygonatum biflorum*, and

Smilacina racemosa

False Solomon's Seal, *Smilacina racemosa*. Both sprout as leafless stalks somewhat like asparagus, and should be picked by snapping the stems off near the ground. Don't feel remorse at picking the shoot - the rootstock will soon send up another.

Typha latifolia

The Cattails, *Typha latifolia* and *Typha angustifolia*, are found along banks of ponds, in ditches, and in almost any spot where water is plentiful. Several parts of the plant are edible. First, when the sprouts are up about 18-24 inches, they can be cut and the outer leaves peeled away until the white oval core is left. This can be sliced and used in salads in the same way as hearts of palm or bamboo shoots. When the bloom spikes appear, both the green cylindrical flower head and the pollen can be used. Boil the flower heads for 10-15 minutes and butter (or oleo) them, and eat off the stem as if you had a small ear of corn. The pollen can be scraped off into a paper bag and later mixed 50-50 with flour in making pancakes or muffins. The result will be a yellow color and a delightful flavor. There are reports that the growing root tips and tubers furnish edible material, the first as a vegetable and the second a flour, after considerable work. As I never enjoyed rooting in mud (even when I was a kid) I'll pick the parts that are showing and leave the subterranean parts to the muskrats or whatever else enjoys them.

Morus rubra

One of the earliest fruit-bearing trees is the red mulberry, *Morus rubra*, which bears from late June into July. We have a large example on our Owen County property, across the lake from our cabin. Thanks to an unofficial understanding between us and the local avifauna, they leave the fruit on the low branches for us, and in return, they can have anything that's out of our reach. During the ripening period the tree is frequented by tanagers, cedar waxwings, red-bellied woodpeckers and other colorful and exciting birds, and the value of any fruit they take is more than equalled by our pleasure in watching them. I have found that the flavor of red mulberries varies from one tree to another, and one line of trees along Emerson Way in Indianapolis bore large clusters of berries without any flavor whatsoever. Our Owen County mulberries are very tasty with ice cream or cereal, but the picky person might object to the small green stem which is an integral part of each berry.

Sambucus canadensis

Many years I have made a ruby-red wine from the ripe berries of the Elderberry, *Sambucus canadensis*. If you need a good white wine, it can be made from the flowers, which bloom in June.



White Elderberry Wine

For one gallon of wine, you'll need the following ingredients:

- 5 cups flowers (stripped of green parts)
- 4 oz. white raisins
- yeast and yeast nutrient
- 2 lbs sugar
- grape tannin
- 1 orange, 1 lemon
- one gallon of water
- citric acid
- pectin-destroying enzyme.

Add to the water thinly-pared orange and lemon rinds, raisins, then bring to a boil. Dissolve in the sugar with stirring, then simmer for ten minutes. Put the blossoms in a large bowl, pour the hot mixture over them, and let cool until about room temperature. Add the lemon and orange juices, yeast and yeast nutrient, and put into a fermentation vessel without airlock, stirring daily. After six days, strain the juice into a fermentation vessel, add the last three ingredients, install the airlock, and let-er-rip for another four weeks or so. After the frothing has ceased, siphon off the liquid into clean sterilized bottles and allow to age for six months before opening.

(For you fritter fans, the elderberry flowers make good fritters also).

We hope that you'll get an opportunity to taste several of the above edibles!

Dan Anderson and his wife Sophia are charter members of INPAWS who have enjoyed a wide range of edible wild greens, mushrooms, nuts, fruits, and an occasional snapping turtle or muskrat over the past thirty years.

Bacon's Swamp Revisited

Compiled by Dawn Kroh

Shortly after the land now known as Marion County was ceded to the state of Indiana by the Miami Indians, a settler named Hiram Bacon came to the area. Bacon acquired a tract of land that today straddles Keystone Avenue between Kessler Boulevard and 52nd Street. A portion of this property contained a large bog which became known as Bacon's Swamp. The 150-acre peat bog was one of the few of its kind this far south in the United States.

This swamp developed in a basin of glacial origin. Recession of the Bloomington ice sheet, 60,000 years ago, no doubt left a lake at the site of Bacon's Swamp. The lake became extinct as vegetation transformed the original lake into a bog. In its final years of existence the bog began to transform into a swamp. The transformation was a response to the lowering of the water table due to increased agricultural tillage in the surrounding farmland.

In 1905 Mr. B.W. Douglass, interested in mining the peat for fuel purposes, conducted soil borings through the center of the swamp. Douglass wrote of his findings:

"I prospected Bacon's Swamp for the peat and invented a machine for compressing it for fuel purposes, back about 1905. My boring outfit had only 35 feet of pipe and I failed to touch the bottom at the deepest place, all solid peat. The entire swamp is underlain with a heavy, water-retaining, blue clay. I have no idea how thick this layer may be but it serves to hold the water in the swamp as perfectly as though it were a crockery bowl."

Much of the plant life in Bacon's Swamp was sphagnum moss, which has no roots and draws water through the wall of its stems and leaves. As new growth formed on the surface, the plants below were sealed from contact with the air. The weight of the water compressed the plants, and a peat bog was created. As the bog began its transition into a swamp the sphagnum disappeared. Douglass, who had explored the swamp at the turn of the century, expressed disbelief when informed of the disappearance of the moss in 1928:

"It is difficult for me to believe that you now find no Sphagnum at Bacon's Swamp...Certainly it grew there as abundantly and richly as I ever saw it in a Wisconsin or Michigan swamp, even better."

Unusual flora and fauna not native to the area abounded. As early as 1916 nature lovers and members of the academic community began voicing concern for the future of the bog. Walter Kiplinger wrote in *The Indianapolis Times*:

"There certainly are a few people in Indianapolis who hope that this one bit of wild land will remain unconquered...It seems to have a character of its own, an aggressive personality that excites admiration; and it is with almost childish satisfaction that one has observed the failure of the various attempts to drain and "improve" the place...We are going to need such places as this in the future and they ought to be preserved."

One of the "improvements" to which Kiplinger referred was the attempt in 1914 to build a dirt and gravel road across the swamp. The following winter a portion of the road disappeared as the weight of the road bed compressed the loose, water-soaked peat. In its place appeared a rectangular area of open water near the center of the swamp. Another attempt was made by WPA workers in 1937 with the same result.

Following World War II development pressures increased, and Bacon's Swamp began a rapid decline. Lowering of the water table, felling of trees on the north end of the swamp, periodic peat fires, installation of a drain, and illegal dumping, all posed serious threats to the integrity of the swamp's natural communities.

In 1945 Drs. Friesner and Potzger, of Butler University, pleaded with the Indiana Department of Conservation to consider turning the area into a natural history preserve. The department director replied that he believed the preservation project would best be handled by a city or school agency. In 1946 the Indianapolis City Park Board pledged to accept responsibility for perpetual care of the swamp and to protect the area from future commercial exploitation. The Director of Indiana State Parks also promised to investigate the possibility of creating a state preserve at Bacon's Swamp.

In the ensuing years, a series of tragedies led nearby residents to consider the swamp an attractive nuisance. In 1947 a child died in the large pond, and in 1956 three other children drowned when they fell through the ice in the northern portion of the swamp. That same year four proposals were generated in response to local calls for action: 1. Fence in the entire swamp; 2. Fill in the swamp; 3. Drain it; 4. Preserve it as a bird refuge and nature study area.

Bacon had sold the land in 1872, and the property had been subdivided and passed on by a series of different owners over the years. In 1956 several different people owned sections of

the swamp land, making it virtually impossible to coordinate a unified course of action. To solve the nuisance problem, some landowners decided to allow fencing around the perimeter of their portion of the swamp. Others requested their portion be filled in. Although city officials had been warned of flooding problems which would result from any attempts to fill the bog, filling began on the north portion. Shortly after fill operations began, reports of flooding in adjacent residential areas prompted the city to halt. Arrangements were made for a sewer to be constructed to counter the flooding and allow the city to continue fill operations.

A year after the drownings many officials were still debating the same basic options. The Metropolitan Plan Commission prepared a plan for a nature preserve and park, while at the same time filling resumed in the northwestern portion of the swamp. The city responded with a two thousand dollar appropriation to construct a fence along the northern border of the deepest part of the bog.

The greatest impact to the swamp however, came when a peat-mining company announced plans to reclaim Bacon's Swamp in the late 1950s. Reclamation costs would be financed by proceeds from the sale of the high-grade peat.

Within five years of that announcement, the natural features of the area had been almost completely destroyed. Chatard High School was constructed and the northern portion of the swamp was slated to be developed as the school's football field. Farther south the excavation and fill cycle enabled construction of the 56th Street extension. Given the depth of the peat in the bog it was estimated that it would take an additional six to eight years to mine the remainder of the marketable peat.

In 1989 a retirement village was constructed on the south end of the swamp. Behind that community, Bacon Lake (one of two ponds which are all that remain of the original 150-acre bog) is still a semi-natural area. This area bears no resemblance to the original glacial lake which began nature's cycle nearly 60,000 years ago. It serves only as a visual reminder of a community's efforts to alter the natural landscape. Their goal: to create a "more appropriate" cultural setting to conform with society's vision of an urban area.

Thanks to the Sierra Club Wetlands Project for permission to reprint this article from their October, 1994 newsletter, The Wetlander, and to The Village Sampler, May 1992, article by Alice Roettger.

Book Reviews

by Gil Daniels

Plants of the Chicago Region (4th edition). Floyd Swink and Gerould Wilhelm. Indiana Academy of Science, Indianapolis. 921 pages, 1994.

Although the title references Chicago, the flora included in this work are found in seven counties of northwestern Indiana. In typical botanical fashion the illustrations are limited to distribution maps for each species, but keys for both genera and species are available for use in determining identification. Strangely, for a botanical book of this sort, all taxa are arranged alphabetically with the family listings and their generic keys mixed in with the genera and their keys to species. Some help in the use of the keys is offered in the illustrated glossary which is included, but generally this is a technical work, which while providing an excellent coverage of the flora, is not for use by the faint of heart.



Tall Grass Prairie. John Madson (Photos by Frank Oberle). Falcon Press, Helena, Montana. 112 pages, 1993. \$29.50.

This beautifully illustrated book brings the full range of the life of the prairie to a coffee table in your home. Unlike so many books of this sort, the accompanying text actually has something to say. Both the history and the natural history of the prairie are worth reading about and should you want to venture out to see it for yourself, the final chapter lists 67 sites in 15 states where the remnants of the original prairie still exist along with descriptions of each site and instructions on how to get there.

Gil Daniels' background and involvement in activities horticultural and botanical is lengthy and impressive. Regarding recent affiliations: he was director of the Hunt (botanical) Institute at Carnegie-Mellon University, was president and acting executive director of the American Horticultural Society, and is immediate past president of the Horticulture Society of the Indianapolis Museum of Art. He and his wife, Emily, both charter INPAWS members, put in many hours on their own fabulous botanical collection at home.

Indiana Native Plant and Wildflower Society

MEMBERSHIP APPLICATION

Yes! I/we have been waiting for this exciting opportunity! Enclosed is a check for the following:

- | | | | | | |
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| <input type="checkbox"/> Student | \$10 | <input type="checkbox"/> Family | \$25 | <input type="checkbox"/> Sponsor | \$250 |
| <input type="checkbox"/> Individual | \$18 | <input type="checkbox"/> Patron | \$100 | <input type="checkbox"/> Corporate | \$500 |

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How did you hear about us? _____

Gifts Do Help

Your gift of any amount will be most appreciated. Donations above student, individual and family membership dues are tax-deductible to the extent provided by law. Gifts will be used to help further the programs and purposes of INPAWS, such as publishing a newsletter and providing services related to monthly programs.

Membership Categories:

- Student:* For full-time students under the age of 22. Benefits include meeting notices, one vote on organizational issues, newsletter, membership directory.
- Individual:* Benefits are the same as for student.
- Family:* Includes head(s) of household and dependents. Benefits include meeting notices, newsletter, membership directory, and two votes on organizational issues.
- Patron:* Benefits are the same as for family, plus donation.
- Sponsor:* Benefits are the same as for family, plus donation.
- Corporate:* Benefits include newsletter, meeting notices, directory, special recognition, plus donation.

I would like to help on the following committee(s):

- Annual Meeting
- Programs
- Special Projects
- Newsletter
- Membership
- Publicity/PR/Marketing
- Fund Raising
- Plant Rescue
- Field Trips
- Other

Please complete this form and mail, along with your check made payable to:

Indiana Native Plant and Wildflower Society

c/o Carolyn Harstad, 5952 Lieber Road, Indianapolis, IN 46208.

Join us at the plant auction and sale, Sunday, May 21 – see page 2

INDIANA
Native Plant and Wildflower Society

6106 Kingsley Drive
Indianapolis, IN 46220

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Organization
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Indianapolis, IN
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INDIANA

Native Plant and Wildflower Society

NEWS

Volume II Number 3

Autumn 1995



Spring Plant Auction a Success!

by Rolland Kontak, Auctioneer

"I've got 5, would-a-bid 6, now 7, gimme a 7, all in – all done? Sold for 6 dollars." So went the auctioneer's chant for about two hours on May 21 as several hundred native plants were sold for over \$1800 total.

Our third plant auction was held at the Lawrence Community Center, a fine venue, readily accessible, with a kitchen from which the committee provided complimentary snacks and beverages. Surrounding the audience were ten 8-foot tables loaded with fine Indiana native plants, many donated by INPAWS members who had propagated them in their own gardens. Several commercial sources also provided plants and a number of apparel and gift items.

The generosity of our donors was certainly overwhelming. Although it is risky to name names (possibly omitting someone) I hope you won't mind if I acknowledge with gratitude the 50 or so items donated by Juanita and Henry Graham. And the quality!! Four blooming ladyslippers, ginseng, purple flowering raspberries, ferns, and more. Thank you, gracious folks. (Maybe a couple of snow trilliums next year?)

Sun-loving prairie forbs were represented by several species of coneflowers, sunflowers, standing cypress, penstemons, rattlesnake master, queen-of-the-prairie, and many others. Shade lovers included jack-in-the-pulpit, green dragons, wild geraniums, pawpaw, spicebush, camass, *Trillium grandiflorum*, and dwarf larkspur. Water lovers included lizard's tail, arrowheads, and yellow pond lilies. Native grasses, ferns, and even a well-grown clump of moss were included.

Surely I have omitted many of the plant species, as there was a wonderful array to choose from. I hope that this summary will whet your appetite for our next auction, which will be held at Holliday Park, Indianapolis, on Sunday, September 24.

We need more unusual plants, trees, etc. Please contact your commercial friends for donations of plants and garden items. We can sell books, tools, garden videos, photos, and fine art. How about gentians? Also, consider making up 50-cent packets of cleaned and labeled native plant seeds for sale at the auction and future events.

We would like to recognize: Lynn Jenkins, Carolyn Harstad and Ruth Ann Ingraham for providing the refreshments, Mildred Kontak, who arrived early to set up, Phil and Brenda Milliren and Dorothy Gorman, who stayed to help clean up, runners Bill Brink, Sue Nord and Kevin Tungesvick, cashier Jean Vietor, Doug Spence of Spence Landscaping who generously donated a prairie seedling collection to the elementary school he outbid, and Anne Wilson, our chairperson. Many thanks!

Rolland Kontak is a charter member of INPAWS and is very active in propagating a wide variety of native plants at his residence in southern Marion County. Since he is a modest individual, he didn't bother to mention the many plants he has donated to INPAWS for every auction we've had. His professional services as an auctioneer are also greatly appreciated. Many thanks, Rolland!



Inside . . .

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INPAWS

Coming Events

Saturday, August 12

Field trip to Falls of the Ohio State Park. Here we will see the world's largest exposed fossil reef and learn about the plant life of the Ohio River valley.

Sunday, August 27

Indiana State Museum Auditorium (indoor program). Plans for the new museum in White River Park, and the intended use of native plants in landscaping the new facility.

Sunday, September 10

Field trip to Willow Slough to view wetlands, savanna and prairie chicken habitat.

Sunday, September 24

Seed and plant sale and auction at Holliday Park. Please call Anne Wilson at 812-342-6838 if you are going to attend, have something to donate, or for more information.

Saturday & Sunday, October 7 & 8

Joint event with Indiana Audubon Society, Mary Grey Bird Sanctuary. Also Shrader-Weaver Preserve. Details have not yet been finalized.

Flyers containing details of each program will be sent in advance of the event. For more information call any officer or committee chair.

Annual Meeting to Come

Mark your calendar for the second
INPAWS Annual Meeting

Saturday, November 4, 1995

beginning at noon at
Dow Elanco, Indianapolis

Nominations for 1996-97 Officers:

| | |
|-------------------------|------------------|
| President | Carolyn Harstad |
| Vice President | Kevin Tungesvick |
| Recording Secretary | Rebecca Dolan |
| Corresponding Secretary | Gil Daniels |
| Treasurer | Jean Vietor |

Submitted by Jan Lacy, Nominations Chair

The meeting will feature the election of officers, panel discussions, workshops, displays, photo contest, dinner and keynote speaker

Ken Druse,

internationally recognized author, award-winning photographer and acknowledged founder of the natural gardening movement. He is garden editor of *House Beautiful* magazine and the author of *The Natural Garden*, *The Natural Shade Garden* and *The Natural Habitat Garden*. He won two *Quill and Trowel* awards from the Garden Writers Association of America for *The Natural Garden* (for writing and photography).

More detailed information to follow.

Indiana Native Plant and Wildflower Society Newsletter

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Published quarterly by the Indiana Native Plant and Wildflower Society for members.

Officers 1993-1995

| | | |
|-------------------------|-------------------|----------------|
| President | Jeffrey Maddox | (317) 253-0659 |
| Vice President | Bill Brink | (317) 255-0166 |
| Corresponding Secretary | Ruth Ann Ingraham | (317) 253-3863 |
| Recording Secretary | Anne Wilson | (812) 342-6838 |
| Treasurer | Jean Vietor | (317) 823-1542 |

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| | | |
|-----------------------|-------------------|----------------|
| Membership | Carolyn Harstad | (317) 257-9452 |
| Newsletter | Dan Anderson | (317) 849-3105 |
| Nominating/Governance | Janice Glimn-Lacy | (317) 293-1207 |
| Plant Rescue | Kevin Tungesvick | (317) 354-2775 |
| | Sue Nord | (317) 782-0763 |
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| Public Relations | Katrina Vollmer | (812) 988-0063 |
| Publications | Anne Wilson | (812) 342-6838 |
| Publicity | Hilary Cox | (317) 272-4938 |
| Speakers Bureau | Colletta Kosiba | (317) 852-5973 |

The Mission of the Indiana Native Plant and Wildflower Society

is to promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the values, beauty, diversity and environmental importance of indigenous vegetation.

Newsletter Committee

| | | |
|------------------------|-------------------|----------------|
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| | Betty Trusty | (317) 831-6404 |
| Consulting Editor | Chris Carlson | (317) 257-5413 |

Submission of articles

Information for the newsletter is supplied by Society members and others interested in sharing information about Indiana native plants. Articles or drawings should be sent to the Editor, Dan Anderson, 7412 Graham Road, Indianapolis, IN 46250.

President's Message

Summer is in full swing now and I'm sure many of you are working in your gardens, yards and woods. How much time do you have to devote to the continuing battle against exotic species? Garlic Mustard is setting seed now so it is too late to effectively stop this species this year, but there is still European honeysuckle, bouncing bet, purple loosestrife and a host of other non-natives which we have time to fight this year.

I recently gave a presentation about the dangers of exotic species to a gardening association. It was extremely surprising to find these gardeners were only barely aware of exotic species! If these experienced people are only slightly aware of the problem, the general public may be totally unaware of this insidious problem which is ruining their natural heritage and altering the world around them.

We set up some garlic mustard in our booth at Orchard in Bloom. Many folks passing by were shocked to learn this "pretty white flower" was responsible for the decline of many of the native plants we had displayed on the other side of the table.

There is so much to do and to teach. Native plants and communities need societies like INPAWS now more than ever! We need to raise awareness of native plant issues in a public which has forgotten the importance of their ties with the natural world.

So please get active with INPAWS. There are a lot of great ideas just waiting for someone to pick them up and give them life. I hope you've responded to Colletta Kosiba's call in the last newsletter for people to become speakers. We are getting many requests for speakers and information on INPAWS. It would be great to start some youth projects also. What ideas do you have?

Join me in making INPAWS a strong champion for native plants. This society will live or die by your participation.

What Flowers When? with Hints on Home Landscaping

by Janice Glimn-Lacy

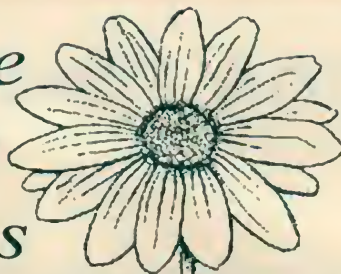
Discover the actual flowering periods of over 200 hardy trees, shrubs, and perennials in USDA Zone 5, recorded in Indianapolis, and helpful home landscaping advice on planning, choosing plants, making flower beds, grooming your garden and keeping records. A resource you'll reach for again and again. Paperback Book \$19.95 (5% IN tax; S&H \$3.50, more \$1 each).

The Flower and the Leaf, Mail Order Service

P.O. Box 53514

Indianapolis, Indiana 46253-0514.

Welcome New Members



The following folks have demonstrated their interest in native plants by joining our group during the past three months:

Judy and Donald Armstrong, Phyliss Benn, Mary Berghoff, Steven Worth and Cathy Clark, Ann Cox, Diantha DeGraw, Michael Eoff, Dorothy and Charles Finney, Cindy Florek, Kathy Goble, Rev. Mark Gottemoeller, Eloise Hamp, Roger Hedge, Chris Hossler, John Maier, Jo Ellen Miller, Mary Jo Mills, Bruce Nelson, John and Karen Packer, Ralph Parker, Merlissa Schmidt, David and Katrina Seitz, Eric Spangler, Jacci Spaulding, Nancy Sharpe, Rose Marie and Michael Stiffler, Juliette Spears, Lynn Wiseman, Alice Young, and Mrs. Victor Vollrath. We hope that all of you will become active members and take part in our many field trips and seminars throughout the year.

Space does not permit the listing of names and addresses at this time, but a new directory will be published at the beginning of next year, and all new members will be included. Carolyn Harstad, Membership Chair, announced at a recent board meeting that INPAWS now has 458 members in 356 individual homes.

You asked for it — clip and save
by Janice Glimn-Lacy

V i b u r n u m s

Native

| | |
|-----------------------------|-------------------------------------|
| <i>Viburnum acerifolium</i> | Maple-leaved Viburnum, Arrowwood |
| <i>V. alnifolium</i> | Hobblebush, American Wayfaring Tree |
| <i>V. dentatum</i> | Arrowwood |
| <i>V. lentago</i> | Nannyberry, Black Haw |
| <i>V. prunifolium</i> | Black Haw, Sweet Haw, Sheepberry |
| <i>V. trilobum</i> | Cranberry Bush, Highbush Cranberry |

Non-Native

| | |
|-------------------------------|--|
| <i>Viburnum x Burkwoodii</i> | (<i>V. Carlesii</i> x <i>V. utile</i>) Korea, China |
| <i>V. x carlcephalum</i> | (<i>V. Carlesii</i> x <i>V. macrocephalum</i>) Korea, China |
| <i>V. Carlesii</i> | Koreanspice Viburnum |
| <i>V. x Juddii</i> | (<i>V. bitchiuense</i> x <i>V. Carlesii</i>) Japan, Korea |
| <i>V. lantana</i> | Wayfaring Tree, Twistwood, Eurasia |
| <i>V. macrocephalum</i> | Chinese Snowball, China |
| <i>V. opulus</i> | Cranberry Bush, Eurasia |
| <i>V. plicatum tomentosum</i> | Doublefile Viburnum, China, Japan |
| <i>V. x rhytidophylloides</i> | (<i>V. lantana</i> x <i>rhytidophyllum</i>) Eurasia, China |
| <i>V. sieboldii</i> | Japan |

The Pawpaw Paradox

by David J. Ellis

(Reprinted with permission from the February 1995 *American Horticulturist*).

How has a tree bearing the largest fruits native to North America come to be known to most Americans only as a reference in a whimsical folk song? Native to the eastern half of the United States, the pawpaw (*Asimina triloba*) bears exotic-flavored and nutritious fruits which can be eaten in hand or made into desserts. Its bark and seeds contain potent compounds with promise as organic pesticides and cancer-fighting drugs. Some feel that its graceful form and almost-tropical foliage make it an outstanding ornamental plant for landscaping.

Drawbacks of the pawpaw fruit include a thin, soft skin, which makes it perishable and difficult to market, highly inconsistent flavor of the wild fruit, and the 10-12 large seeds that make the fruit difficult to eat. Its proponents claim, however, that selective breeding could, in the next 20-30 years, improve the quality to encourage sales in specialty markets and to promote use in desserts in better restaurants from coast to coast.

The genus *Asimina* contains the only North American representatives of the Annonaceae, the custard-apple family. Seven of the eight species are confined to Florida or the South Atlantic and Gulf Coasts, and are smaller than *A. triloba*.

When grown in the open, pawpaw trees are 15-30 feet tall, and roughly pyramidal in shape. The glossy, dark leaves droop from the branches somewhat in the manner of magnolias. In early spring, before the trees leaf out, the triangular-petaled flowers appear. Curving downward off short stems, the flowers have three outer petals framing three smaller, fleshy inner petals. Initially green, the flowers turn brown to purple and exude a disagreeable musky odor as they mature. The roughly oval fruits are from three to six inches long and weigh from eight to twelve ounces. The green outer skin changes purple or black as the fruit ripens. Unfortunately, many stands of wild pawpaws bear only a small amount of fruit, as the trees are usually self-incompatible, and a genetically-different tree is needed for successful pollination.

If and when the pawpaw does achieve the recognition its supporters envision, much of the credit will belong to the PawPaw Foundation, a 300-member non-profit organization

devoted to furthering research on and interest in the pawpaw. The group was founded by R. Neal Peterson, an agricultural economist with the U.S. Department of Agriculture in Washington, D.C.

Several commercial nurseries are breeding and selling increasing numbers of pawpaw seedlings and grafted plants, and this year field tests of 28 varieties will begin at 15 university sites in various sections of the country. Data will be recorded on variables such as tree growth, blossom and fruit set, fruit attributes, and water and fertilizer requirements.

Biologically-active compounds are found in the skin and flesh of unripe fruit, the seeds, twigs and bark. Animals which eat unripe pawpaws are likely to become nauseated, and will most likely leave unripe fruits alone in the future. A small percentage of humans is sensitive to the fruit, particularly if it is underripe.



One of that number is Jerry McLaughlin, from Purdue University. Ironically, he has been working to isolate and identify compounds from pawpaws with possible medicinal and insecticidal applications.

To date, he has isolated nearly 30 compounds having biological activity from *A. triloba* and 45 from *A. bullata*, a close relative found in Cuba. One of his extracts, in very low concentration, has shown activity in killing cancer cells, but is also toxic to normal cells unless the concentration is tightly regulated. Another extract kills pests such as nematodes, tomato hornworms, bean beetles and potato bugs.

R. Neal Peterson believes that, if successful applications for pawpaw compounds are found, increased cultivation will be able to supply the demand until synthetic compounds become available. In the meantime, improvements in the quality of the fruit might earn pawpaws a place in supermarkets and specialty stores alongside other exotic fruits as kiwis and mangoes.

For further information about pawpaws, write to the

Pawpaw Foundation
P.O. Box 23467
Washington, D.C. 20026

or call 202-484-1121.

David J. Ellis is assistant editor of *American Horticulturist*.

Free for the Eating

by Dan Anderson

The middle and latter days of summer provide the forager with a somewhat reduced choice of edibles, as many of the herbaceous plants have become tough and stringy, and have begun to go to seed. However, for the mushroom fancier, there are still a number of excellent species to be found.

Many mushroom hunters confine their efforts to hunting morels in late April and early May. (See *Morel Mania* in the spring 1995 issue of this newsletter). Morels are considered sufficiently distinctive to be "safe," although the false morel *Gyromitra esculenta*, vaguely similar in appearance, is questionable as to edibility and may be poisonous to some people.

The mushrooms to be described here range from pleasant-tasting, as in the case of puffballs, to true gourmet quality, in the same league as the more famous morels. All are distinctive in appearance, and are readily distinguished from inedible or noxious species that might be found at around the same time.

Cantharellus cibarius

The chanterelle, *Cantharellus cibarius*, is usually found in small groups on the forest floor during July and early August, although this year I found some just coming up on June 30th. Unlike the morels, its dull orange color makes it fairly easy to spot from some distance away, unless there is a scattering of yellow leaves on the forest floor. The shape of the mushroom is somewhat irregular, and the edges are often curled downwards, and there is no definite demarcation between the stem and the cap. A poisonous species resembling the chanterelle is the Jack O'Lantern, *Omphalotus olearius*. This species grows in clusters of several to many mushrooms arising from a single base, instead of singly, as with the chanterelle. A comparison using illustrations from a good mushroom book is necessary if you are not familiar with the species.

Chanterelles should be cut in half through the stem and soaked in salt water for 15-20 minutes to help remove any small critters that might be present. They have a somewhat lower water content than other mushrooms, so will not shrink as much when cooked. They can be sauteed or used in casseroles or gravies. Any liquid remaining from their cooking is a precious commodity, and should be used for special occasions in cooking.

Pleurotus ostreatus

The oyster mushroom (*Pleurotus ostreatus*) grows on the sides of trees or fallen logs much in the same manner as the more familiar bracket fungi or shelf mushrooms, but unlike them, has gills instead of pores. As with the chanterelle, there is no definite cap, the latter being a gradual enlargement of the stem which then folds over. Most oyster mushrooms are white, although I have seen tan or olive-colored tops if the mushrooms have grown in a sunny environment. The gills and stem are white. Oyster mushrooms can be found throughout the year, whenever the weather is warm and there have been recent rains. Several crops each year can be gathered from the same tree or log.

This species tends to deteriorate fairly quickly, so select only specimens that are firm and with little or no insect infestation. Cutting and soaking (as above) are recommended. Use in any of your favorite mushroom recipes, or saute and serve on toast.

Lycoperdon perlatum

Calvatia gigantea

Fall brings the tribe of puffballs, ranging in size from the small pear-shaped puffball (*Lycoperdon perlatum*) through the dinner-roll size, to the giant puffball (*Calvatia gigantea*) which may attain or exceed the size of a basketball. Puffballs are edible provided the interior is firm and white. The flavor is not as pronounced as that of other mushrooms, so they would not be effective in flavoring meats, gravies, or other dishes. They can be used best by slicing to about 1/4 inch thick or slightly less, sauteing or dipping in batter and deep-frying or microwaving, then serving as you would fried potatoes.

I hope that some of you will have the opportunity to sample one or more of these treats before the end of the year!

Dan Anderson and his wife Sophia are charter members of INPAWS who have enjoyed a wide range of edible wild greens, mushrooms, nuts and fruits, and an occasional snapping turtle or muskrat over the last thirty years.

Multiflora

DNR Outdoor Recreation

The DNR is inviting volunteers 18 or older to enjoy a "volunteer vacation" working alongside the South Streams and Trails field crew to help maintain and improve the 58-mile Knobstone trail, which runs through several state forests in Clark, Scott, and Washington Counties. Volunteers will meet Sunday evening, September 3, at the Clark State Forest campground. Workdays will be 9 A.M.-3:30 P.M. on the following Monday through Friday. Work will include clearing trail, setting steps and waterbars, incutting, and cleaning. The week will end with a Friday afternoon "thank you cookout." Anyone interested must bring camping gear and food; work tools will be provided. An application must be submitted by August 7, 1995. If you receive this word late, or would like more information, please call DNR Division of Outdoor Recreation at 317-232-4070.

Return of the Goldenrod

The Falls of the Ohio State Park will, after more than 100 years, again be the home of a rare species of goldenrod, Short's Goldenrod (*Solidago shortii*). The plant was discovered on Rock Island in the Falls area on the Kentucky side, but was found on the Indiana side two years later, in 1842. Rock Island no longer exists, but other suitable habitats exist on the Indiana side. Seedlings from the Kentucky site, Blue Licks State Park, will be planted in those sites and carefully tended by park naturalists until rooting takes place.

Barb's Heirloom Vegetables

Did you see the food section of the Indianapolis Star for June 21st? INPAWS member Barb Kaczorowski was featured in an article describing the "heirloom" varieties of vegetables and fruits with which she works. These are varieties with special characteristics, which are not suited to large-scale farming and commercial use, but have been passed down from one generation to another as prized heirlooms. Great picture and excellent article!

Tippecanoe Plants Checklist

An Annotated Checklist of the Plants of Tippecanoe County is a new 92-page book which has recently been released by the Sycamore Audubon Society. The book lists over 1000 species of flowering plants and 500-600 non-flowering plants found in the county from the earliest botanical studies to date. It covers mushrooms, algae and rusts along with the more well-known flowering species. The author is John McCain, who received his doctorate at Purdue from the Department of Botany and Plant Pathology. He worked at Purdue as a teaching assistant and as an assistant curator in the Purdue herbaria. He is currently affiliated with the Cereal Rust Laboratory, USDA-Agricultural Research Service, in St. Paul, Minnesota.

Copies of the book are available at Goodness Grocery, Von's Bookstore, University Bookstore, and Follet's Bookstore, all in West Lafayette. They may also be ordered by mail for the price of \$10.00 plus \$1.00 postage from:

Sycamore Audubon Society
P.O. Box 2716
West Lafayette IN 47906.

Nature Walks at Butler

Dr. Rebecca Dolan, director of the Friesner Herbarium of Butler University, has provided the schedule of free fall nature walks on or near the Butler campus.

Tuesday, September 12

will feature a visit to the Butler prairie.

Wednesday, October 11

the theme will be *Mushrooms and Other Fungi*, and

Tuesday, November 14

How to Identify Common Evergreens.

Walks will begin at noon and will last about 50 minutes, with the starting point behind Gallahue Hall near the greenhouse. There may be some muddy walking involved, so please be prepared.

IMA Lectures

The Indianapolis Museum of Art Horticultural Society will sponsor a series of free lectures this fall in the DeBoest Lecture Hall on the lower level of the IMA.

Tuesday, September 12

Transforming an Estate Garden from Private to Public

Tuesday, October 17

New Flower Varieties from Seed

Monday, November 20

Horticulture on the Internet

Monday, December 4

Renovation of Garfield Park Conservatory

All lectures will begin at 8:00 PM. If you would like additional information, please call Wendy Ford at 317-334-1932.

Flowering Handbook

Janice Glimn-Lacy, INPAWS member, has just published a softbound handbook, *What Flowers When?* This reference will give the actual flowering periods of more than 200 species and the actual dates of flowering in Indianapolis over the past six years, and will be of value in planning color combinations and ensuring a colorful garden all year long. Please see ad on page 3 for ordering details and more info.

INPAWS July Field Trip

About 50 INPAWS members and guests made a trek through portions of Hancock, Madison and Henry counties during a triple-header event on Sunday, July 9th. Our first stop was Bill Arnold's Indiana Field Guide Park. Bill and associate Billy Wilcox create animal and bird sculptures from wire, and place them in natural settings with special attention to native plants. Next, we saw the prairie restoration projects conducted by the DNR at Province Pond, just west of Mount Summit. Finally, the caravan drove to the home of Kevin Tungesvik, Plant Rescue Chairman. Kevin showed off his recreated strip of prairie and some of the native plants with which he has been working. Kevin also hosted a hot dog roast with salads, fruit, pretzels, chips and other goodies. Rolland Kontak auctioned off four plants from his garden. Thanks to Kevin and everyone else who helped make the day such an enjoyable event!

Holliday Park Programs

Holliday Park in Indianapolis is offering a series of informal nature hikes every other Saturday, beginning at 10 AM. No registration is required and the whole family is invited.

September 9 *Parachutes and Tag-Alongs* (a study of seed dispersion)

September 23 *Fabulous Fall Wildflowers*

October 7 *Unmasking Trees* (tree identification)

October 21 *Take a Peek at the Peak* (fall colors)

An Appointment with the Doctor with Dr. Rebecca Dolan

September 23 *Fascinating Ferns* 1 to 2 PM

November 4 *Native Trees* 10 to 11 AM

November 9 *How Plants Get Their Names* 7 to 8 PM

To register for this series please call 317-327-7180.

INPAWS Newsletter Goes to the Library

Our newsletter has been approved for inclusion in the reference section for all branches of the Indianapolis-Marion County Public Library. If you live in an area served by another library system, we invite you to take a copy of the newsletter to your local library and show it to the reference librarian. We will be glad to put your local library on the mailing list if the librarian approves. This will help spread the word about INPAWS and make available to a wider audience the articles and information from our contributors.

4-H Members Enter Wildflower Exhibit

Congratulations to the 4-H members who entered a wildflower exhibit in the 1995 Marion County Fair. The exhibits included pressed plants and flowers, drawings and photographs.

1. Grace Metzler, age 11, Champion.
2. Claire Stroodbeck, age 11, Reserve Champion.
3. Erica Daming, age 10, First.
4. Katie Klein, age 14, First.
5. April Schelske, age 11, First.
6. Brigitte Watkins, age 17, First.
7. Julia Meyer, age 10, Second.

The exhibits followed guidelines in the Marion County 4-H wildflower booklet written by Carolyn Harstad (INPAWS founding member) as a Master Gardener's project, and updated by Dan and Sophia Anderson (INPAWS charter members). Workshops for 4-H members were offered by the Andersons at the Marion County Extension Office. They were assisted by Joe and Ruth Ann Ingraham (INPAWS founding members).

Wildflower Photography

by Tom Potter

Late summer and autumn pose special challenges to the craft of wildflower photography. A cluttered image is the most common problem at this time of year. The fundamental rule of good wildflower photography is *keep it simple!*

As we all know, the flowers of late summer and fall are, for the most part, composites. These plants tend to have numerous flowering stalks and heads, making it difficult to capture the essence of the structure and the beauty of the flower in a non-cluttered image. Thus, you will need to seek out a plant in a somewhat isolated setting. This is not easy, but they are out there, and the effort will pay off.

When you look through the viewfinder, be sure to look edge to edge and see the entire image area, not just that to which your eye and brain are psychologically tuned into at the moment. You can easily isolate what you like, but the film records all detail in a scene. That is why so many anticipated images come back from the processor as disappointments. It takes only a second to click the shutter - but more time to achieve the composition that will provide a lasting, high-quality image.

Photograph your subjects early or late in the day. The light is warmer then, adding to the richness of color saturation. The breeze is generally lighter, causing less swaying of the flowers. (The movement prohibits the use of slower shutter speeds, which help define the desired depth of focus. See previous article on depth of field or request another for your review).

When you can isolate a sunlit subject from a shaded background, that is ideal. That is often the case when the sun is at a low angle, in early morning or in late afternoon. Often in fall a morning dew will enhance the subject, adding a special dimension to the image, such as a jewelled spider web or insect.

For the detail and snap that you want of these complex flowers, use a slow-speed film that provides both high resolution and fine grain. The slower films also produce the best color saturation. Choices include Kodachrome 25 and 64, Kodak Ektachrome 100, Fujichrome Velvia and Fujichrome Provia 100.

For a more ethereal look, consider a high-speed film providing more grain to the image. The same result can be obtained by using a finely meshed screen material or special filter over the front of the lens. The viewfinder should allow you to see the results before shooting.

To photograph an entire field of ironweed or daisies, the control of field depth is important, so use as small an f-stop as

possible, say f11-f22, depending on your lens of choice. Wide angle lenses provide the best depth and allow you to place the near objects very close to the front of the camera. This will provide a seemingly vast sweep of flowers, often exaggerating the scene - a great technique.

If you tilt your camera to show just a little sky, the flowers will seem to sweep to the horizon! It is best to use a tripod at all times, especially when you are using slow shutter speeds with low f-stops.

A telephoto lens can provide a tighter image for a field of composites. This type of lens compresses images, creates a sense of compactness. Try putting this lens on and observing the image it creates in the view finder. A good technique is to alternate the telephoto and wide-angle lenses when working in a field of flowers.

Since many fall flowers are tall, consider a vertical format. Try setting up your equipment at a low level to give an even setting for the tall plant, placing the flower head toward the top of the scene.

In conclusion, to create the desired images for this season, remember to:

1. Work early or late.
2. Select uncluttered scenes.
3. Watch for, and use, dark backgrounds.
4. Select a high-quality, low-speed film.
5. Use a tripod.
6. Try a wide-angle lens for sweeping fields of flowers.
7. Use a telephoto lens for compressing a scene.
8. Use a vertical format for tall plants.
9. And above all, BE PATIENT!

Tom Potter is a professional photographer and INPAWS charter member living in Martinsville.

“... the flowers will seem
to sweep to the horizon!”

Walking in the Rain

by Bob Frantz (August, 1990)

It is nearly dark and I just came in from a delightful walk in the rain. This has been a summer when rain has been plentiful and we have the promise of good crops of corn, soy beans and hay. We have already had an abundance of wildflowers, grass, mosquitoes and wild raspberries. Incidentally, I broke my 1985 record of raspberries picked in one season – eighty-four pints. My old record was seventy-four, which I didn't think would ever be broken, at least by me. I started to write about walking in the rain, but became distracted by the subject of raspberry picking. I am sure that in the minds of most people, one is about as foolish as the other.

Alice and I have always enjoyed walking in the rain, but on most of our rain walks some of the pleasure was taken away by rain suits that didn't always keep us dry and made us sweat like hay makers in July. Now, thanks to encouragement and Christmas money from our children, we have rain suits with a lining made from a miracle synthetic fabric called Gore-Tex®. The manufacturer tells us that it contains nine billion (no, I didn't make an error in the number) mis-aligned pores per square inch. This figure boggles our minds, but as long as it keeps the rain out and we don't perspire, we won't worry about how it is made or how it works.

This evening I wandered on some of our woodland trails as the gentle drops of rain filtered through the trees making a comforting sound, not unlike a soft breeze. I walked near the Big Swamp and watched the myriad little splashes as the drops ruffled its surface. Most years in August, the swamp is nearly dry and I can find my way across it on the trail I made a couple of years ago. Now it is near to overflowing, and I am sure that I would have a hard time finding my way through the lush growth of swamp grass and button bush, even if I could wade through the water. I paused a bit and tried, with my eyes, to penetrate this jungle-like area of Wildwood. I wondered what might be hiding just beyond my view. Perhaps wood ducks or mallards or green herons or muskrats or maybe even a great blue heron seeking some unlucky frog or small snake with which to feed its young.

I stepped into an open grassy area where a deer was nibbling grass in the rain, but it really didn't appreciate the invasion of its privacy and quickly dashed from sight. I spent an hour or more, with the rain falling steadily, looking into open fields, perchance to see more deer, and into the dense woodlands which became a completely different world in the rain.

I paused again to reflect a bit in the wet woods and revel in its peaceful isolation. I felt so far away from the turbulence of highways and cities. I thought of far-off places and some not so far, where people fear for their lives, where guns might threaten them or bombs blow them into eternity. I wished that everyone could share my peaceful experience once. It could change their lives. Then I brought myself back to reality. The birds, which I knew were all around me, were quiet and the wind was not stirring. I heard only the steady patter of the rain on the trees. The rain started coming a little harder, but I was still dry, except where a few of the cool drops found their way down my neck to the front of my shirt. It is still early in the season for puffballs, but I waded the puddles of water on the trail where they grow. I found no sign of them – perhaps in two or three weeks they will appear.

It is now the morning after and I am looking out of our den window into the lush and very dense woods. It is not raining and it is impossible to recall and describe the feeling of actually being in it. Putting into words the experience of walking in the rain might be compared to describing a sunset or a snow drift or frost on a window pane. If you really want to know how it feels to take a woodland walk in the rain, you must do it yourself. There is no other way.

Bob Frantz and his wife Alice are dedicated to preserving a 90-acre "wasteland" as much as possible in its natural state. Named Wildwood, it is a portion of a former family farm near Silver Lake, Indiana, and is comprised mostly of woodlands and swamps. This essay comes from Bob's collection of writings entitled If You Stand Very Still...Thoughts and Experiences from the Woods.

Indiana Native Plant and Wildflower Society

MEMBERSHIP APPLICATION

Yes! If we have been waiting for this exciting opportunity! Enclosed is a check for the following:

- | | | | | | |
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| <input type="checkbox"/> Student | \$10 | <input type="checkbox"/> Family | \$25 | <input type="checkbox"/> Sponsor | \$250 |
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NEW RENEWAL

How did you hear about us? _____

Gifts Do Help

Your gift of any amount will be most appreciated. Donations above student, individual and family membership dues are tax-deductible to the extent provided by law. Gifts will be used to help further the programs and purposes of INPAWS, such as publishing a newsletter and providing services related to monthly programs.

Membership Categories:

- Student:** For full-time students under the age of 22. Benefits include meeting notices, one vote on organizational issues, newsletter, membership directory.
- Individual:** Benefits are the same as for student.
- Family:** Includes head(s) of household and dependents. Benefits include meeting notices, newsletter, membership directory, and two votes on organizational issues.
- Patron:** Benefits are the same as for family, plus donation.
- Sponsor:** Benefits are the same as for family, plus donation.
- Corporate:** Benefits include newsletter, meeting notices, directory, special recognition, plus donation.

I would like to help on the following committee(s):

- Annual Meeting
- Programs
- Special Projects
- Newsletter
- Membership
- Publicity/PR/Marketing
- Fund Raising
- Plant Rescue
- Field Trips
- Other

Please complete this form and mail, along with your check made payable to:
Indiana Native Plant and Wildflower Society
c/o Carolyn Harstad, 5952 Lieber Road, Indianapolis, IN 46208.

Coming in November – the Annual Meeting – see page 2

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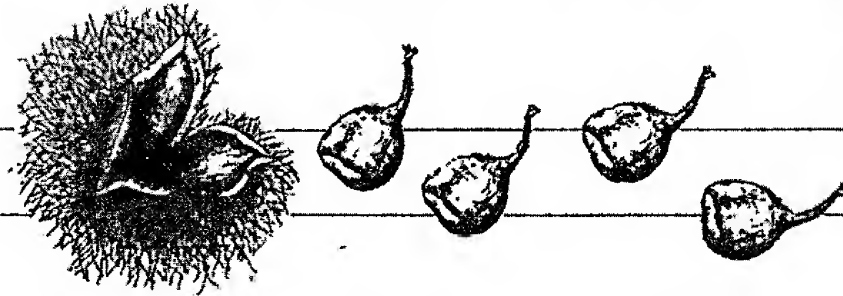
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Winter 1995

Hope for the American Chestnut?

For thousands of years following the end of the last Ice Age, the American chestnut (*Castanea dentata*) was one of the major components of the forest that, except for prairie lands, stretched from the Mississippi River to the Atlantic Coast. The wood, as durable as oak, was treasured for furniture and other applications where a wood of great beauty and durability was desired. Collecting chestnuts was a source of food and income for many American families, as there was a great demand for chestnuts in the cities and towns of America.

In 1904, a destructive fungus (*Cryphonectria parasitica*) was unintentionally imported with some Chinese chestnut trees. Although the fungus did some damage to the trees in the Orient, many were resistant or partially resistant to it. Unfortunately, the American chestnut had no such resistance. From its initial appearance on the East Coast, the fungus spread at a rate of 20-50 miles per year until by 1950 the entire population of American chestnuts had been reached. Virtually every tree had been killed, although the roots were relatively unaffected, and would continue to send out suckers until they were destroyed by the fungus. One stand of about 43 trees, in an isolated spot along the coast of Maine, escaped the blight until about ten years ago, when signs of infection began to be seen. Affected trees are being treated, although it remains to be seen if they can be saved.

The American Chestnut Foundation, a not-for-profit corporation, was formed in 1983 with the goal of restoring the almost-extinct tree to its rightful place in American forests. The goal is to incorporate the blight resistance of the foreign chestnut in the genetic structure of the American species without losing the desirable characteristics of the native form. Thanks to a gift, the Wagner Research Farm near Meadowview, Virginia, has been established as an experimental station for the breeding of trees which will combine the blight resistance of foreign species with the desirable qualities of the American chestnut.

The breeding program is based on a hypothesis developed by Dr. Charles Burnham that states resistance to blight is controlled by a relatively small number of genes. Therefore, by judicious backcrossing for several generations, it will be possible to develop trees that are virtually identical to the American chestnut of the past. Chinese chestnut has been selected as the breeding partner for several stocks of domestic chestnut trees which have survived long enough to produce nuts. (Chestnut trees are not self-pollinating – pollen from one tree is required to fertilize the flowers of another, therefore crosses are possible – Ed.). Offspring of the crosses usually survive and develop successfully. Theoretically, a Chinese x American hybrid crossed twice to American trees should give a population that is genetically 7/8 American, except for the chromosomal regions that contain the genes for blight resistance. However, the population would not breed true, and an additional number of backcrosses would be needed until the population would be essentially that of American chestnut.

Chestnut continued on page 2

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Nuts are planted in a statistically random fashion, with 6-10 high resistance control plants per 500 test plants. Young trees with expected high fungal resistance are inoculated with the fungus after about two years; those with low to intermediate resistance after about five. Inoculation entails removing a plug of bark and inserting an agar disc containing mycelia of the fungus. After the young trees have been screened for resistance, most will be cut down to reduce the amount of blight fungus at the farm. Additional studies are being carried out in several forest locations, using flowering chestnut sprouts originating from the still-surviving roots.

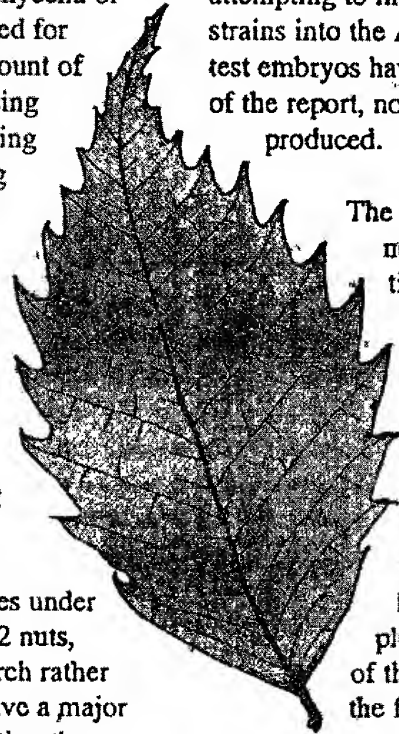
Pollination at the research station is by hand. Only one nut is produced per pollination bag, and one person does well to place 200 bags in a 12-hour period. Fortunately for the breeding program, many seedlings bear male flowers at 1 to 3 years of age, and female flowers at 3 to 4 years. Natural pollination will result in more nuts, but the waiting time for nut production will be greatly increased.

In 1992, there were slightly over 3000 chestnut trees under evaluation at Wagner. Nut production was only 572 nuts, 286 from backcrosses, and the remainder for research rather than breeding purposes. Weather conditions can have a major effect on the breeding program, especially as affecting the number of nuts produced.

There appear to be strains of *C. parasitica* which are of relatively low virulence, but it is felt that inoculation of trees with the non-lethal fungus strain would not be an answer to the blight problem, as the hypovirulent strains would eventu-

ally weaken the tree by a series of low-level infections. A possible solution to the blight problem would be genetic engineering of the American chestnut for blight resistance in combination with injections of hypovirulent fungal strains. Several researchers are working with chestnut embryos, attempting to introduce DNA from high-resistance chestnut strains into the American embryos. Cultivation techniques for test embryos have been worked out, although at the writing of the report, no mature embryos or plantlets had yet been produced.

The re-introduction of the American chestnut will not be an easy task, as several more generations of trees will have to be produced before the success of the backcrossing program is known. Because of the wide altitude and climate range in which the American chestnut was found, a number of different strains may be required for best results. Then will come the difficult and time-consuming task of breeding thousands of seedling trees which can be re-established in their natural habitats. We should all be grateful to the people who are devoting their efforts to restoration of the American chestnut to its rightful place in the forest community.



Material on which this article is based was supplied by the American Chestnut Foundation, a not-for-profit corporation. Research programs are funded by member dues and donations. For more information write the Foundation at 469 Main St. Box 4044, Bennington VT 05201-4044.

Indiana Native Plant and Wildflower Society Newsletter

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The Mission of the Indiana Native Plant and Wildflower Society

is to promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the values, beauty, diversity and environmental importance of indigenous vegetation.

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Submission of articles

Information for the newsletter is supplied by Society members and others interested in sharing information about Indiana native plants. Articles or drawings should be sent to the Editor, Dan Anderson, 7412 Graham Road, Indianapolis, IN 46250.

Illustrations: Chestnut Husk, Nuts and Leaf, Jan-Glimm-Lacy; Garlic Mustard, Biology Department, Butler University; Mushrooms, Melissa Scarlett; Sea Oats and Photos, Anne Wilson

President's Message by Jeffrey Maddox

As the year draws to a close and we look forward to the winter, my presidency comes to an end also. Thank you for giving me the opportunity to serve. We have had many successes during these first years of INPAWS including:

- great field trips all over the state
- a packed, informative newsletter
- several fabulous auctions
- a speakers bureau was formed
- our first chapter organized in Muncie
- we wrote letters, funded, testified, and worked for many projects with several different partners.

And this is only a portion of our work! All this would not have happened without the work of my co-officers and the rest of the board. They have worked long and hard to get us where we are now.

We all owe the board a hearty "Thank you!" for all of their good work. I would like to recognize Carolyn Harstad, who will be continuing her extensive involvement in all aspects of INPAWS activities as the next president. She has a lots of good people helping her, so I'm confident INPAWS can only continue to grow and prosper. Good luck to all of you!

INPAWS has a future full of potential. Native plant issues are getting a lot of attention now (as they should) and we can be an important force in shaping these issues. We have dozens of great ideas and projects to develop and dozens of good people to implement them with us. As more chapters are formed, we will expand our presence in the state and have a greater impact on local issues. All of this growth and developing resources need to be planned and directed with INPAWS' future in mind. As we pass the torch from one board to another, think about where you want INPAWS to go and how you're going to help get us there, and, let your board know it too!

INPAWS Coming Events

* Carolyn and Peter Harstad *
* will again host a *
* *
* * **Holiday Party** * *
* *
* to be held *
* *
* **Saturday, December 9, 7 PM,** *
* at their home, *
* *
* **5952 Lieber Road, Indianapolis.** *
* Watch for your invitation in the mail. *
* If you don't receive one call *
* Anne Wilson, 812-342-6838, or *
* Ruth Ann Ingraham, 317-253-3863, *
* for more information. *
* *We hope you will join us!* *

Distinguishing Dogwoods

by Janice Glimn-Lacy

| | |
|----------------------------|-----------------------------------|
| Native | |
| <i>Cornus alternifolia</i> | Pagoda Dogwood, Green Osier |
| <i>Cornus amomum</i> | Silky Dogwood |
| <i>Cornus florida</i> | Flowering Dogwood |
| <i>Cornus sericea</i> | Red-Osier Dogwood |
| | |
| Non-native | |
| <i>Cornus alba</i> | Tartarian Dogwood, Siberia, China |
| <i>Cornus kousa</i> | Kousa Dogwood, Japan, Korea |

Free for the Eating by Dan Anderson

This year has not been one of the better ones for the lover of wild edible foods. Rain seemed more erratic than usual, with long periods of dry weather interspersed with short periods of heavy rainfall. August in particular baked many plants in spite of the frequent waterings we were able to give our gardens.

I hear that pumpkins are scarce and expensive, possibly for the same reason that persimmons and pawpaws were few and far between.

Persimmon trees near our Owen County place, whose branches are normally sagging with the weight of the fruit, showed a few here and there. Our trees, which normally bear a couple of dozen persimmons apiece, had none. Sophia and I gathered perhaps a half-dozen pawpaws all told.

Mushrooming was no great shakes either. Morels this spring were scanty and small and the usually dependable chanterelles appeared once and in small quantity around the middle of August. Even the *Armillaria sp.* clusters found around the base of our old Norway maple in the back yard appeared only once or twice, compared to their usual four or five.

Nut trees seem to have been an exception. The two Japanese walnut trees in back bore nuts for the first time, and the black walnuts had a bountiful crop. I cleaned all of them the other day, but was careful not to repeat the mistake I made a few years back by spreading them out on the picnic table to dry. It's amazing how fast the word gets out around the squirrel community! I also found quite a few hickory nuts, and was pleased to learn that the flotation method is as useful for separating the good and the bad, as it is for walnuts. (The good ones sink).

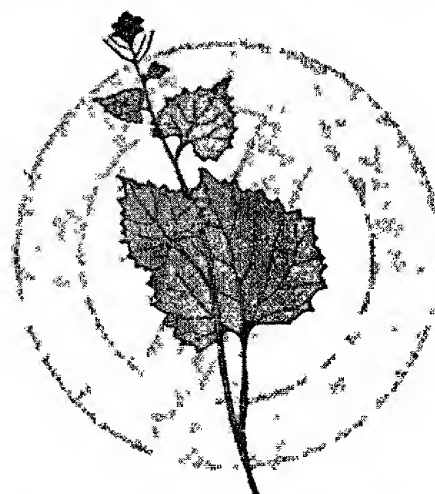
Two issues back, I promised to have some information on culinary uses of garlic mustard. (Sophia, my wife, loves to experiment, particularly when she makes me eat the results). A dip made from dried crumbled garlic mustard in sour cream was virtually tasteless, and both garlic and mustard had to be added to give it any flavor whatever. A lasagna was much more successful.

Now, most lasagna recipes do not call for garlic mustard, nor greens of any kind. Sophia's cousin Mildred introduced her to the practice of using spinach in lasagna. According to Mildred, who was married to a gentleman of Italian heritage, the white pasta and cheese, red tomato sauce, and green spinach are supposed to represent the colors of the Italian flag. Whatever the reason, the greens taste good in the dish!

Garlic Mustard Lasagna

To make garlic mustard lasagna, brown 2 pounds ground beef, Italian sausage, or a blend of the two, in a heavy skillet and spoon off excess fat. Add 1 minced garlic clove, 1 tablespoon dried basil, 1 teaspoon of salt, one 1-pound can of tomatoes, two 6-ounce cans of tomato paste and one-half cup of dry red wine. Simmer uncovered (the pan, that is) for 30 minutes, stirring frequently. Cook a one-pound package of lasagna noodles according to package instructions and drain. Beat two eggs, then add three cups Ricotta or cottage cheese, 1/2 cup grated Parmesan cheese, 2 tablespoons parsley flakes, 1 tsp. salt and 1/8 tsp. black pepper. Blend well. Into a 9x13x2 buttered baking dish lay half the lasagna noodles. Spread with half the Ricotta mixture, 1/2 pound thinly sliced Mozzarella cheese, about 10 oz. steamed garlic mustard leaves, and half the meat sauce. Place the remainder of noodles in position, then cover with the remainder of the meat sauce, Ricotta mixture, and another 1/2 pound sliced Mozzarella. Bake in a 375 degree oven for 30 minutes or until bubbly.

Bon appetit!



Do your part to prevent the taking over of our woodlands by this extremely invasive biennial. Make garlic mustard lasagna! For a description of the problem see the article in the Spring 1995 issue of this newsletter. This spring INPAWS will focus on garlic mustard as part of its plant rescue effort. Please contact anyone on the board for more information.

Germination Techniques for Native Seed *by Kevin Tungesvick*

Most native plant seeds contain one or more mechanisms that inhibit germination. In nature, these inhibitors prevent the seeds from germinating during inappropriate times of the year, resulting in a better survival rate among the seedlings. In cultivation, seed dormancy may be broken by one of several treatment techniques, such as cold, dry storage, cold moist stratification, scarification, and exposure of seeds sown to light. These simulate the natural processes that lead to germination.

The simplest effective treatment for many native plant seeds is cold dry storage. Seeds that have been collected and dried are placed in sealed containers and refrigerated to simulate the cold dormant season. They will then germinate when sown in moist soil in the spring. Although the required length of chilling varies, 60-90 days is adequate for most seeds. This treatment is all that is required for many native plants, including most grasses and many members of the mint family.

A slightly more complex process known as cold moist stratification involves exposure of seeds to moisture during the cold storage period. The seeds are mixed with an equal amount of a moistened medium such as sand, vermiculite, or peat moss. Most seeds germinate well when treated with 60 days of cold dry storage, followed by 30 days of cold moist stratification. Longer periods of moist storage tend to result in mold growth on the seeds. However, since the mold is usually only on the seed coat, the seeds are often viable, and may be sown. Species requiring a longer period of moist stratification should be sown in the fall, where they can undergo this process naturally during the winter. Cold moist stratification is the best treatment for many native wildflowers, including composites.

Another useful seed treatment is mechanical scarification. Species having hard seed coats, such as legumes, are most likely to benefit from this process. By rubbing the seeds between two sheets of medium grit sandpaper, or by shaking them in a container with sharp sand, the treatment can be accomplished. Scarified seed will often benefit from a short period of cold moist stratification before sowing.

Many small seeds, such as those of lobelia, require light to germinate. Therefore, these seeds must be sown on the surface or covered with no more than a dusting of vermiculite. The seeded container must then be placed in a well-lit area.

Since the seeds are exposed, they will dry out quickly, so the container should be misted frequently or placed in a clear plastic bag to retain moisture. Often, seeds requiring light for germination also need a period of cold dry storage or cold moist stratification.

While the vast majority of seeds will respond to one or more of the above treatments, a few species require more complex stimuli. Some seeds are double-dormant, meaning that they require two or more years to germinate. Others may require heat treatment to simulate the effect of fire in their native habitat. Some should be sown fresh, since they lose viability if allowed to dry. Finally, some respond better to chemical treatment rather than to mechanical scarification.

Learning to grow native plants from seed is a very rewarding hobby, as well as an excellent way of obtaining plants for the garden. It is important to remember that there are additional factors affecting germination, such as soil temperature and moisture levels, and the presence of soil-borne pathogens. By starting with easily-grown species, the gardener can gain confidence while eliminating many of the factors that could result in early, discouraging failures.

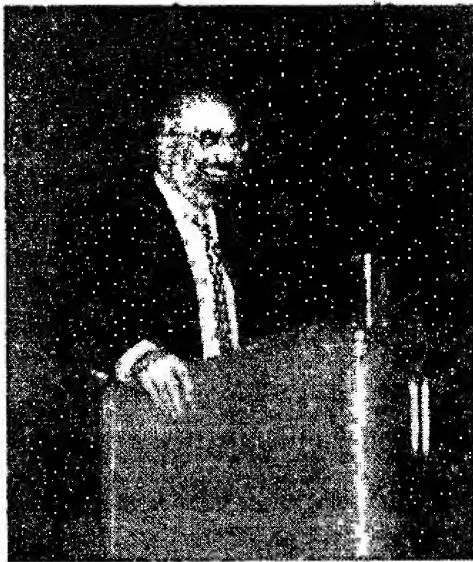
Kevin Tungesvick is a charter member of INPAWS and the newly elected Vice President/Program Chair for 1996-97. He manages the Native Plant Division of Spence Nursery, where he propagates a wide variety of woodland, wetland and prairie plants.

*An extensive survey of germination techniques is presented in *Deno's Seed Germination—Theory and Practice*.*

Ken Druse

Founder of the *Natural Gardening* Movement

Solidago, the botanical name for Goldenrod, means "to make whole." Ken Druse, keynote speaker for the 1995 Indiana Native Plant and Wildflower Society's second annual meeting, told the 135 attendees that we need to learn to grow native plants well and help to restore health to our planet. On the acknowledgment page in *The Natural Habitat Garden*, Druse states that his book is both "a warning against uncontrolled consumption . . . and a plea to give back to our environment some of the beauty and pleasure it has given us." Druse showed a slide of a small tree frog and commented, "Frogs are the barometer of nature."



Ken Druse

Using his award-winning slides, he introduced the audience to "nature's original communities—grasslands, drylands, wetlands and woodlands." He stressed that only one plant can grow in one place at one time and encouraged gardeners to grow plants native to the area in order to conserve water, reduce the need for fertilizers, and increase wildlife by providing sources of food and shelter.

The entire conference, held at the impressive DowElanco facility in Zionsville, stressed the importance of preserving the balance of nature. Doug Vawter of DowElanco explained how his company is constructing wetland areas, a prairie, establishing hiking trails and using native plants on the site.

Kevin Tungsveick's presentation entitled *A Year in a Wetland—from Skunk Cabbage to Gentian* illustrated the wide diversity of plants in the wetland habitat, yet stressed how just a few feet can determine the survival of a given plant. Kevin skillfully fielded many questions from the audience.

Sophia Anderson and Mildred Kontak provided a nice variety of pastries, coffee and cider at the break and many took the opportunity to visit displays by the Department of Transportation (Don Bickel), The Nature Conservancy

"We must start gardening and landscaping according to habitat," says Druse. There is more to gardening than the lawn surrounding the typical American home. If we become familiar with plant communities within our own habitat and create more biodiversity, the number of species that can thrive there will increase. Using his

(Jeffrey Maddox), the Indiana Department of Natural Resources—Division of Nature Preserves (Lee Casebere), the Indianapolis Parks Department (Don Miller), and 4-H Wildflower project information (Dan and Sophia Anderson).



Ruth Ann, Joe and Loring Ingraham

books and a variety of notecards and posters was offered for sale. Rolland Kontak's table with \$1.00 packets of native plant seeds was a popular place.

The topic *Public Reaction to Native Plants in the Landscape: the Good, the Bad and the Ugly* sparked a lively discussion. Led by moderator Dr. Michael Dana, Associate Professor of Horticulture, Purdue University, the panel included Lee Casebere, IDNR—Division of Nature Preserves, Ken Druse,



Tom Gast, Sue Nord

author, photographer, Gayle Jansen, IDNR—Division of Entomology and Plant Pathology, Michael and Barbara Kaczorowski, Accent Gardens, Nursery, Landscape Design and Installation, and Dean Zimmerman, District Wildlife Biologist, IDNR—Division of Fish and Wildlife.

Several of the panelists gave individual presentations after which questions and answers were offered by both panelists and members of the audience. Most agreed that native plants are less invasive than exotics, adapt readily to temperature extremes, need less watering and thrive in the natural habitat

Books were available for sale from Borders Bookstore and The Indiana Academy of Science. Authors Ken Druse (*The Natural Garden*, *The Natural Shade Garden*, *The Natural Habitat Garden*) and Janice Glimn-Lacy (*What Flowers When*) were available to autograph their

author, photographer, Gayle Jansen, IDNR—Division of Entomology and Plant Pathology, Michael and Barbara Kaczorowski, Accent Gardens, Nursery, Landscape Design and Installation, and Dean Zimmerman, District Wildlife Biologist, IDNR—Division of Fish and Wildlife.

Keynote Speaker

for Second Annual Meeting, November 4, 1995

with a minimum of care. The use of native plants increases numbers of birds and animals which provide pleasure and may take care of some insect and weed problems. Suggestions to encourage wildlife as well as to discourage undesirable animals which may become pests were also aired. Reactions by neighbors who prefer the lawn look generated questions and answers by panelists and audience alike.

Conference attendees were divided into six regional groups with a discussion leader and scribe for each: Northeast Indiana, Doug Spence and Kevin Tungesviok, Northwest Indiana, Ted Harris and Colletta Kosiba, Southern Indiana, Sue Nord and Anne Wilson, and three Marion County groups including Hollis Schuh, Hilary Cox, Sue Dillon, Audrey Stehle, and Karen LeMere. Discussion topics included communication between INPAWS and regions, desire for establishment of regional chapters, and ideas for the INPAWS 1996 annual meeting as well as the year's events in general. Each group gave a brief synopsis of its group's suggestions. We hope to collate this material and present it in a future newsletter.



Carolyn Harstad

Outgoing president Jeffrey Maddox introduced Nominating Chairman, Janice Glimn-Lacy, who presented the proposed candidates for 1996-97 INPAWS officers. The slate was accepted and with no further nominations from the floor the assembly elected Carolyn Harstad, President, Kevin Tungesviok, Vice President, Rebecca Dolan, Recording Secretary, Gilbert Daniels, Corresponding Secretary, and Jean Victor, Treasurer.

Jean Victor gave the treasurer's report. Several INPAWS members noted that over half of our total income has come from the auctions. Anne Wilson presented Rolland Kontak with a framed *Auctioneer of the Year* award. Rolland also served as the annual meeting session facilitator and successfully kept the sessions punctual.

Blackberry Jam, a folk music group, kept toes tapping during the social hour. The group (Jean Roberts, Bill Bailey, Stephen Cobe, Judy Meister, Alberta and Don Lathan) played a variety of music to the delight of all. The room was decorated with native grasses and paintings by Ken Bucklew of Spencer, Indiana, Jean Victor and Janice Glimn-Lacy of Indianapolis. A microscope for focusing on seeds and plants,

and two videos (wetlands, and on Neil Diboll's prairie management) were of interest to many during the social hour.

Sue Nord and Bernadette Traeger designed centerpiece decorations of native plants, leaves and gourds. A notecard at each table invited people to identify the materials used. After



Jeffrey Maddox, Ron Everhart, on right Michael Kaczorowski

a delicious meal, everyone returned to the auditorium for dessert, coffee and the lecture and slide presentation by Ken Druse, nationally recognized author, photographer and acknowledged founder of the *natural gardening* movement.

Our thanks to Bud Reahard who made and donated bluebird houses which were given as door prizes and won by Mary Ann Schuckman of Wheatland, Indiana, and Brenda Milliren of Terre Haute, Indiana.



Ken Druse autographing his books

In addition to individuals listed above, thanks go to annual meeting volunteers: Ruth Ann Ingraham, reservations; Carolyn Bryson, Registration table; Chris Carlson, nametags; Anne Wilson, programs; Jean Victor, membership table; Hilary Cox, publicity; Gayle Moore, Ron Everhart, Jan Lacy, Bill McKnight, Ruth Ann and Joe Ingraham, sales; Max Gentry, special help; and to the Annual Meeting Planning Committee consisting of Bill Brink, chairman, Carolyn Harstad, Ruth Ann Ingraham and Anne Wilson.

by Carolyn Harstad

Wildflower Adventures by Colletta Kosiba

My recent interest in Indiana native plants has been most rewarding because of the huge variety of plants in our state. On my early July trip to South Dakota, I took three reference books, in case I found a few unfamiliar plants in bloom.

My first discoveries were on the prairies of Lake Oahe in the middle of South Dakota. The prairie grasses there are from two to three feet tall, hiding most of the flowering forbs. Prince's plume, *Stanleya pinnata*, was an exception, its spectacular yellow spikes rising well above the level of the grasses.

I noticed the plants had very tough stems, and the leaves were well adapted to conserve moisture in the severe climate. Rainfall averages only eighteen inches per year, and almost every summer day consists of strong winds combined with hot sun.

The still-eroding Badlands do not offer a hospitable location for vegetation, yet the gumbo lily or tufted evening primrose (*Oenothera caespitosa*) shows its beautiful pink blooms where virtually nothing else grows. Sages and vetches were also adept at taking root in unpromising-looking locations. A look at the banks of dry stream beds showed just how deep the roots of some of these plants delved in order to obtain moisture. Where the erosion has stopped, great prairies have grown, and I saw bison, white-tailed deer, mule deer, antelope, prairie dogs, and many species of birds.

Custer State Park, in the Black Hills, was alive with flowers in the meadows. Some of the sixty varieties I found were plains larkspur, sego lily, white and shell-leaved penstemons, upright prairie coneflower, scarlet globe mallow, and dotted gayfeather.

Two very good books covering this area are *Wildflowers of the Northern Plains and the Black Hills* by Theodore van Bruggen and *Plants of the South Dakota Grasslands* by James R. Johnson and James T. Nichols. Fellow native plant friends, a visit to South Dakota is well worth it!

If you would like an incredible wildflower adventure closer to home, consider the *Great Smoky Mountain Wildflower Pilgrimage*, which will next take place in Gatlinburg, Tennessee, on April 25-27, 1996.

I attended for the first time last year and doubled my knowledge of wildflowers in the field. Many field trips are scheduled – some for the morning, some for the afternoon, and some for all day. If you would like to learn more about bats, there are evening tours, and for those who have difficulty getting around, there are programs at the Nature Center.

Specimens of about 100 local native plants, which had been donated by members of local garden clubs from their wildflower gardens, were on display. All tours were led by botanists from several states.

Subjects of several of the field trips I took included *Folklore of Edible and Poisonous Plants*, *Mosses' Walk to Grotto Falls*, a hike to Grotto Falls and old growth forest, and *Appalachian Trail Wildflower Walk*. I saw my first yellow lady's slipper, yellow trillium and Vasey's trillium. There were so many beautiful flowers in bloom, yet at the 5000-foot elevation of the Newfoundland Gap on the Trail, there were only spring beauties in bloom. I was told we went back one day in spring for every 100 feet we climbed.

I can't believe this program has been going on for 45 years, and I just heard about it. You must certainly visit this area in spring, and see some of the plants that grow there and nowhere else in the world!

Colletta Kosiba is a naturalist at the Harry Feldman Nature Center at Eagle Creek. She is a charter member of INPAWS and a member of the Board of Directors in charge of the Speakers Bureau. She would like to hear from more of you who would be willing to share your native plant knowledge and stories with garden clubs, schools, and community organizations. If you misplaced the form listing your interests and availability, which was included in the July newsletter, I'm sure she'd be more than happy to send you another.



Multi-florae

Nature Walk at Butler University

with Dr. Becky Dolan

Tuesday, December 12 - Winter Botany

The walk will begin at noon and last for about 50 minutes.
Meet behind Gallahue Hall near the greenhouse,
and be prepared for mud.

Kay Yatskievych Co-Author of New Botanical Work

I recently received a note from INPAWS charter member Kay Yatskievych concerning a project she has been involved with—a survey of the southeastern part of Venezuela, which is dominated by table mountains overlooking rain forest and savannas. The region is estimated to harbor 10,000 species of vascular plants, and portions of it are virtually unexplored.

The multi-volume work, *The Flora of the Venezuelan Guiana*, was initiated by the late Julian A. Steyermark, who has authored many botanical works. The project is now directed by Paul E. Berry, with editorial assistance from Bruce Holst and Kay. When completed, the work will comprise eleven volumes with 5,000 line drawings.

Volume 1 is a general introduction, including geography, history, key to families of seed plants, color plates and maps. Volume 2 begins with a treatment of ferns and fern allies, then the first 11 families (alphabetically) of seed plants found in the region.

The price of Volume 1 is \$52.50; Volume 2 is \$67.50. A handling fee of \$3 per order must be included. For more information, call 314-577-9534 or write Department Eleven, Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166-0299.

Kay has also been working on a book covering the wild flowers of Indiana for the last several years. She assured me that she expected to finish writing it around the end of 1995, so we'll be hoping to see it sometime during the latter part of 1996. — Dan Anderson.

Classifieds

For Sale: *Plants of the Chicago Region*, by Swink and Wilhelm, bought at the annual meeting, now realize I live too far south for this excellent book to be of use to me. Regular price \$40, will sell for \$25 or best offer. Call Anne Wilson, 812-342-6838. Hurry!

Welcome to New Members!

INPAWS has welcomed the following 16 new members through October 10, 1995:

JANNELL BARAN
4260 E. Bethel Lane
Bloomington IN 47408
812-331-2207

LINDA GALL
6724 Littleton Dr.
Indianapolis IN 46221
317-856-2623

MARTHA CORRIE
1160 Chad Court
Plainfield, IN 46168

PAUL HAMMOND
Young Graduate House, RM.
518
W. Lafayette IN 46906
317-495-6467

FLAIM CUPP
10411 Mohawk Court
Ft. Wayne IN 46804-4928

ANGELO DATTILO
14706 Wheatfield Lane
Carmel IN 46032
812-843-9516

ELOISE HAMP
3741 Bay Rd., N. Dr.
Indianapolis IN 46240-2973
317-841-2973

RHONDA DE CAIRE
30651-2 Co. Rd. 20W
Elkhart, IN 46517
219-264-0525

GARY LEHMAN
422-4 S. Grant
West Lafayette, IN 47906
317-746-2104

DAVID and RUTH EILER
606 E. 7th St.
North Manchester, IN 46962
219-982-2726

SUE LOUDERMILK
P.O. Box 88707
Indianapolis, IN 46208-0707
317-581-1623

AUDREY FINLEY
9340 N. Park
Indianapolis, IN 46240
317-848-5168

NATHAN PATE
1148 Fairview Dr.
Ellisville, MO 63011

DAN FORTUNE
8257 Quetico Dr.
Indianapolis IN 46268
317-875-0885

RICHARD SCALES
5133 Plantation Dr.
Indianapolis, IN 46250

It's Time to Renew Your Membership for 1996.

Please renew today and help this society continue to promote its mission throughout the state. Only you can ensure the future of our wonderful wild-flower heritage!

Check your mailing label for the date of your current dues expiration. Complete the form on the back page and mail to new Membership Chairperson

Ruth Ann Ingraham
6106 Kingsley Drive
Indianapolis, IN 46220.

Don't miss what we're planning for 1996!

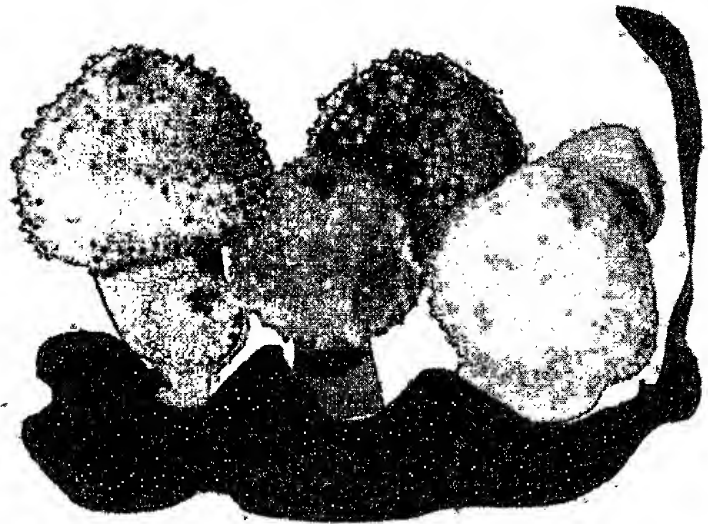
Mushrooms

by Jane Wilson

Come along, toad, and pick your seat
Here's Panther with warts to match your own
Or the Fly, a flaming crimson throne
Better to sit on than to eat.

The Sickener has a feverish blush
The Destroying Angel really does kill
There is Slippery Jack and Slippery Jill
Among stools for toads and rooms for mush.

Who were those poets under the spell
Of the forest floor they paced?
Faceless, traceless, time-erased,
Nameless, though they named so well.



Jane Wilson is a poet, gardener, and has been a successful mushroom hunter for over 40 years. She lives in Ithaca, New York, with her husband, who has eaten the many fungi she has collected. They have been married for 53 years.

INPAWS Newsletter Advertising Guidelines

With a thought to encouraging communication between members, and perhaps providing goods and services members need, we will run display and classified advertising in this newsletter. Here are the guidelines:

Display advertising:

Camera-ready ads are preferable, but we will also typeset ads. You may provide a logo (on a business card or letterhead). Items for sale, such as seeds, plants, gardening supplies, landscaping, books, etc., or services, should be related to INPAWS activities.

Display rates:

| size | per issue | per year (4 issues) |
|------------|-----------|---------------------|
| 1/4 column | \$30 | \$100 |
| 1/2 column | \$40 | \$130 |
| 1/2 page | \$60 | \$200 |
| full page | \$100 | \$330 |

A 1/4 column ad is approximately business-card-size;
a 1/2-page ad can be either vertical or horizontal.

Classified advertising:

Sold by the column-inch, at \$5 per half inch
(four lines of approximately 25 characters each).

Deadlines:

- April 15 for the summer issue, published May 15
- July 15 for the autumn issue, published August 15
- October 15 for the winter issue, published November 15
- January 15 for the spring issue, published February 15

free!

Each INPAWS member will be entitled to place a half-column-inch classified ad free once each year, listing his or her needs, interests, or material available!

The editorial staff reserves the right to reject any ad. INPAWS will not be responsible for defective merchandise or problems resulting from a product or service.

Requests for advertising space must be accompanied by a check made out to INPAWS for the amount due.

Please send your ads to

Dan Anderson
7412 Graham Road
Indianapolis, IN 46250.

For more information call

Dan Anderson (317) 849-3105 or
Anne Wilson (812) 342-6838.

Recent INPAWS Activities

Fourth Successful Plant Auction, September 24, 1995, by Rolland Kontak

Where did it all come from?

Those coneflowers, that prairie dock, native grasses in abundance, the many ferns, hand-painted sweatshirts, a dozen or so well-made birdhouses - until the Holliday House room was filled with hundreds of carefully and caringly prepared donations for the INPAWS fall auction on September 24th.

It came from you, who with donation in mind months before, collected seeds from a host of native plants, watched them sprout and grow in your own nursery beds, and then shared the results with your many fellow enthusiasts.

It came from you, blessed with original native stands on your own property, who carefully dug, potted, and delivered a portion of these to be shared by all.

It came from you, who purchased native plants from respected trade sources, and then donated them to the sale.

It came from you, who donated your precious labor and materials to create useful and beautiful things.

So to you, thank you, thank you for your donations. Thank you for your committee service. Thank you for being there. Thank you for your purchases. Thank you for all the ways in which you participated.

As a service to donors, we initiated an accounting system whereby each donation was labeled with a donor code and made a part of the sale record. These were later collated by our capable treasurer, Jean Vietor, and mailed that same day

to the donors. These records will serve as the basis for legal tax deductions for those who itemize. We hope to expand and perfect this system in the future.

And a big THANK YOU to Rolland, who again donated his valuable services as auctioneer, and shared many of the treasures from his gardens. - Ed.

As usual there are many others to thank: Mildred Kontak, clerk; Jean Vietor, Carolyn Harstad, cashiers; Kevin Tungsveik, Sue Nord, Bill Brink, runners; Bernadette Traeger, refreshments; Don Miller, chief of stewardship for Indy Parks who donated plants rescued from Southwest Way Park in Marion County; Doug Johnson, who stayed to help us clean up; Bud Reahard, builder and donor of ten wonderful bluebird houses; Vicky of Holliday Park who made us a sign; Spence Landscaping which donated lots of professionally grown plants; Juanita Graham, who consistently supports our auctions by donating dozens of well potted specimens; all the donors who generously supported this society; and last but not least the buyers who, we hope, now have some healthy, interesting new plants in their gardens!

Those who attended the annual meeting (see story on page 6) will recall that Ken Druse, in addressing the issue of sources for wildflowers, encouraged participation in our auctions as a way of obtaining good, adaptable, locally grown plants. We hope to see you at our next auction/sale! - Anne Wilson.

Field Trip to Mary Gray Bird Sanctuary, Weekend of September 30, 1995

Over 120 nature lovers, including an estimated 12-15 INPAWS members, enjoyed a beautiful fall weekend at Mary Gray Bird Sanctuary as guests of the Indiana Audubon Society. The nature preserve, located about five miles southwest of Connersville, comprises a variety of habitats including woods, wetlands, meadows, and a prairie restoration area. In addition to business sessions and slide presentations by Audubon Society members, a wide choice of field trips was provided. You could look for and study small mammals, insects, ferns, birds, or go exploring some of the remote areas of the preserve. Camping facilities were provided, and for the less hardy, motel accommodations were available in nearby Connersville. Catered food was supplied by a local food service, and was both reasonably priced and of good quality.

The sanctuary is open to the public, and there is no admission charge. To find it, take S.R. 44 east from Rushville, turn south on County Road 525W until a tee, then east on CR 150S for .7 mile, then south on Bird Sanctuary Road. Turn right when you see the CR 350S sign (about two miles). Primitive camping facilities are available for IAS members.

If you would like more information on the Indiana Audubon Society and its programs, please write Mrs. Shirley Keller, 2505 E. Maynard Drive, Indianapolis, IN 46227-4962.

Many thanks to the Society for their kind invitation, and to INPAWS members who made the arrangements.

Second Annual Meeting, November 4, 1995 - Report on page 6

Indiana Native Plant and Wildflower Society

MEMBERSHIP APPLICATION

Yes! If we have been waiting for this exciting opportunity! Enclosed is a check for the following:

- | | | |
|--|--|---|
| <input type="checkbox"/> Student \$10 | <input type="checkbox"/> Family \$25 | <input type="checkbox"/> Sponsor \$250 |
| <input checked="" type="checkbox"/> Individual \$18 | <input type="checkbox"/> Patron \$100 | <input type="checkbox"/> Corporate \$500 |

Additional Donation \$ _____

Total Enclosed \$ _____

NAME _____

TELEPHONE _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

COUNTY _____

NEW RENEWAL

How did you hear about us? _____

Annual dues pertain to the fiscal year January 1 through December 31.
Dues paid after September 1 are applied to the following fiscal year.

Gifts Do Help

Your gift of any amount will be most appreciated. Donations above student, individual and family membership dues are tax-deductible to the extent provided by law. Gifts will be used to help further the programs and purposes of INPAWS, such as publishing a newsletter and providing services related to monthly programs.

Membership Categories:

- Student:* For full-time students under the age of 22. Benefits include meeting notices, one vote on organizational issues, newsletter, membership directory.
- Individual:* Benefits are the same as for student.
- Family:* Includes head(s) of household and dependents. Benefits include meeting notices, newsletter, membership directory, and two votes on organizational issues.
- Patron:* Benefits are the same as for family, plus donation.
- Sponsor:* Benefits are the same as for family, plus donation.
- Corporate:* Benefits include newsletter, meeting notices, directory, special recognition, plus donation.

I would like to help on the following committee(s):

- Annual Meeting
- Programs
- Special Projects
- Newsletter
- Hospitality
- Speakers Bureau
- Membership
- Publicity/PR/
- Fund Raising
- Plant Rescue
- Field Trips
- Other

Please complete this form and mail, along with your check made payable to:

Indiana Native Plant and Wildflower Society, or INPAWS

* c/o Ruth Ann Ingraham, 6106 Kingsley Drive, Indianapolis, IN 46220.

Renew your membership now for 1996! See page 9 for details.

INDIANA
Native Plant and Wildflower Society

6106 Kingsley Drive
Indianapolis, IN 46220

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