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INDIANA NATIVE PLANT *and Wildflower Society*

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NEWS

Marion Jackson's Favorite Native Trees: Part I

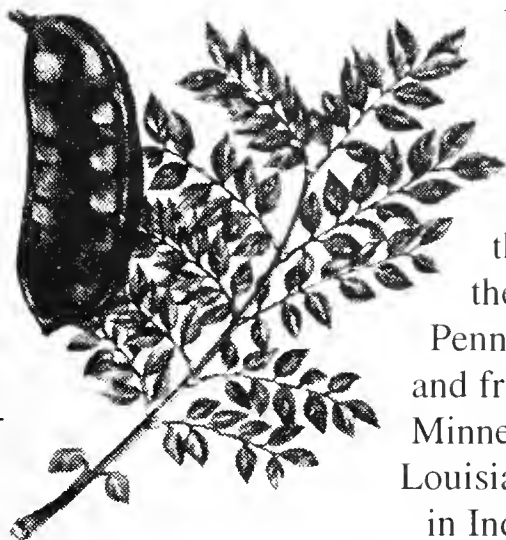
Kentucky Coffee-Tree *Gymnocladus dioicus* (L.) K. Koch

by Marion Jackson

From early fall until late spring, coffee-trees appear to be dead, their stout twigs and heavy scaly branches silhouetted starkly against the wintry skies. In fact, that characteristic is the origin of their generic name, *Gymno* (naked) *cladus* (branch). During this long leafless season, larger pistillate or female trees also retain numerous large stubby seed pods near their branch tips. Having distinct female and male plants is a reproductive strategy that botanists term dioecy, hence the Latin species name *dioicus*.

Although Kentucky coffee-trees are only infrequently encountered, they are very easily recognized in winter from the above two characteristics. Distinctive summer season clues to their identity include huge doubly compound leaves with numerous oval-pointed leaflets, and dark gray, deeply fissured bark with large hard, curlicue scales. No other Indiana tree has these leaf and bark characteristics. The leaves are far

and away the largest of those from any full-sized midwestern tree, frequently reaching 2–3 feet long and 1½–2 feet broad.



Kentucky coffee-tree
(*Gymnocladus dioicus*)

Coffee-trees, though nowhere common, have an extensive distribution range throughout much of the Midwest from Pennsylvania to Oklahoma and from southern Minnesota to northern Louisiana. We have records in Indiana for more than 70 of the 92 counties; however, its presence is likely in essentially every county of the State.

Les McClain, one of my graduate students of the 1970s era, did an ecological life history study of the Kentucky coffee-tree as his research for the M.S. Degree at ISU. He found that the tree grows most typically in deep, fertile soils of well-drained flood plains, in deep ravines, and on lower slopes of moist forests. Nearest neighbor analysis indicated that another coffee-tree was most frequently its own closest associate (indicating the species' strong tendency to clump), followed by black walnut, hack-

berry, buckeye, and other moist, fertile-site species. Clumping of coffee-trees, almost without doubt, results from clone formation, a result of its ability to reproduce by sending up new individuals as sprouts from the root system of the parent tree.

Reproduction by seeds is likely an iffy situation, given the dispersal and germination challenges offered by the tough, leathery, purplish-brown seed pods, and by the large (approximately inch diameter), rock-hard seeds. Few present-day

Kentucky coffee-tree continued on page 2

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forest mammals seem capable of ingesting such propagules, although the dark-greenish waxy sweet pulp surrounding the seeds may be nutritious, and thereby offer an incentive to large herbivores. Possibly extinct mammals such as mastodons once served as seed vectors.

The stone-like, thick-walled seeds also present serious problems in imbibing sufficient water to initiate germination activity. Workers at the Indiana State Tree Nurseries routinely drill through the seed coats, or scarify them by acid immersion, to get the seeds to germinate.

The late Dr. John Curtis mentioned in his book, *Vegetation of Wisconsin*, that Native Americans

used the large glossy seeds as sort of "nature's dice" in a type of gaming activity, thereby inadvertently assisting the species in long-range seed dispersal. He suggested that Kentucky coffee-tree distribution patterns along stream courses, etc. may reflect former Indian village sites. Early pioneers used the roasted seeds as a coffee substitute, hence the common name, although it was definitely inferior to true coffee.

The wood is hard, durable, and finishes to a high luster, making it a desirable cabinet and wood-working species. The alternating pink and brown spring and late wood give the lumber a faint "peppermint stick" pattern that is very attractive.

If the trees were more common they would be much sought after. The wood is also exceedingly durable in contact with the soil, hence a former use by farmers for fence parts.

The Kentucky coffee-tree is handsome indeed, and moderately fast-growing. It should be more widely used as an ornamental. The yellow-orange fall color is one of the loveliest hues among our Fall foliage. Unfortunately all leaflets drop almost immediately following coloration, leaving the bare winter crown silhouettes.

Marion Jackson is author of 101 Trees of Indiana: A Field Guide, to be published this spring by Indiana University Press.



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We welcome opposing viewpoints.

www.inpaws.org

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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Carolyn Q. Bryson 2000-2001
Ruth Ann Ingraham 1998-1999
Carolyn Harstad 1996-1997
Jeffrey Maddox 1994-1995

President's Message

by Rebecca Dolan

Hello, everyone, and thank you for the opportunity to lead this wonderful group. I was at the original founders' meeting at the Marion County Extension Service office more than 10 years ago and have enjoyed watching INPAWS grow and getting to know folks who share my love of native plants. We have a dynamic board this year, with many new faces and plans well under way for INPAWS' second decade.

First, I am happy to report, our website is up and running:
<http://www.inpaws.org>.

This is the best source of information on events, how to contact officers and committee chairs. You can also print out a membership form, learn more about invasive plants, and find sources for natives. Please visit the site and send us comments and suggestions. Marcia Moore (mmoore@butler.edu) is the website coordinator.

The Plant Sale and Auction is planned for Saturday, May 8, St. Pius X Church at 71st and Keystone in Indianapolis—where it has been held for the last several years. Please plan to donate and to purchase. The Annual Meeting will likely be the traditional first Saturday in November in Lafayette this year. Fewer programs will be organized at the state level this year, but we will feature a program from each chapter for the entire membership and may reinstitute the overnight bus trip. We will not have a demonstration garden at the Orchard-in-Bloom garden show, the first weekend in May, this year (a great big thank you to those who set this up in years past) but we will have an INPAWS information booth. Please let me know if you can help staff it.

Membership will be a priority item for the board this year. Our numbers

have declined over the last few years. We are producing a new membership brochure to help with recruitment. A simplified dues structure with every member belonging to a chapter is planned.

We are organizing a publicity/public relations committee to help get the word out about our group. You can help by talking to friends, especially those who have let their memberships lapse, to encourage them to join. For those who have lapsed, find out why and let me know.

At this 10-year anniversary, we all need to rethink how best to accomplish the mission of our group. What are we doing well, what are we not doing well, what should we stop doing, and, importantly, what new programs should we undertake? I would like to hear from all of you regarding any of these issues (rdolan@butler.edu, 317-940-9413).

Dear Fellow Native Plant Aficionados,

Welcome to the eleventh year of INPAWS. We begin 2004 energized by our recently elected state leadership team led by Butler University's Dr. Rebecca Dolan.

The INPAWS mission to maintain Indiana's floral heritage is more important than ever. I hope that you once again make it *your* mission to rejoin us.

By now you should have received a membership renewal form in the mail. Please renew today.

We are eager for your ideas and assistance.

Dawn Stelts
Membership Chair
dawn@stelts.com

www.inpaws.org

Visit our website for news and information about INPAWS and native plant issues, as well as links to related organizations concerned with preserving native plants and their habitats.

Marcia Moore
mmoore@butler.edu



What's New

by Kay Yatskievych

Mulberry-Weed (*Fatoua villosa*) is a native of Asia. It was first recorded for North America from Louisiana in 1964. I became aware of the plant during a visit by Mike Vincent of Miami University of Ohio to Missouri Botanical Garden. Mike had just written an article about the presence of Mulberry-Weed in Ohio [Vincent, M. A. 1993. *Fatoua villosa* (Moraceae), mulberry weed, in Ohio. Ohio J. Sci. 93: 147-149]. He pointed out the weed to me in one of Missouri Botanical Garden's flower beds. The weed looks a lot like a Mulberry tree seedling and is easily overlooked. My husband George has since found the weed in several widely scattered counties in Missouri in addition to many places in St. Louis.

Shortly after Mike's visit, Volume 3 of the *Flora of North America* (1997) was published. In it, Mulberry-Weed was reported from most of the southeastern United States. Indiana was not listed in the distribution, but a discussion paragraph under it said "In late 1996, the author reported this species from Indiana." However, when I contacted the author Richard Wunderlin in late 1997, he told me that he had no voucher collection of the plant for Indiana. My discussion with Mike made me certain that the plant was in Indiana and I began trying to find a voucher to document it. I looked for it in disturbed areas around greenhouses and in flower beds where it might have been brought in with soil because these were its preferred habitats in St. Louis. Searches in Indianapolis, Brown County, Terre Haute,

Muncie, Lafayette, and elsewhere did not turn up a specimen.

Then in the spring of 2001, I was on sabbatical at Friesner Herbarium at Butler University. Dick Maxwell visited and brought a folder of pressed plant specimens that he



Mulberry-Weed
(*Fatoua villosa*)
Moraceae

Photo by Kay Yatskievych

wanted Becky Dolan and me to look at. In it was a specimen of Mulberry-Weed that he had collected in Floyd County [R.H. Maxwell s.n. (JEF), 20 Sept 1995. New Albany, 1750 Klerner Lane, colony in disturbed area in open woods near fence]. So I had documentation for the species in Indiana.

A Google search on the web turned up 439 hits for *Fatoua villosa*. Most of the hits were sites on weeds or invasive species. The website of the North Carolina State University Department of Horticultural Science had a 56-page paper titled "Preemergence Control of Mulberry Weed (*Fatoua villosa*) in Containers"

[<http://www.sna.org/research/99proceedings/99resprocsec09.pdf>]. In this paper the authors state that Mulberry-Weed is spreading at a rapid rate in southeastern nurseries and landscapes. A survey in 1997 showed it to be present in 50% of nurseries. A survey a year later turned it up in 75% of the nurseries.

The web search also turned up records of Mulberry-Weed from Washington, California, Oklahoma, Utah, Minnesota, New York, and Massachusetts, so the weed is apparently able to survive in colder climates. Given this ability and its rapid spread in the southeastern United States since its introduction there in the early 60's, Mulberry-Weed will probably eventually be found throughout the country, if it isn't already.

This annual plant can be distinguished from Mulberry tree seedlings by the axillary inflorescences consisting of a broad, flattened receptacle with numerous tiny flowers on the upper surface. These flowers mature at different times from August through the first killing frost. The seeds are dispersed ballistically, like tiny missiles that can travel a yard or more.

Kay is a charter member of INPAWS, and has worked for the Missouri Botanical Garden since 1990. She is working on An Annotated Checklist of the Vascular Flora of Indiana, which will bring together, in one list, published records and recent new unpublished discoveries of plants in Indiana. She is the author of a Field Guide to Indiana Wildflowers.

Kay.Yatskievych@mobot.org

At Thirty, is the Endangered Species Act a Failure?

by Barbara Plampin

“Yes!” say opponents: so few species have been delisted. The attempt to recover the federally (and Indiana) threatened Pitcher’s Thistle (*Cirsium pitcheri*), a.k.a. Dune Thistle or “PT,” helps show why so many plants must remain listed.

PT, a stately Great Lakes endemic, survives precariously in Indiana in several Dunes blowouts, on a single foredune, and on one storm beach. Reaching water with their long tap-roots and protected by woody hairs, some plants achieve maturity. In early June, plants of four or more years produce yellowy-white to buff flowers above gray-green, nearly spineless stems and basal rosette leaves. Plants die after flowering once. What seeds goldfinches and others leave are too heavy to disperse very far. Threats include Artichoke Plume Moths, spreading Marram Grass, blowing sand, high waves, and human activities.

In 1988, Dr. Noel Pavlovic, USGS plant ecologist stationed at the Indiana Dunes National Lakeshore, and his recovery team began to investigate the intricacies of PT’s life history, habitat requirements, and responses to disturbance and climatic variations. They compared Indiana populations with other Great Lakes populations and a Nebraska cousin. The team swiftly completed the Recovery Plan, but federal bureaucracy delayed approval for ten long years.

Meanwhile, team member Kathryn McEachern discovered that, although greenhouse-grown seedlings wouldn’t transplant outdoors, direct seeding worked at three outdoor sites. Eight inches of

sand buried one site, but two sites have enjoyed one “population turnover,” i.e., bloom followed by seedlings.

Happy ever after? New populations have been found, but lack of gene flow among the widely separated populations means weaker plants



Pitcher’s Thistle
(*Cirsium pitcheri*)

and possible Indiana extinction. Pavlovic and Dr. Marlin Bowles, who is recovering PT at Illinois Beach State Park, hope to eliminate this threat. Also, more northerly populations are healthier. Perhaps life at the southern end of its range stresses PT.

Pavlovic is mildly encouraged that the ESA is doing its duty. Although not all species can recover, 602 of the 748 listed plants have recovery plans. Pavlovic points to success with the Lakeside Daisy (*Actinea*

herbacea) in Illinois. Bureaucracy is the real enemy.

Addendum: Hearty thanks to Dr. Pavlovic for his help with this article. Any errors are mine. Noel hopes that 2004 plant finds include White Lady’s Slipper in Cowles Bog and Netted Chain Fern (*Woodwardia areolata*) nearby. Tom Post of the DNR hopes someone will find Tall Bur-head (*Echinodorus berteroi*), discovered last summer in Illinois by Ken Dritz.

Books:

Fish and Wildlife Service (Pavlovic et al.). Pitcher’s Thistle Recovery Plan.
<http://ecos.fws.gov/tesspublic/TESSWebpageRecovery?sort=1>

Gleason. New Britton & Brown Illustrated Flora. The New York Botanical Garden, 1952.

Swink and Wilhelm. Plants of the Chicago Region. Indiana Academy of Science, 4th ed., 1994.

Yatskievych, Field Guide to Indiana Wildflowers. Indiana University Press, 2000. This and some other useful books do err in describing PT as a biennial.

Barbara Plampin is a member of INPAWS, a trustee of the Shirley Heinze Environmental Fund, and a member of Save the Dunes Council. She has a Ph.D. in English literature from the University of Michigan. Botany has been her avocation all her life.

Battle of the Buckthorn

by Carolyn Harstad

In Indianapolis, Garlic Mustard and Amur Honeysuckle are the premier alien invaders. If left unchecked they will eventually destroy pristine wildflower woods. Here in our new home in Minnesota, we fight the Battle of the Buckthorn.

In Lakeville, a southern suburb of Minneapolis, developers are required to leave a wide conservation easement behind new houses. Behind our 9-year-old home, the easement holds towering red and white oak trees, mature black cherry, shimmering poplars, and a huge old cottonwood. However, the “children” of these original denizens of the forest stand leafless and dead, victims of an unwelcome invader that now dominates the easement. Its name? Buckthorn.

Originally recommended as “a fast growing hedge or privacy barrier,” Buckthorn has now escaped to the wild. Like Amur Honeysuckle, it is early to leaf out in spring and late to lose its leaves in the fall. This berry-producing exotic invasive spreads uncontrollably, quickly overtaking and crowding out native plants. Taller than Amur Honeysuckle, Buckthorn sends up multiple thin stalks. These 2-3 inch stalks grow straight and tall like bamboo, and in our woods rise as high as 15-20 feet and more.

I once photographed an immense bamboo forest in Japan. Our Buckthorn woods with the blank soil beneath remind me of that sterile landscape. Birds and wildlife are denied safe haven because of



Glossy Buckthorn
(*Rhamnus frangula*)

the lack of low foliage, and rain seldom penetrates the heavy canopy of leaves above. As a result, the soil beneath is dry and inhospitable—a veritable buckthorn desert.

Seedlings that dare to germinate do not survive to maturity.

Our wild conservation easement should be teeming with wildflowers, yet I found only a few brave Jack-in-the-Pulpits growing on the forest floor. Young native

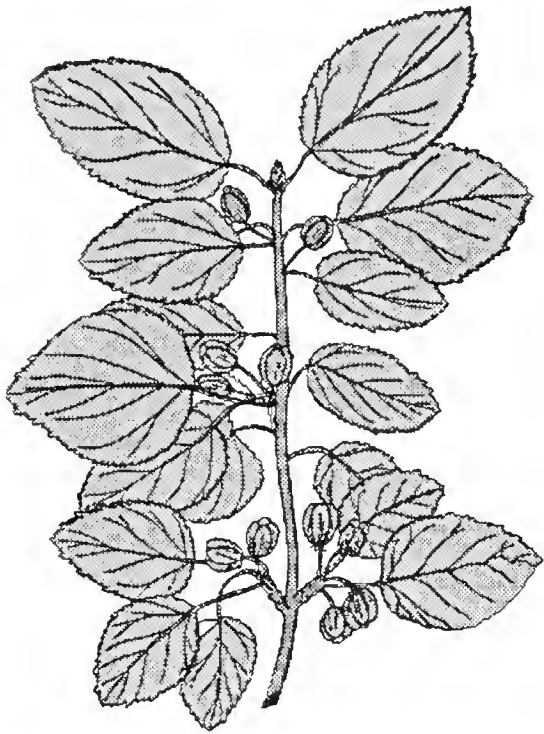
trees—still standing—lost their fight for survival. Was it the aggressive competition of the Buckthorn, lack of light and moisture, or does Buckthorn emit an allelopathic substance similar to the juglone of

Black Walnut? Whatever the answer, this exotic invasive definitely creates a buckthorn desert wherever it is allowed to get a foothold. Yes, it provides a privacy barrier between our home and the neighbor down the hill, but at what price?

Our daughter Karen lives four doors up the street from us. She and her family moved into their newly built home eight years ago. Since that time she and Jim have been doggedly digging and weeding out every Buckthorn seedling that appears. Now, new little seedlings of sugar maple, ash, cherry, red oak, white oak and other native trees and shrubs pop up in her woods.

Wildflowers have begun to reappear. Yes, my grandchildren can find Jack-in-the-Pulpit behind their home, but now there are also patches of thalictrum, true rue anemone, wild ginger, columbine, ferns, and Dutchman’s Breeches. It is a joy to see the woods heal and reclaim itself.

Heartened by Karen’s success, last fall we decided to begin the Battle of the Buckthorn in our own woods.



Common Buckthorn
(*Rhamnus cathartica*)

We cut down every Buckthorn we could find in the conservation easement behind our house, leaving 4-6-inch-tall stumps so we could identify them later. I knew that, if left untreated, these stumps would vigorously resprout in the spring. In an INPAWS newsletter article entitled *Controlling Invasive Species* (Summer 2003, pp. 14-16), Ellen Jacquart reported that Garlon 4 penetrates into the stem, killing and thus eradicating woody plants and was the most effective chemical when using either the cut stem or basal bark treatment method. I called Ellen at The Nature Conservancy in Indianapolis, and she recommended a pre-mixed product containing Garlon 4 dubbed "Pathfinder." I ordered a gallon jug

of it and liberally sprayed the chemical on each small stump. I also sprayed the bottom six inches of the trunks of several Buckthorns that we left standing as an experiment, to determine which method is more effective. Next spring we plan to dig out any stray Buckthorn seedlings, and destroy any plants that survived the Garlon 4 treatment.

In October, I planted Amelanchier, Gray Dogwood, viburnum, native hemlocks and a few other native shrubs. With constant vigilance, we may be able to reclaim our woods. But it will be a constant battle, because the wooded properties surrounding us are full of buckthorn. I wish I could just sneak over and spray the trunks of my neighbors' offending trees. Instead, my next challenge must be to convince all the property owners in our neighborhood association to join me in fighting the Battle of the Buckthorn. Stay tuned!

Carolyn Harstad, author of Got Shade? and Go Native! and co-founder of INPAWS, is a new resident of Lakeville, Minnesota.

Contact Carolyn:
pharstad@iupui.edu

To order her books, published by Indiana University Press, call 1-800-842-6796 or log on to www.indiana.edu/~iupress.

The Battle of the Buckthorn in Minnesota echoes the current battle that Hoosiers are waging against Amur Honeysuckle and Garlic Mustard. Environmentalists, public land agencies, and native plant enthusiasts are working hard, trying to eradicate this noxious plant. Minnesota property owners are being encouraged to eradicate any and all buckthorn on their property and to replace this invasive shrub with native shrubs, grasses and wildflowers.



Lanceleaf Buckthorn
(*Rhamnus lanceolata*)

an uncommon
native plant
of fens and rocky slopes

INPAWS Member Benefit

It is easy for you to be the speaker on native plants at your organizations!!! We have slide programs for members to use at their programs. Each program has slides already in a carousel accompanied by a written script to read as you show the slides. Easy!! All you have to do is contact Chairman Colletta Kosiba by phone 317-852-5973 or e-mail k_colletta@hotmail.com, reserve the program, and she will send it to you.

All of the INPAWS programs are written to encourage people to use native plants in their gardens and yards. The programs are entertaining as well as educational.

SPRING WILDFLOWERS

40 of those lovely spring ephemerals we find in the woodlands.

SUMMER WILDFLOWERS

40 sun-loving plants of the fields.

INVASIVE PLANTS

Some of the worst invasive plants that are harming our environment.

NATIVE PLANTS FOR YOUR SHADE AREAS

Not only flowers but vines, groundcovers and ferns to show the diversity natives can provide in the shade garden.

NATIVE TREES AND SHRUBS

Some of the many native trees and shrubs, including interesting facts about their uses.

WHO ARE THESE ALIENS?

Flowers from other continents that have naturalized and are now Indiana wildflowers and their weedy cousins. How they got here and their uses.

These programs have been given to garden clubs, master gardeners, master naturalists, community service organizations, conservation groups, and Audubon societies throughout the state.

Share the good news about native plants in your area. Call Colletta today and make arrangements to use the slides at one of your organizations or do a program for your local library! Remember everyone benefits, especially the wildlife, they will thank you for having more native food available!

Colletta Kosiba,
Speakers' Bureau chairman
317-852-5973
e-mail
k_colletta@hotmail.com

Wildflower Identification Challenge by E-Mail

Editor's Note: Treasurer Dawn Stelts recently cc'd me on a letter she wrote to the Sperry Herbarium. It read: "I learned of your Picture of the Week through the OK native plant newsletter. I have played the game two weeks now and love it. I think others in our group would like to sign up too. Maybe you could put an article describing the mailing list in our newsletter." Sperry responded as follows:

Late in 2003, Dr. Stephen Timme (T. M. Sperry Herbarium, Pittsburg State University, Kansas) estab-

lished a *Wildflower Identification Challenge by E-Mail*. Currently more than 40 people from Oklahoma, Arkansas, Missouri, Kansas, Colorado, and Canada participate. Each week, a photo of a wildflower is sent in jpeg format. The participant then uses whatever resources to make an ID of the photo and returns the answer to Dr. Timme at e-mail address sperherb@pittstate.edu or sperryherbarium@pittstate.edu

With each photo, a brief description will be included, as well as habitat. This ID challenge is ONLY for fun and learning. It is a good way to

sharpen one's ability to recognize wildflowers. The plant photos are generally from the Midwest, although he may throw in an "outsider" once in awhile with clues. Each month, everyone who has submitted a guess, right or wrong, has their name placed in a hat, bowl, or whatever. One name is drawn and an 8x10 photo of a wildflower or scenery is sent to them. Also, the name of the plant is given with the following week's challenge. If interested, send your full name and e-mail address to Dr. Stephen Timme at sperherb@pittstate.edu or sperryherbarium@pittstate.edu.

INPAWS Regional Chapter News and Events

Central

March 24, 7-9 PM
Southport Library,
2630 East Stop 11 Road,
Indianapolis

Greg Oskay – *Ponds*

Greg will discuss how to build a pond, which plants to use or avoid and what type of wildlife a pond will attract.

April 18, 2-4 PM

Cool Creek Park Nature Center,
US 31 north at 151st Street,
Indianapolis

Don Ruch – *Mushrooms*

June 6, 1-3 PM

location to be announced

Kevin Tungesvick – *Sedge Walk*

June 12, 9 AM to about 11 AM

Work day in Broadripple Park's old-growth forest. Pizza and strawberry shortcake at Ruth Ann Ingraham's for the crew after the work is done.

August 22, 2-4 PM

Clegg Memorial Gardens
East of Lafayette, Indiana

Jim Peterson – *Wildflower Walk*

Come and join Jim on a 1 and 1/3 mile wildflower walk along Wildcat Creek. There will be many varieties of native plants and wildlife to observe.

October 17, 2-4 PM

Fort Benjamin Harrison State Park,
Indianapolis

Jeannine Montgomery –
*Soil Microorganisms talk and
nature walk*

Jeannine will discuss the fungal network and how it affects soil and fertility and she will present ways to preserve or enhance your soil.

December 12, 3-6 PM

Christmas Party at Virginia Harmon's home

All members are welcome to attend these meetings. Call or email Betsy Wilson for further information.

The Central Region is looking for someone who would be interested in monitoring the native plant garden at the State History Center. The job would entail checking the garden about once a month during the growing season and calling the committee (yes, we have a list of dedicated volunteers) to replace plants or rearrange them. The state weeds and mulches the garden. The garden's designer, Hillary Cox, has offered to help get the garden in shape. This is a good way to fulfill Habitat Stewardship or Master Gardener work hours.

We hope to see many of you at our meetings! Any ideas for further meetings can be passed on to Virginia Harmon or Betsy Wilson. We are trying a variety of meeting times and locations. Let us know what you think of this. Lastly, if your email changes, please let us know!

Betsy Wilson
President of the Central Region
geobet@iquest.net

South Central

April 15, Thursday, 1 PM
Wildflower Walk and Garlic Mustard Pull at Cedar Bluffs

Hike the rugged bluffs and see a spectacular display of blooming plants, while eliminating some of the competition.

Contact: Ellen Jacquart, 317-951-8818, ejacquart@tnc.org

April 23-25 Wildflower Foray

A variety of walks, speakers, and programs for any nature enthusiast.

Identification, photography, fungi, and more!

Contact: T. C. Steele State Historic Site, 988-2785

May 6, Thursday evening

Dr. Charles Heiser

Weeds in the Garden

Brown County Library

IU Botanist Dr. Heiser will talk about the weeds among our garden plants and their special traits.

Contact: June Loomis,
june.loomis.worldnet.att.net



Bean Family

by Dr. Rebecca Dolan

Bean Family =
Fabaceae (aka legume
family or
Leguminosae)

4000 genera and 9000
species of mostly
warm-temperate
regions worldwide.

In Indiana, 32 genera
and 93 species.

Characteristics

Trees, shrubs or herbs
worldwide, ours are
mostly herbaceous.

Flowers distinctly
bilaterally symmet-
rical; corolla of 5
petals forming a stan-
dard, 2 lateral wing petals, and a
keel (two petals more or less fused
at the lower margin). The standard
is located to the outside of the 2
wing petals.

Leaves usually pinnately compound.

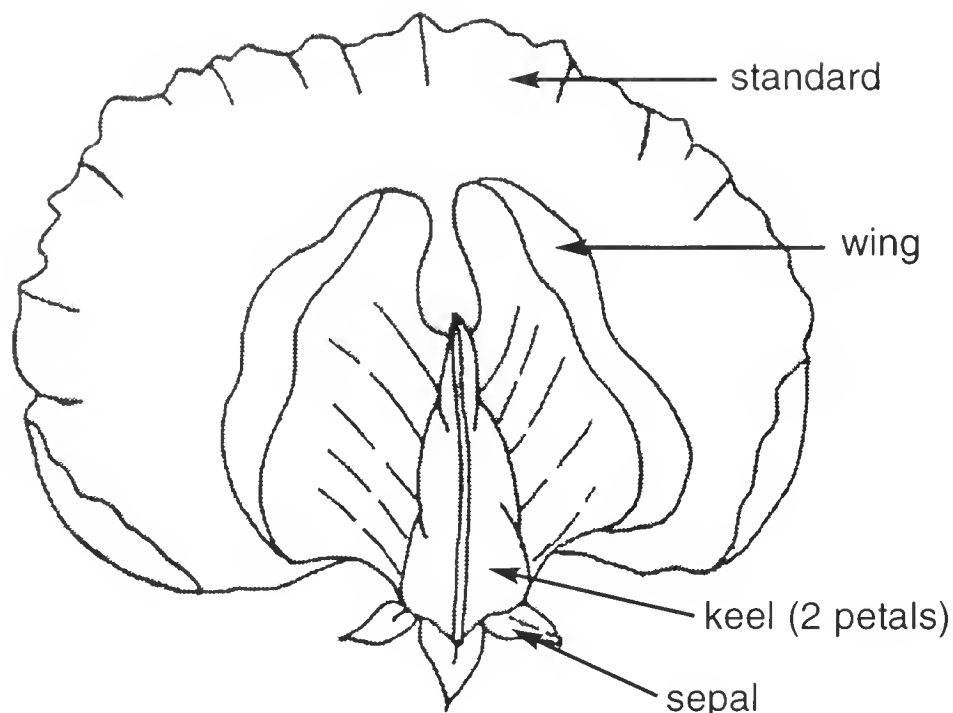
Stamens 10.

Fruit a legume, that is, a typically
dry fruit with several seeds that
splits down both sides.

Seed with food usually reserved in
the cotyledons.

Economically important members of the family.

Import sources of high-protein food,
oil, and forage: soybean, kidney
beans, cowpeas, garden peas, chick-
peas, lentils, alfalfa, clover, peanuts.



Papilionaceous flower of the family Fabaceae;
note that the standard is located outside the wing petals.

Plant Products

Indigo dye, ornamentals such as
sweet pea, bluebonnets, wisteria,
soil-improving trees such as black
locust (they harbor beneficial bac-
teria in bumps on their roots that
take nitrogen from the air and con-
vert in into a form plants can use).

Common Indiana plants in the bean family

Wildflowers, both native and non-
native including clovers, peas,
milkvetch, vetch, lupines, wild
indigos, bushclovers, and tick-tre-
foils.

A few trees, including
red bud (*Cercis
Canadensis*), black
locust (*Robinia
pseudoacacia*), honey-
locust (*Gleditsia tri-
anthos*) and Kentucky
coffeetree
(*Gymnocladus dioicus*).

Yellow-wood
(*Cladrastis lutea*) is a
rare and beautiful
native tree more
common in the
Appalachians than it is
here. Only a few native
populations persist in
Indiana, in the area in
and around Yellowwood
State Forest in Brown
County. We have an

old specimen tree of Yellow-wood
in Holcomb Gardens here at Butler.
It has an enormous spreading
crown, tight gray bark, and beau-
tiful clusters of white flowers, like
white wisteria, in the spring.

*Becky Dolan is the new president of
INPAWS for the term 2004-2005.
She is the Director of Friesner
Herbarium at Butler university.*

Figure from: Jones, S.B. and
A.E. Luchsinger. 1979.
Plant Systematics. McGraw-Hill, Inc.
New York, NY. 388 pp.

Goldenrod or Solidago?

by Charles B. Heiser

Last fall I saw an ad for a *Sizzle Bouquet* at my local O'Malia's Food Market. "Add some 'sizzle' to . . . your home . . . with this . . . bouquet of pomps, solidago, sunflowers and gerbera daisy." I had to see the solidago, for I didn't recall ever having seen them sold in stores before. I also wondered why they



Blue-Stemmed Goldenrod
(*Solidago caesia*)

were called solidago (the scientific name of the genus) instead of goldenrod, the common name and a very appropriate one.

I thought that I knew one reason: many people are under the impression that goldenrod causes hay fever. Why, I don't know, but I first encountered that idea when I was a

child and still do. Could it be that people confuse goldenrod and ragweed? It seems unlikely although the two plants do belong to the same family. (In fact, all four members of the bouquet belong to the aster family.) Ragweed, however, is wind-pollinated and produces a great abundance of wind-blown pollen whereas goldenrod and most other showy flowers are insect-pollinated. I asked the clerk why they called the plant solidago instead of goldenrod. She replied that they wouldn't sell under the latter name because people would think it was the common weed.

Pomps (a chrysanthemum) are native to eastern Asia and gerbera to southern Africa whereas solidago and the sunflower are primarily North American. There are, in fact, 41 species of goldenrod in eastern North America, of which 23 occur in Indiana. Michael Homoya recommends three of these — *S. caesia*, *S. nemoralis*, and *S. rigida* — for our perennial gardens. In his *Manual of Cultivated Plants* in 1924 L.H. Bailey lists no species of *Solidago* as being cultivated in the United States whereas his *Hortus Third* in 1976 gives 25 species. They still are not popular in this country. I remember the first time I saw goldenrod in gardens was in Great Britain about 40 years ago. They are much more appreciated in Europe than in North America.



Stiff Goldenrod
(*Solidago rigida*)

Certainly sunflowers are weeds as much as—or more than—goldenrods are, but that has not held them back. It has never been necessary to sell them as *helianthus*. Sunflowers have become most respectable—even trendy—in the last twenty-five years.

Charles B. Heiser is Distinguished Professor Emeritus, I.U., Bloomington. In addition to Weeds in My Garden, he has written books on sunflowers, gourds, and economic botany.

Flora of North America Project

by Kay Yatskievych

Volume 4 of the Flora of North America (FNA) is now in print. This volume contains ten families (652 total species), and six of the families have members that are found in Indiana. The largest of these are the Amaranthaceae (80 species in North America, 16 in Indiana) and Chenopodiaceae (168 species in North America; 27 in Indiana, although some of the recent new records for Indiana are not recorded in the volume). In addition to being helpful for determining members of these two difficult families, the volume has new nomenclature for some of the Chenopodiaceae that has not been in general use in this country before (see: *Corispermum*, *Dysphania*) and has perhaps finally resolved which of several names should be used for some other species (see: *Atriplex*, *Salsola*). The largest family in the volume is the Cactaceae with 189 species; only one of these is found in Indiana.

Volume 4 was the second FNA volume published in 2003, the first was Volume 25, the first volume (but the second half) of the two volumes of grasses. Two volumes also were published in 2002. The first was Volume 26, which includes the Orchids, Lilies, Irises, and 8 other related families. The second was Volume 23, all one family: the Cyperaceae with 843 species in North America and 241 in Indiana.

This volume is unusual in that it has illustrations of almost every species, making it an extremely useful reference for anyone who wants to identify members of this difficult but ubiquitous family.



Cycloloma atriplicifolium
(Chenopodiaceae)

Drawn by Bee F. Gunn

In addition to the four volumes published in 2002 and 2003, four other volumes were published previously: Volume 1, Introduction; Volume 2, Pteridophytes and Gymnosperms (the ferns and conifers); Volume 3, which includes 32 dicot families, 25 of which have members in Indiana; and Volume 22, 30 families in North America, 18 in Indiana. The latter volume, when combined with Volume 26, includes all of the petaloid monocot families. The entire series will be composed of 30

volumes, the rest of which will be published at the rate of two per year.

From its inception, the Flora of North America project has sought participation from as many experts worldwide as possible. It currently has over 850 contributors and is overseen by a 26-member Editorial Committee, a Board of Directors, an Executive Committee, an Editorial Management Committee, and a large number of Taxonomic Reviewers and Regional Reviewers, all of whom serve as volunteers. There are also editorial staff, mapping specialists, illustrators, and/or graphics and layout specialists at six editorial centers at institutions around the country.

The big green volumes of FNA are relatively expensive and the series will require lots of space on the bookshelf. The publisher, Oxford University Press (www.oup.com/us/reference; phone 800-451-7556) is currently running a special (Promo code 23869), on all eight volumes, with each volume costing \$95 + shipping from now until 30 June 2004.

Kay Yatskievych
Production Coordinator
Flora of North America Project

Kay.Yatskievych@mobot.org

Combinations: Wild Blue Phlox and Wood Poppy

by Gene Bush

Good plants go unappreciated at times, especially if they happen to be relatively common local natives. The old saw about familiarity breeding contempt has unfortunately cast some fine flowers into bad light. Our local blue phlox (*Phlox divaricata*) and wood poppy (*Stylophorum diphyllum*) often get overlooked in favor of more exotic shade perennials.

Blue phlox is also commonly called wild Sweet William, but that name is discouraged. *Dianthus barbatus* also carries the common name of Sweet William, and confusion enough exists in the area of common names.

Phlox divaricata can be found growing in relatively rich woodland soils. Clumps are especially nice when they are in somewhat open spots along rocky cliffs or an eastern exposure at woodland edge. Locations with a bit more light seem to have larger masses of foliage and bloom. The foliage, while not particularly showy in winter, does remain evergreen. Stems creep slowly outward to form a rather loose mat. When a node stays in contact with soil or leaf mulch, roots form, and when that node has established itself a new stem begins to form. Leaves are oblong to ovate in outline and can reach two inches in length with a width of about three quarters of an inch.

The plant is pretty prolific in seed production and almost as good in distribution. After a few years blue phlox will begin to pop up here and

there in the garden. I would not consider the plant aggressive, but I have a good-size garden appreciating this plant's willingness to travel. Many plants have a delightful fragrance, others almost none. Watch for variations on a theme, as blue phlox is indeed from the wild. *Phlox divaricata* freely hybridizes with its own kind. If you have an alba form, or named selection, they will readily cross.

The flower stems are slender, unbranched and sticky-hairy. At the top of each stem is a loose cluster of light blue to lavender-blue one-inch flowers. Each petal is notched, but the degree of notching varies from plant to plant, as does the hue of bloom color. Blooms also change hue as they age. There are now numerous hybrids and forms to choose from ranging from snow white to bicolors.

The wood poppy or Celandine poppy is a backbone or workhorse plant for the shade garden. It can be dressed up or down for the more formal mixed perennial bed or the native garden. The plants begin to bloom in late March to early April here. The main flush of flowers is April and into May, but it will continue to bloom on and off throughout the year into hard frost in fall. If wood poppy is dead-headed, the blooms will be more numerous in consistent flushes.

Flowers are four-petaled, each petal about one inch long, in a saucer shape. The petals are bright sunshine-yellow and the golden boss that sits in the middle enhances the

effect. Buds are well above the foliage and made up of two whitish, hairy, sepals.

Seedpods are large, prominent, hairy fruit capsules. When the fruit splits open numerous brown gooey-covered seeds with fleshy tails spill out around the parent plant. Ants and other insects love the fleshy tails and carry the seed about freely. The seed is woody and not edible so this part is discarded to become a new plant. If you have a small garden I would recommend removing seedpods before maturity.

Foliage is lobed, carrying a bluish-white cast upon emergence. When in bloom the height is about one to one and half feet. The long taproot prefers deep rich soil on slopes but it will settle in far less and do quite well.

Wood poppy and sweet William make great gardening companions, coexisting well, seeming to work out their territorial disputes. Foliage is complementary in shape and texture. Blue and yellow is a classic color combination. I look forward every April to their combined show.

Author's Note:

Gene Bush is owner/operator of Munchkin Nursery & Gardens, LLC in southern Indiana. The plants and gardening experiences described in these articles are grown in his hill-side garden. Gene can be reached at: www.munchkinnursery.com

For color photos of these plants individually and in combination, please visit the web site.

Coming Events

INPAWS Annual Plant Sale — Saturday, May 8, 2004

St. Pius X School
71st and Keystone
Indianapolis

Julie Beihold, Co-chairman
Karen Hartlep, Co-chairman

We are looking for more volunteers to work the auction, and to check in plants the night before.

An organizational meeting will be held at 10 AM, March 13, 2004, in Ross Hall at St. Pius X School, 7200 Sarto Drive, Indianapolis (the same room the plant sale was held in last year). We look forward to seeing you there!

We need your plant donations!!!

We would very much prefer to have all plants delivered to the school on Friday evening May 7 between 7 and 9 PM. Donations will still be gratefully accepted Saturday morning from 7 to 9 AM. If you are not able to deliver your plants Friday evening, transport assistance may be available. Please remember to label your plants and pot them at least two weeks before the sale.

Please contact co-chairs
Julie Beihold (iepdb@iquest.net) or
Karen Hartlep
(khartlep@interdesign.com)
for more information.

Three events scheduled
Garlic Mustard Pulls

Saturday, April 24
9 AM to 12 PM
Southeastway Park

Saturday, May 1
9 AM to 12 PM
Marott Park Nature Preserve

Saturday, May 8
9 AM to 1 PM
Holliday Park

Indy Parks will provide refreshments for all events!

Andrew Mertz
AMERTZ@indygov.org



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NEWS

Pollen-free Sunflowers

by Charles B. Heiser

When I visit my local supermarket I must pass through the florist section upon entering the store. Frequently some flower attracts my attention;



Annual Sunflower
(*Helianthus annuus*)

and I am delighted when it is an old friend, as it was last December when I saw bouquets of sunflowers. Where are these coming from? I asked myself. I picked up a bouquet, and the wrapper informed me they were from Ecuador. At another shop, the sunflowers were from Colombia. I was aware that many flowers are now grown in Latin America and shipped by air to the States. In fact, I visited a number of

flower farms when I was in Ecuador two years ago, and saw lots of roses, but no sunflowers. To have roses shipped by air doesn't surprise me, but lowly sunflowers? They are not lowly today. In various shades of yellow, orange, and red, tall to short, big to small-headed, single or double-flowered, with or without pollen, sunflowers are very popular as ornamentals.

The sunflowers that I saw for sale were pollenless, or male sterile, the word that geneticists usually use, and these are now widely available to the home gardener. I learned of male sterile ornamental sunflowers some years ago when I had a phone call from the Netherlands. The caller identified himself as a plant breeder and asked me if I knew how the Japanese breeders were producing sunflowers without pollen. I hadn't known that they were, but I was able to tell him that they had probably introduced the male sterile factor from the cultivated oil seed sunflower into the ornamental.

This male sterile sunflower had first been reported in 1969 by a plant breeder in France, P. leClercq, and I knew a great deal about it, for I had sent him seeds of one of the parents of the hybrid in which he found it. I remember well where I obtained the seeds: near the streetcar track running by Washington University in

St. Louis. Neither the sunflowers nor the streetcar track are there today.

Many times I have brought home sunflowers cut from my garden so I am well aware that they produce a great deal of pollen, but this was never a concern to my wife or me. Apparently not everyone agrees with us, and Burpee in one of their recent seed catalogs tells us, "No pollen means no stains on your linens or furniture." At times, it may also mean no seeds for the birds, as I shall shortly explain. In any event male sterile ornamentals have

Pollen-free Sunflowers continued on page 2

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become very popular. I have seen them sold in the Bloomington farmers' market in recent years.

Male sterility may be inherited through the genes carried in the chromosomes as my readers learned in their biology courses; or it may be inherited through factors carried in the cytoplasm (contents of the cell excluding the nucleus). The strict maternal inheritance of the latter has important consequences, which I shall not go into here except to mention that it has led to the development of hybrid oil seed sunflowers as well as the pollenless ornamentals.

As in corn, the hybrids greatly increase yields, and allow the sun-

flower to become competitive with other oil crops of the world. To produce hybrid seed the seed company plants alternate rows of male sterile and male fertile (pollen producer) lines. The seed harvested from the male sterile rows is sold to the farmer. In order that the plants grown by the farmer have pollen, the seed company arranges for a male fertility-restoring gene to be carried by the pollen parent.

As for the pollen-free ornamentals, the seed company sells seeds of the male sterile sunflowers directly to the gardener. Unless the gardener, or someone in the neighborhood within a bee's range, grows a pollen-producing sunflower, his male sterile plants will produce no

seed. If the gardener obtains seeds and plants them the following year he may secure male sterile plants unless the pollen parent carried a gene to restore fertility. What the chances of that are, I don't know. If gardeners want to grow male sterile plants like the ones they had the previous year, they have to buy more seed from the seed companies; that is what the companies are counting on.

Charles B. Heiser is Distinguished Professor Emeritus, I.U. Bloomington. He is the author of Weeds in My Garden (Timber Press) as well as books on sunflowers, gourds, and economic botany.



**INDIANA NATIVE PLANT
and Wildflower Society**
NEWS

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We welcome opposing viewpoints.

www.inpaws.org

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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President's Message

by Rebecca Dolan

I hope you all enjoyed a chance to view some beautiful wildflowers this spring. The flowering trees in Indianapolis were the most spectacular I remember.

Your native plant society has been very active and there is also exciting news to share on the native plant and wildflower front. INPAWS Vice President and Invasive Chair Ellen Jacquart has helped organize a Midwest Invasive Plant Network (MIPN) to coordinate efforts on invasive plant prevention, early detection, control and management, research and education in the Midwest. One recent product of the Network is a listserv that connects all of us interested in invasive plant issues in the Midwest. If you would like to be on it, go to <http://groups.yahoo.com/group/MIPN/> and follow directions there to join. More information on the Network will be coming over the next several months—stay tuned.

Indiana University has hired Dr. Eric Knox as Director for the Deam Herbarium. This natural history collection of pressed and dried plant specimens contains the over 50,000 sheet collection of Charles Deam. Deam wrote the last comprehensive treatment of the Indiana flora in 1940. Eric is interested in developing on-line access to the Herbarium collections, fact sheets with photos for native plants, and computer-assisted plant identification software. Eric can be reached at eknox@bio.indiana.edu or 812-855-2549.

In late February, Dr. Paul Rothrock at Taylor University assembled a

group of botanists intimately familiar with the flora of Indiana. Their task: to develop a tool for assessing floristic quality. The system, initially developed by Gerould Wilhelm for his *Flora of the Chicago Region*, allows the conservation botanist to readily rank natural areas by quality or the restoration ecologist to monitor changes in site quality from year to year. Before one can apply floristic assessment to plant communities of Indiana, each species in the flora must be assigned a value (from 0 to 10) by a panel of experts. These consensus values, known as coefficients of conservatism, represent a shorthand way of describing a species' fidelity to high-quality habitat. In an amazing three days, every plant on Kay Yatskievych's working check-list of the Indiana flora (over 2,500 taxa) was discussed. Astonishingly, people like Mike Homoya, George Yatskievych and Gerry know the correct name, habitats, and specific locations for just about everything that grows in Indiana and can do so without notes! The list of conservatism values will be included in Kay's upcoming *Catalog of the Flora of Indiana* to be published by IU Press. More information about their use in floristic assessment may be obtained from Paul at plrothroc@tayloru.edu.

Dan and Sophie Anderson and Dawn Stelts have been busy representing INPAWS at Earth Day and other venues, educating the public and seeking new members. Thanks to all who helped staff our booth at *Orchard in Bloom*. Our annual Plant Sale and Auction, headed this year

by Julie Beihold and Karen Hartlep was a success, both financially and in terms of education. Just listening to Kevin Tungesvick and Sue Nord Peiffer describe the unique features of the auction plants while Rolland Kontak handled the bidding made for a very enjoyable hour. If you missed it, be sure to be there next year.

Mark your calendars for the return of the INPAWS bus trip. Program Chair Lynn Dennis is organizing a trip for Saturday and Sunday August 28 and 29 to Merry Lea Environmental Center and Chain O'Lakes State Park in northeastern Indiana. Contact Lynn at ldennis@tnc.org or stay tuned for more details.

The Indianapolis Arts Center (site of last year's INPAWS Annual Meeting) wants to put in a garden featuring plants used for dyeing. They have asked us for help with names and sources of native plants. Anyone with such knowledge, please contact me.

www.inpaws.org

Visit our website for news and information about INPAWS and native plant issues, as well as links to related organizations concerned with preserving native plants and their habitats.

Marcia Moore
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Birds and the Native Landscape

by Jim Duquesnel

Editor's Note: This article originally appeared in a recent issue of Tillandsia, the newsletter of the Miami/Dade/Florida Keys Chapter of the Florida Native Plant Society. The author modified it to be less specific to south Florida, after Anne Wilson requested permission from him to reprint it here.

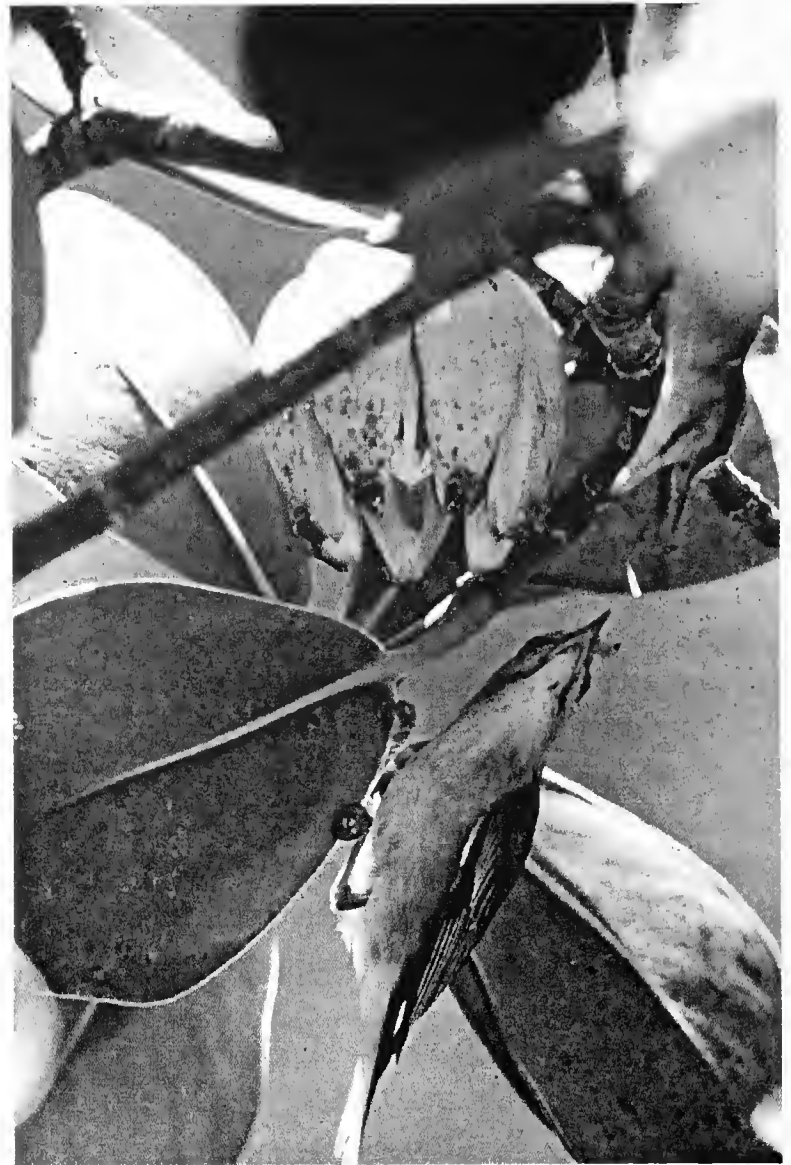
When homeowners maintain bird feeders and birdbaths, they usually do so primarily with the expectation that it will bring songbirds within easy viewing distance. Bird feeding, and the bird watching it enables, has helped start and nurture a life-long interest for countless amateur and professional naturalists. How wonderful it would be if more homeowners were aware of a few simple practices that can make backyard viewing as safe and beneficial for the birds as it is for us.

Feeding birds can result in a concentration of bird activity at feeders, creating unnatural risks that many are unaware of or dismiss too lightly. This is true whether feeders dispense seeds, or sugar-water for hummingbirds, or even fruit for orioles. By comparison, most parents would be unhappy to hear that their kids were filled with soft drinks and candies by some well-meaning neighbor, spoiling their appetite for healthier fare offered at home. Unfortunately, although sugar-water is obviously less nutritious than naturally available foods, hummingbirds will use it instead of more nutritious fare when it is easier to get.

Natural alternatives—feeding on native plants (seeds, fruits, buds, and nectar) and the insects that also

depend on those plants—are not merely more nutritious. Finding natural food sources requires extended searches over relatively large areas. This diffusion of feeding activity allows birds to widely disperse their droppings. Feeders, on the other hand, do the opposite—they concentrate feeding and defecation in small areas, facilitating the spread of contagious diseases. Landscaping with the right diversity of locally native plants can offer year-round food supplies. Native plants attract birds (and butterflies) to the yard while minimizing the risks created by concentrated activity at feeders.

Likewise, bathing in wet foliage, temporary puddles, running streams and along the extensive banks of natural water bodies minimizes the necessity for birds to drink and bathe in each other's used bathwater and excrement. In addition to maintaining a clean birdbath, I like to run a sprinkler over some shrubs for a few minutes—when I have time to sit in the yard and watch. It is astounding how quickly the noise and smell of water can attract songbirds. Smaller species, especially warblers and vireos, actually seem to prefer



Birds can complicate invasive species issues. Black-whiskered vireos encounter and feed on the red aril in pitch apple fruits (*Clusia rosea*) during their migration into the Caribbean and tropical America. Now that pitch apple has been introduced to much of south Florida, the birds' continued use of it as a food source is helping the vireo to spread.

bathing in the wet foliage to using an inch-and-a-half deep birdbath.

Native plants have other benefits. One researcher recently found that nests in native landscape shrubs had a higher success rate than those in exotic shrubbery. Perhaps most importantly, native plants provide host-plant foliage for native insects, particularly for butterfly larvae, most of which are likely to become nutritious snacks for songbirds.

Cuckoos are actually caterpillar specialists; my native landscaping often attracts yellow-billed and mangrove cuckoos seeking juicy sphinx-moth larvae, while screech owls feed on the adult moths at night.

Even non-invasive exotic food sources may have negative impacts that can be difficult to discern. Sunflower and other seed mixes are commonly used at bird feeders here in the Florida Keys, for example. These seeds are not naturally available here, yet our native birds once thrived without them. However, they are heavily utilized by invading Eurasian collared doves, European starlings, and house sparrows. Blue jays also use the feeders and, while native to Florida, their range expanded into the Keys only after habitat fragmentation became extensive. Feeding these species increases the competition for other resources (such as water and nest sites) and, in the case of blue jays,



screech owl baby waiting for a sphinx moth from his parent

supports a growing population of opportunistic nest predators. Native songbirds have enough problems without well-intentioned birdwatchers unknowingly adding to their troubles.

In summary, homeowners who want to assist native birds have some serious issues and responsibilities to consider. First, feeders and birdbaths require regular cleaning to prevent disease transmission. Frequent articles in magazines such as *Bird Watchers Digest* (www.birdwatchersdigest.com) stress the methods for and importance of proper sterilization of feeders and birdbaths. Excellent references, such as *The Bird Feeder Book* by Don and Lillian Stokes (1987), are available for anyone seeking more information.

As feeders and supplemental water can provide assistance needed more by competing exotic species than by our native songbirds, careful monitoring should be used to determine who is using your bird feeders and baths. Bird feeding can most easily be made more selective through feeder design, or by the choices offered. Though sugar-water provides energy and water, it is not a balanced diet, and may displace better foods in birds' diets. Bird watchers should remember that feeding any wildlife (including bears, raccoons, and yes, even birds) will always have unanticipated consequences (good and bad). Supplying food and water in ways



This nothern parula warbler contemplated the bird bath, apparently with a skeptical eye regarding the depth, then proceeded to bathe in wet foliage a few feet away.

that most closely simulate nature minimizes unintended hazards, making the use of native plants in your landscape an outstanding way to help birds and other wildlife.

And, finally, there is a lot of good information out there, both in print and on the Internet. It has never been easier to find what you need to know about providing for your backyard birds.

Jim Duquesnel and his wife Janice, both state park biologists, share a lifelong interest in the observation of nature. Living in the Florida Keys since 1979, Jim especially enjoys sharing his appreciation of our vanishing natural areas and wildlife, through guided walks, slide shows and lectures. Jim is an active member of the Florida Native Plant Society, Florida Exotic Pest Plant Council and National Audubon Society.

Photos by James G. Duquesnel, used courtesy of Florida Park Service.

more photos on page 7

Marion Jackson's Favorite Native Trees: Part II

Umbrella Tree *Magnolia tripetala* L.

by Marion Jackson

No Indiana tree species that reaches its northern range limit in our state is so reminiscent of eastern mountain forests as the umbrella-tree. As Donald Culross Peattie writes in the classic *A Natural History of Trees of Eastern and Central North America*, "In summer the great, filmy, pale green leaves, clustered umbrella-fashion at the end of the stem, seem the very embodiment of the Appalachian forests' spirit, as they shine through the underwood." A few ravines cut deeply into the sandstone bedrock of Crawford County contain the seven known populations of the umbrella-tree in Indiana. There sheltered, moist coves eroded into the steep hillsides provide refuge to a large number of individual trees, disjunct by many miles from their nearest neighbors in central Kentucky. To walk through these delightful stands in summer is almost like hiking a trail in the forests of the Cumberland Mountains.

Almost always a small-to-medium-sized understory species (rarely exceeding 12 inches in trunk diameter, or more than 30 feet tall), umbrella-trees have the largest simple leaves of any native Indiana tree, except occasionally for paw paw. Their leaves range from 10 to 20 inches long and half as wide.

These huge solar panels radiate about the ends of twigs, not unlike the sections of an umbrella, hence the species' common name. Likely such a leafy expanse enables them to intercept enough sunlight in the



dimly lit ravines to accomplish the photosynthesis necessary to survive among larger canopy trees.

Other Appalachian disjuncts such as sourwood, mountain laurel, wintergreen, Carolina buckthorn, and deerberry occur in the Ohio River border region of Indiana, but the umbrella-tree is the one of these that somehow seems prehistoric in origin, and out of character with its typical hardwood neighbors. And prehistoric the species is. The magnolias, along with tulip-tree, sassafras, sweetgum, and a few other midwestern native tree species, have occupied deciduous forests since the Tertiary geological period, some 60-70 million years ago. In fact, umbrella-trees retain such

primitive Angiosperm characteristics as huge flowers with numerous individual flower parts, large leaves with smooth margins, primitive cone-like fruiting structures, and large smooth purplish buds that may reach two inches long.

Umbrella-tree flowers are spectacular. The huge creamy-white, nearly saucer-sized, vase-shaped blooms, gleaming ghostlike in the sun flecks that stream through the dense overstory foliage, seem more tropical than temperate deciduous. But while inviting to the eye, they are less so to the nose. Their disagreeable carrion-like odor attracts beetles, the

primary pollinator of the species. Their strange cone-like fruits are equally unusual. They range from 2 to 4 inches long, and are composed of fused fleshy follicles, each with 1-2 seeds that dangle by threads from the lovely bright rose-colored fruits in autumn, when they mature.

During the early 1980s, Kem Badger, one of my graduate students at ISU, did his master's thesis on *An Evaluation of Naturally Occurring Populations of Magnolia tripetala* L. in Indiana. Dr. Badger is now a Professor of Plant Ecology at Ball State University. Among many other interesting findings, Kem discovered that the tree community at sites where the umbrella-tree occurs naturally is dominated

by sugar maple, American beech, tulip-tree and umbrella-tree, along with red maple in the seven ravines of Crawford County. The umbrella-tree is quite numerous in these communities, with more than 200 tree-size individuals recorded at all of his study sites. It is reproducing strongly and maintaining its numbers at the seedling level. But interestingly, tree-of-heaven, or *Ailanthus* trees, an introduced tree species from Asia, is invading these communities and seems to be competing successfully with the umbrella-tree, perhaps to the latter's disadvantage. In all, Badger found 157 species of vascular plants that share the rather



rich communities on the moist soils of the microclimates found suitable to umbrella-tree at its northern range limit in Indiana.

Umbrella-trees are too small to have an economic importance for lumber, but it is a handsome ornamental where the tree is winter hardy. The wood is lightweight (28 pounds per cubic foot), soft, close-grained,

satiny, with an attractive pale purplish-brown color. The wood, which resembles tulip-poplar, is very easy to work. I once sawed several small boards from a short log (purchased in Tennessee), and fashioned them into lovely picture frames. This lovely, narrowly restricted, interesting species, rare in Indiana, deserves total protection here. If you visit one of the umbrella-tree habitats in Crawford County, enjoy their charm and beauty, but do not disturb.

Marion Jackson is author of 101 Trees of Indiana: A Field Guide, just published by Indiana University Press.

photos continued from page 5, *Birds and the Native Landscape*

Smaller species, like warblers, often shun the bird bath in favor of a shower, while many larger songbirds apparently prefer to wallow—cardinals and catbirds seem particularly fond of the bath and often emerge looking quite waterlogged.



This black and white warbler found the foliage of a shrub wetted by a sprinkler just right.



A prairie warbler also shuns the nearby birdbath to bathe in wet foliage.

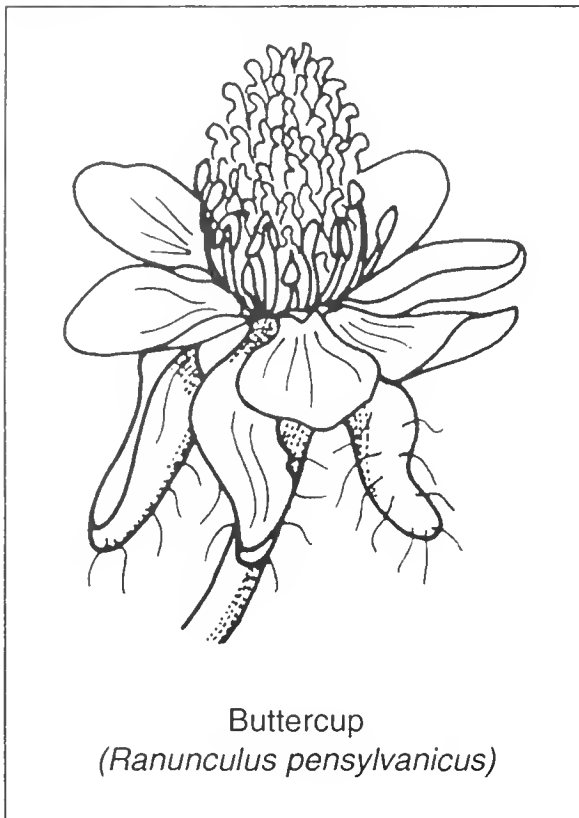
Ranunculaceae = Buttercup Family

by Dr. Rebecca Dolan

Ranunculaceae = Buttercup Family

Worldwide: ca. 50 genera and 1900 species, mostly in the temperate northern hemisphere

Indiana: 17 genera and 45 species



Characteristics

Mostly annual and perennial herbs, usually with rhizomes or tubers

Numerous stamens and carpels, spirally arranged

Leaves mostly alternate, palmately compound or deeply lobed, with sheathing bases

Calyx and corolla often look the same

Petals 5 to many

Fruits variable

Economically important members of the family

Ornamentals include columbine, larkspur and buttercup. Roots of goldenseal are used as a medicinal.

Black cohosh (*Cimicifuga racemosa*), which grows in Indiana, is a highly studied herbal remedy for menopause symptoms. Some members make poisonous alkaloids, e.g., wolfbane.

Common Indiana plants in the family

Lots of native spring wildflowers, mostly woodland, are in the buttercup family, including:

Actaea pachypoda – White baneberry or Doll's eyes

Anemone canadensis – Canada anemone

Aquilegia canadensis – Columbine

Caltha palustris – Marsh-marigold

Delphinium tricorne – Larkspur

Enemion biternatum – False rue-anemone

Hepatica nobilis – Hepatica or Liver-leaf

Hydrastis canadensis – Goldenseal

Ranunculus abortivus – Kidney-leaved buttercup



Leatherflower
(*Clematis viorna*)
blooming now along the
Brown/Bartholomew County line



Thalictrum dioica – Early meadow-rue

Thalictrum thalictroides – Rue-anemone

There are native species of the vine Clematis.

There are many species of *Ranunculus*, the buttercups. Some buttercups are introduced, including Lesser celandine (*Ranunculus ficaria*), which is becoming invasive in some parts of Indianapolis.

Becky Dolan is president of INPAWS, and the Director of Friesner herbarium at Butler University.

Illustration of buttercup by Jan Glimn Lacy from her book Botany Illustrated.

photo of clematis by Anne Wilson

Goldfinches to the Rescue?

by Barbara Plampin

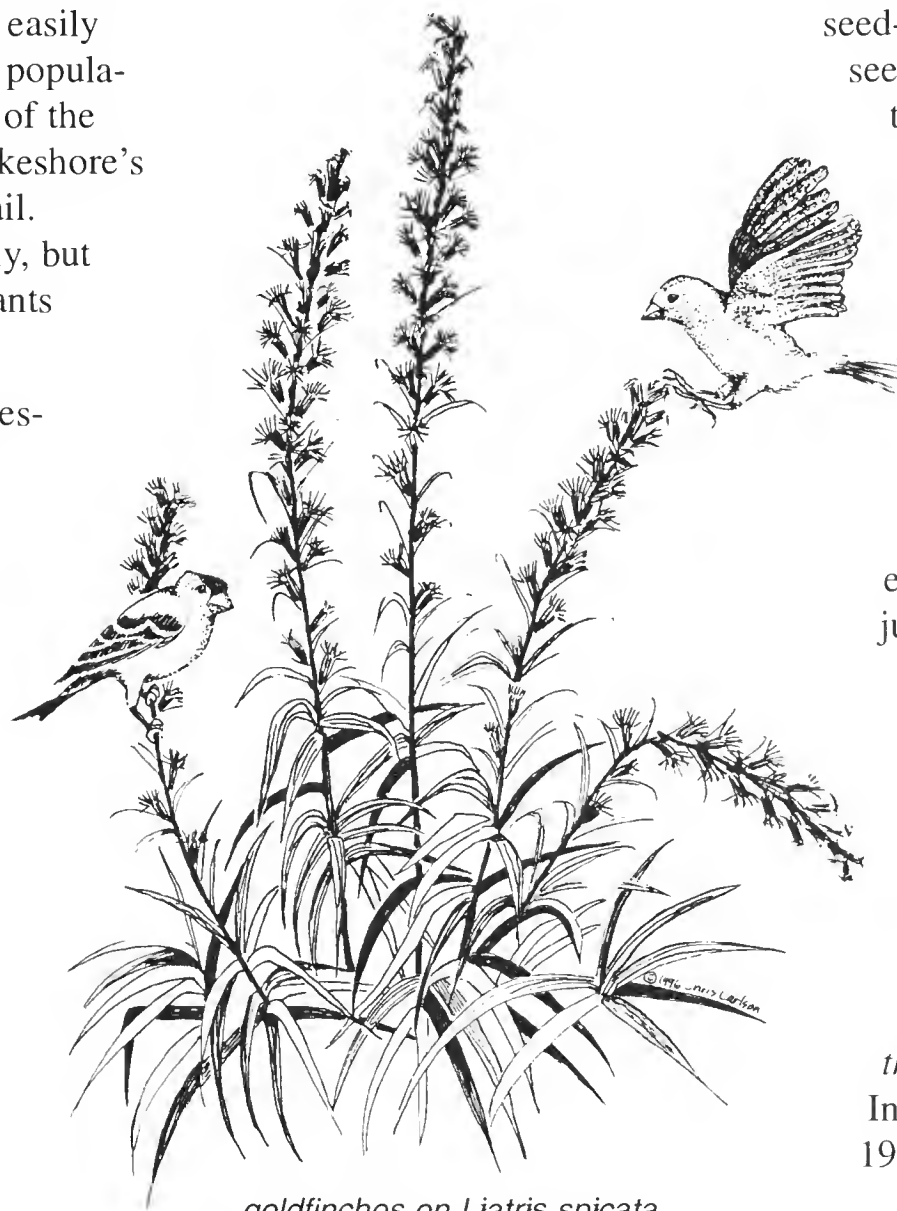
Stabilizing the federally (and Indiana) threatened Pitcher's Thistle (*Cirsium pitcheri*), aka Dune Thistle or "PT" ("CP" to scientists) is even more chancy than I reported in the Spring 2004 INPAWS Newsletter. First, however, visitors can easily view a substantial, all-ages population of PT beside the stairs of the Indiana Dunes National Lakeshore's West Beach Succession Trail. (Bloom time: 6 June-31 July, but even the persistent dead plants have interest.)

Without management, succession may eventually doom PT. If nature has her way, blowout sites will become fully forested in 50 to 100 years. Already, at one site, invading oaks and Jack Pine (*Pinus banksiana*) are cutting off the winds necessary for seed germination. Wind must bury seed in sand to just the right depth; too little or too much sand, and the seeds can't make it.

Meanwhile, Dr. Marlon Bowles, who restores PT in Illinois, has overcome the problems that formerly accompanied planting greenhouse-grown seedlings outdoors. Lakeshore scientists maintain several experimental plots. To study genotypes, they have planted for examination seeds from three different local sources, applying two methods of sowing (broadcasting and direct planting) in three different habitats. Plants in the Little Bluestem (*Andropogon scoparius*)

and Marram Grass (*Ammophila breviligulata*) habitats survive; those planted in a blowout with blowing sand never appeared above ground. In two other plots, researchers study

traffic. Reconnection is necessary to establish new populations. The seeds are so heavy that they fall no farther than four meters from the parent plant, so dispersal is poor. A rather forlorn hope rests on the seed-loving goldfinches. When wet, seeds get sticky enough to adhere to goldfinch beaks and, perhaps, feathers. Carry on, you finches!



goldfinches on *Liatris spicata*

the thistle's long-term dynamics in the context of habitat changes and fluctuations. Here, the thistle, which can't bloom until age four, is in its second turnover.

The real challenge, says Dr. Neel Pavlovic, federal recovery plan author, is reconnecting the blowout populations throughout a shoreline interrupted by industry, towns, drainage ditches, erosion, and foot

SOURCES
Otfinowski, R., *The Pitcher's Thistle of the Great Lakes Dunes*, *Wildflower*, 20(1), 2004, 30-31. *Wildflower* is an excellent Canadian quarterly just right for amateurs and even professional botanists and plant growers. Subscriptions payable in U.S. dollars to *Wildflower*, Box 335, Station F, Toronto, ON (M4Y 2L7) Canada are \$35.00 annually.

Swink and Wilhelm, *Plants of the Chicago Region*. 4th ed. Indiana Academy of Science, 1994.

Barbara Plampin is a member of INPAWS, a trustee of the Shirley Heinze Environmental Fund, and a member of Save the Dunes Council. She has a Ph.D. in English literature from the University of Michigan. Botany has been a lifelong avocation.

Illustration by Chris Carlson, founding editor of INPAWS News in 1994. This illustration first appeared in the March 1996 issue.

Memo from Minnesota

Reclaiming the Woods

by Carolyn Harstad

Since disposing of the buckthorn (see Spring 2004 Newsletter) we have systematically been reclaiming the woods behind our house by planting the following bare-root native trees and shrubs:

TALL TREES

These are nice specimens with 2-inch-caliper trunks, at least 10 feet tall. All have good fall color and will reach 60-80 feet at maturity: 2 'Fall Fiesta' Sugar Maples, 2 'Patmore' Ash, and 2 Red Maples.

MEDIUM TO SMALL TREES

All have spring flowers and colorful fall foliage, and all but the Redbuds produce fruit that wildlife can eat (15-20 feet tall at maturity): 4 Pagoda Dogwoods; 3 American Plums; 4 Redbuds; 2 Thornless Cockspur Hawthorns (*Crataegus crusgalli* var. *inermis*). The latter in particular make nice specimen trees.

SHRUBS

5 Arrowwood Viburnum, 5 American Highbush Cranberry, 5 Viburnum dentatum 'Autumn Jazz,' 3 Serviceberry (*Amelanchier arborea*, shrub form). All three of the later flowered beautifully this spring, although they are still small.

We also planted a Snowberry (*Symphoricarpos albus*, 6 feet tall with white berries in winter) and an American Hazelnut (*Corylus americana*) aka American Filbert (6 feet tall with edible nuts. My husband, Pete, used to pick filberts when he was growing up near Princeton in northern Minnesota. He said the bushes can be pretty

rangy looking and I think they sucker as well, but they are still better than Buckthorn!). All have flowers in spring, and most provide food for birds and wildlife. Now 2-3 feet tall and 2-3 feet wide, they will measure 10 x 10 at maturity.



Carolyn and Peter posing with a Florida Thatch Palm (*Thrinax radiata*) at Crane Hammock, in the Florida Keys, relaxing before undertaking the big planting at their new home in Minnesota

Also one male and one female American Bittersweet vine, planted last fall. The deer nibbled them down from three feet to about 12 inches, so they have to do some growing before I worry about giving them something to twine on. (I will have to use some Plantskydd or Hinder on the new plantings and protect trunks next fall or all my efforts will just help the deer and the bunnies gain weight at the Harstad salad bar!)

In addition I transplanted wildflowers from my daughter's woods (four doors up the street) including Hepatica, Spring Beauty, Toothwort, Twinleaf, Bloodroot, Celandine Poppy, Wild Geranium, Wild

Ginger, Jacob's Ladder, Virginia Bluebells, Waterleaf, Goldenseal, False and True Solomon Seal, Bellwort, False and True Rue Anemone, plus a variety of ferns and violets

On the slope behind our house going down into the woods, to help stop erosion, we planted 5 Coralberry aka Red Snowberry aka Indian Current (*Symphoricarpos orbiculatus*) bushes (5 feet tall with arching branches heavily laden with red fruit that hangs on in the winter) and 5 Lowbush Honeysuckle (*Diervilla trifida lonicera*) which mature at three feet and have red leaves in spring, green in summer, and red again in fall. This shrub suckers. Since it grows naturally in Jack Pine forests in Minnesota, I figure it is a good choice for someone who lives on Jackpine Trail. Guess I'll have to plant some Jack Pine, too.

I then literally covered the hillside with Mayapples, Ostrich ferns, Wild Ginger, and Black-eyed Susan. As I write this, already some of the wildflowers are blooming, the newly planted trees and shrubs are leafing out, and the woods look much more inviting than the former "buckthorn desert." Our next door neighbor followed our example. Now if we can just convince the rest of the neighborhood

Carolyn Harstad, author of Got Shade? and Go Native! and co-founder of INPAWS, is a new resident of Lakeville, Minnesota.

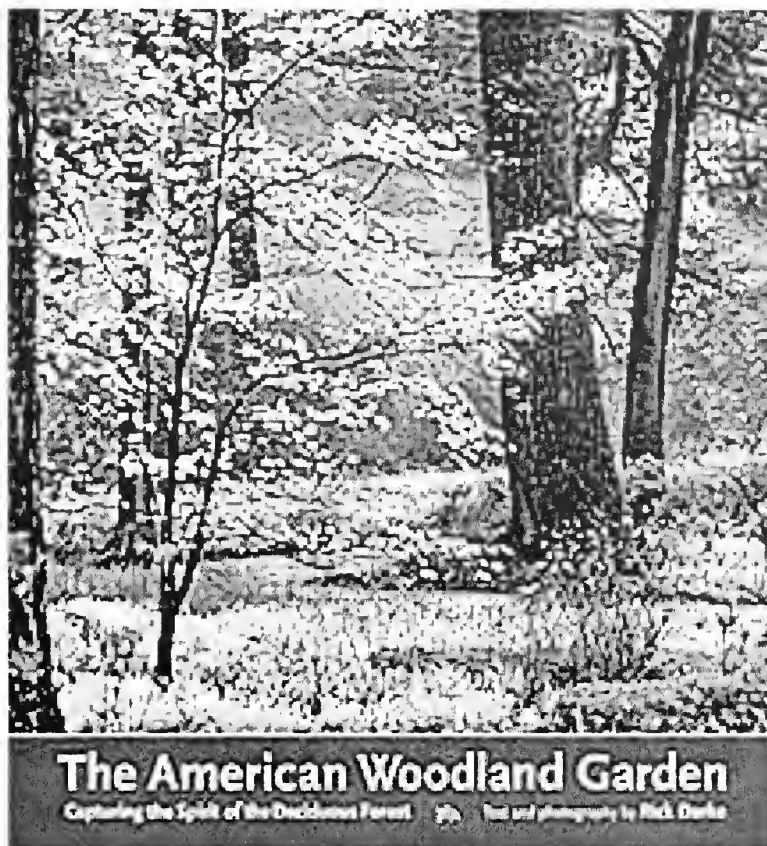
photo by Jonathan Wilson

Rick Darke engaged as keynote speaker for next INPAWS Annual Conference, November 6, 2004

Mark those calendars! With a renowned keynote speaker and fabulous new location, you definitely won't want to miss this year's INPAWS Annual Conference on Saturday, November 6, 2004 at Duncan Hall in Lafayette. The Thomas Duncan Community Hall is a large, lovingly restored historic home in downtown Lafayette. It's easy to find and there's plenty of free parking. To read more about this charming facility, go to www.duncanhall.org.

This year's keynote speaker is Rick Darke, an author, photographer, lecturer and landscape design consultant. His special areas of expertise are native plants and regional landscapes of North America, ornamental grasses, and Arts & Crafts Period gardens. He has studied and photographed North American native plants in their habitats for over 20 years. His latest book, *The American Woodland Garden: Capturing the Spirit of the Deciduous Forest* (Timber Press), which will also be the title of his talk, received the American Horticultural Society's Book Award, the Garden Writers Association Golden Globe Award for book photography, and the National Arbor Day Foundation's Certificate of Merit. Here is the publisher's description: "Rick Darke promotes and stunningly illustrates a garden aesthetic based on the strengths and

opportunities of the woodland, including play of light, sound, and scent; seasonal drama; and the architectural interest of woody



plants. An alphabetical listing of woodland plants offers useful advice for every garden, emphasizing native trees, shrubs, vines, ferns, grasses, sedges, and flowering perennials that fit the forest aesthetic. More than 700 stunning photographs, taken by the author, show both the natural palette of plants in the wild and the effects that can be achieved with them in garden settings. *The American Woodland Garden* is a clarion call to a new awareness of our relationship to the natural world. This book will take its rightful place among the classic works that have influenced our concept of the American landscape."

Darke's other books include *The Color Encyclopedia of Ornamental Grasses*, *In Harmony with Nature: Lessons from the Arts & Crafts Garden*, *The Royal Horticultural Society Manual of Grasses*, and *Garden Favorites: Designing with Herbs, Climbers, Roses and Grasses*. He served on the staff of Longwood Gardens, Pennsylvania, for 20 years and as Curator of Plants from 1986-1997. His work with international plant exploration and introduction has taken him to Japan, South Africa, England, Germany, Brazil, Australia, New Zealand, Costa Rica, and the Canary Islands. On the "wilder" side of horticulture, he is currently a team member of the *Enhancing Delaware Highways* project, and was co-designer of a jury-selected entry

for The High Line, a now-derelict elevated rail line along New York City's West Side that promises to become one of 21st century North America's most imaginative public spaces. Darke's work with deciduous forest ecology and design was the subject of Ketznel Levine's December 2002 National Public Radio program "Talking Plants." You can read more about Darke at his website: www.rickdarke.com.

Registration information and a list of other talks to be presented at this year's conference will be available this summer on www.inpaws.org.

Thanks for a successful 2004 Plant Sale and Auction

by Julie Beibold and Karen Hartlep

Thanks to everyone who helped make this year's native plant sale and auction (May 8) a success, especially to all the donors for the many beautiful plants. We raised over \$7200 for the organization. We had a diverse selection of plants this year. Linda Bullard, Karen Hartlep, and Dee Ann Peine worked on obtaining donations from nurseries. Many thanks to the following corporate donors: Altum's Horticultural Center, Mark Holeman Inc., Munchkin Nursery, J. F. New, Spence Restoration Nursery, Wild Birds Unlimited, and Woody Warehouse.

Our efforts began in March with a planning meeting held at the home of Ruth Ann Ingraham. As the doors were locked at the place where we had been scheduled to meet, she graciously offered to host the meeting. Thanks, Ruth Ann! Many helpful suggestions and ideas were given by attendees, who included Dee Ann Peine, Ron Jackson, Tom Hohman, Dianne Stippler, Virginia Harmon, Rosie Springer, Rolland Kontak, and Donovan Miller. Kelly Frank was also very helpful during the planning stages. We are grateful once again to St. Pius X for allowing us to use their facility. I want to mention specifically Sharon Wagner, who gave us permission to use the building, and Greg Law and the other staff who helped set up.

Many people helped publicize the event. We had the flyers printed and passed them out at the planning meeting. We then sent out an e-flier to members, so they could make their own copies to give to friends and acquaintances. Thanks to Dawn Stelts for assisting us in getting the mailers out to members. Jo Ellen Myers Sharp wrote about the sale in her Indianapolis Star column, and Courtenay Edelhart put us in the Star's Garden Calendar. WIBC had

us on their calendar as well. White River Gardens and the Indianapolis Museum of Art Madeline Elder Greenhouse allowed us to place flyers there. Flyers were also placed at various other locations. Marcia Moore put the information on our website.

Many hands made light work on Friday night before the sale. Karen and I were relieved and grateful when Charles and Marilyn Spurgeon and Don and Carolyn Bryson arrived with garden carts. The Spurgeons came with a truckload and two vanloads of plants. Many were from rescue efforts at the Indianapolis Airport property. Janice Gustafarro took care of getting pizza for the volunteers, among many other things. Thanks to Don Bryson for making a "table cover run" to the hardware store. Other Friday night volunteers included Dee Ann Peine, Ron Jackson, Donovan Miller, Rosie Springer, Tom Hohman, Betsy and George Wilson, George Peregrin, Mary Ann Zoeller, Barb Hamilton, and Anne Rollison, a master gardener volunteer. Plants were unloaded and checked in, then placed on tables. It all went smoothly, thanks to our volunteers

Dan and Sophia Anderson hosted our education table with pictures and posters about native plants. Janice Gustafarro and Virginia Harmon purchased refreshments to have at the sale. Chuck McCoy also helped out with refreshments. Many customers came with lists in hand, looking for something specific. All the volunteers assisted by answering questions. Thanks to all who totaled up the sales for the customers. Dianne Stippler and treasurer Dawn Stelts served as our cashiers. Ron Jackson, George Peregrin and Tom Hohman helped people to their cars with their purchases.

We had fabulous plants for the auction. Jo Clouser did a great job again as our auction recorder. Mildred Kontak registered bidders. Thanks to Rolland Kontak for a great job as auctioneer. You made it a lot of fun, Rolland! Sue Nord Pfeiffer and Kevin Tunesvick assisted Rolland and even did a little auctioneering of their own. Kelly Frank helped out as well. This year our door prize was a copy of Carolyn Harstad's new book, *Got Shade?* Several people joined INPAWS at the plant sale, where we debuted our new membership flyers, designed by Mark Outcalt. Other customers generously gave donations to INPAWS at the sale. Thank you to all who purchased plants and those who stuck around to help with cleanup and plant carrying.

Additional thanks to these volunteers and donors: Cheryl and Andy Andrews, Dawn and David Bauman, Chris and Jim Brewster, Phyllis Bird, Jan Dimich, Krista Gremos, Ande Gromosky, Marion Harcourt, Colletta Kosiba, Kim Krull, Donovan Miller, Gary Neff, Barbara Norton, Rich Peine, Pat Richardson, Jane Savage, Jane Stallcap, Rosie Springer, Bob and Doris Thomas, Susan and Ted Ulrich, Mary Wollitz-Dooley. If we have omitted anyone, we sincerely apologize.

Special thanks go to Rebecca Dolan for her support and encouragement and to Janice Gustafarro for her willingness to help in so many ways.

Thank you to all the volunteers and donors for all your help. The sale was a success because of you. You did a wonderful job. It was really a pleasure to work with each one of you.

Indiana Native Plant and Wildflower Society (INPAWS) Small Grants Program Guidelines for 2004

Note: This year's deadlines for grant proposals to be submitted are May 1, 2004, and September 1, 2004.

INPAWS has a small grants program to support projects that are in line with the mission of the society. Toward that end, the Board voted in 1998 to allocate \$10,000 from the general fund to an endowment account. Interest from this account will be available for grants. The Awards Committee anticipates

funding two grants of up to \$500 each this year.

We hope that these small grants will be used in conjunction with other sources of funding for project enhancement such as signage and brochures, special plantings or purchase of native seed stock.

The mission of INPAWS is to promote the appreciation, preservation, conservation, utilization and scien-

tific study of the flora native to Indiana and to educate the public about the values, beauty, diversity and environmental importance of indigenous vegetation.

Applications are requested from groups or individuals and must be post-marked by **May 1, 2004**, or **September 1, 2004**. They will be reviewed by the committee.

Application Procedures for the INPAWS Small Grants Program

Please submit the following:

1. Cover sheet including

- Name of project
- Amount requested
- Location
- Applicant/contact person information: name, address, telephone
- New or existing project
- Category that best describes the project: research, training, education, conservation and habitat, demonstration garden, etc.

2. Text of proposal

(not to exceed 2 pages)

- a) A summary of the project, not to exceed fifty words
- b) A clear, concise description of the project which includes the following:
 - How does the project further the INPAWS mission?
 - Why is the project needed?
 - Specific objectives to be achieved

- Specific information on how INPAWS grant funds would be used
- Who benefits from the project? How many? How do they benefit?
- Names of organizations involved, if any, with a brief description of each, including number of members
- Financial resources committed to the project from other sources, if any
- Anticipated starting and completion date of the project

3. Budget sheet showing:

- a) Labor, material and program costs
- b) Sources and amounts of funds already raised, if any
- c) Total cost of project

Successful awardees must prepare a poster or other presentation to share with the membership at the Annual Conference subsequent to completion of the project.

Mail four copies, or email one copy of the grant proposal, post-marked by May 1, 2004, or September 1, 2004, to:

Joan Mohr Samuels
5828 Prophets Rock Road
West Lafayette, IN 47906
(765)567-7023
mohrsamuels@insightbb.com

Larger Grant Awards

At the discretion of the Board and membership, larger awards may be made from time to time from the assets of the operating budget. Requests for funds for special projects may be made at any time to the Executive Committee. All requests must be made in writing with a clear statement of how the award would further the mission of INPAWS and benefit our membership.



M U L T I F L O R A E

Muscatatuck Service Project

A service project has been developed for young people involving invasive species removal at Muscatatuck NWR. Youth groups, or individual youngsters supervised by parents, can earn a patch by spending 8 hours on the refuge removing invasive plants. For more information contact Donna Stanley at 812-522-4352.

Central Chapter News and Meetings

A grateful thank-you to Virginia Harmon, Mildred and Rolland Kontak, Dee Ann Peine and Betty Randall who helped Betsy and George Wilson plant nearly 200 trees at Fort Ben State Park so that chapter members could get into the park free for our October meeting.

At last year's October meeting, chapter members voted to take care of the wildflower garden at the Historical Society as a chapter project. The state weeds and mulches the garden. We need a volunteer, possibly one who works downtown near the Historical Society, to monthly monitor the garden and email members who have volunteered to work on the garden with a time and date to get together to thin and maybe transplant overgrown plants. The monitor need not be a part of the work force. Call or email Betsy Wilson if you can volunteer. (317/255-3304, geobet@iquest.net)

Sunday, August 22, 2 to 4 PM
Clegg Memorial Gardens (east of Lafayette, IN) Jim Peterson will lead us on a walk by Wildcat Creek to view summer wildflowers and wildlife.

Sunday, October 17, 2-4 PM
Fort Benjamin Harrison State Park.
Park Naturalist Jeannine Montgomery will talk about the fungal network in our soil and how it affects the soil's fertility. She will present ways to enhance and preserve the microorganisms in your soil. Those interested can take a wildflower walk in the park after the program.

December 12, 3-6 PM
Pitch-in Christmas Party at Virginia Harmon's home.

Hope to see many of you in the near future.

Betsy Wilson

Indiana Master Naturalist Program Ready to Grow in 2004

Take your knowledge of wildlife, conservation, and the natural world to a new level—become a Master Naturalist. The Indiana Master Naturalist program, a companion to the popular Master Gardener program, offers hands-on learning about the Hoosier outdoors and a chance to share knowledge and life experiences through volunteer service.

Participants spend a minimum of 24 hours in class with knowledgeable instructors getting an introduction to Indiana geology, soils, water, plants, wildlife and how people and resources interact. They then volunteer with local, state or federal natural resource agencies for 24 hours or more. Course participants who complete volunteer service become certified Master Naturalists, receive an Indiana Master Naturalist pin

and a subscription to the Indiana Master Naturalist newsletter.

Course costs begin around \$60 and vary with course length and number of instructors. Host agencies provide instruction, take-home resource materials and assistance in setting up volunteer service.

For more information or details on upcoming classes, visit the Indiana Master Naturalist website at: <http://indianamasternaturalist.org>

Classes will be posted on the site as they are scheduled.

Kankakee Sands Work Days

At the Kankakee Sands Project, Newton County

Third Saturday of each month.
Times vary.

Saturday, July 17, 2004
8 AM to 12 PM CST

Pull Common Mullein

Join Gus Nyberg for more exotic plant removal. On this workday we will be hand-pulling common mullein. This tall and distinctive weed is easy to spot and find even if you have no botanical skills. Bring a lunch, work gloves, hat and long-sleeved shirt to protect your arms from the hairs of the plant, otherwise you'll itch when they mingle with the sweat. We will provide cool drinks and go for a walk on the project afterwards. Meet at the Kankakee Sands Office 3294 N US 41. For more information, or to RSVP, contact Gus Nyberg at gnyberg@tnc.org or phone 219/285-2184.

Saturday, August 21, 2004
9 AM to 1 PM CST

Weeding at the Native Plant Seed Nursery

Pull pesky weeds with Alyssa Solomon, nursery manager. Come help liberate our wildflower nursery beds of such weeds as lambs quarter, mare's tail, and nettles. This work helps ensure we don't harvest weed seeds later along with the good seeds we're after. Bring work gloves and a lunch, we'll supply the lemonade and watermelon. Meet at the Nature Conservancy Office located at 3294 N US 41, 2 miles north of Enos. RSVPs appreciated, but not required. 219/285-2184.

Saturday, September 18, 2004
10 AM to 2 PM CST

Seed Collection at the Native Plant Seed Nursery

September is prime time for collecting native plant seeds. Join us as we fill our collection bags with seeds grown in the Kankakee Sands nursery beds. We will provide the collection bags and clippers. We'll go for a hike on the project after the workday and see many grasses and wildflowers. Bring work gloves, binoculars, and a lunch. Meet at The Nature Conservancy Office located at 3294 N US 41, 2 miles north of Enos. RSVP's appreciated, but not required. 219-285-2184.

Saturday, October 16, 2004
10 AM to 2 PM CST

Harvesting and seed cleaning workday

Those sneaky goldenrods are finally ready for harvest in October. Come indulge yourself in a day of learning the many shapes and sizes of our native goldenrods. Additionally, we will have the opportunity to clean seed of late-flowering plants at the

seed barn. This work is low-impact and can be dusty. Gloves and long sleeves are a good idea. It is interesting to see how unique wildflower seeds are! Please bring your lunch and water. Meet at The Nature Conservancy Office located at 3294 N US 41, 2 miles north of Enos. RSVPs appreciated, but not required. 219-285-2184 or contact Stephanie Frischie at sfrischie@tnc.org

Saturday, November 20, 2004

9 AM to 1 PM CST
(Chicago Time)
10 AM to 2 PM
(Indianapolis Time):

Seed Cleaning and Sorting at the Seed Barn

As the 2004 growing season winds down, the last step before prairie planting time is to clean the seeds. This involves scrubbing the seed heads against screens and sifting to separate the good from the not-so-good. It's also time to begin sorting and organizing the seeds for planting. This calls for good alphabetization skills and is a neat way to familiarize oneself with the names of many native species. Bring a lunch and dress for the weather; we will be indoors in a mildly heated barn. Gloves and long sleeves are a good idea for working with the dry plant material. Meet at The Nature Conservancy Office located at 3294 N US 41, 2 miles north of Enos. RSVPs appreciated, but not required. 219-285-2184 or email Stephanie Frischie at sfrischie@tnc.org.



Emerald Ash Borer Confirmed in Indiana

After receiving lab results from the U.S. Department of Agriculture, DNR officials confirmed that the emerald ash borer had infected a tree in Steuben County. This is the first confirmation of the ash tree-killing pest in Indiana. It was discovered Monday at the Yogi Bear Jellystone campground on Barton Lake in Steuben County about 40 miles north of Fort Wayne. The adult emerald ash borer is slender with a bright metallic coppery green color. It is about one-third of an inch long. The larval, or immature stage of the insect destroys live ash trees by eating the layers under the bark of the tree that supplies nutrients. After those layers are destroyed, the tree starves to death within a short time.

Infestations are most easily identified by tiny D-shaped holes that are visible on the tree's bark. The bark may also develop lengthwise cracks or fissures.

To date, millions of ash trees have fallen prey to the emerald ash borer and a number of Michigan counties are under quarantine. The pest also has been found a few miles east of the Indiana border near Hicksville, Ohio and a few miles to the north in Quincy, Mich.

State Entomologist Dr. Robert Waltz announced today that the state would begin to take steps to contain the spread of the infestation. Homeowners can help by keeping their trees well watered and watching out for signs of this pest. The emerald ash borer first attacks weak and troubled trees. Ash trees need an inch of water per week to remain healthy. It's important to maintain tree vigor," he said. Additional information about the emerald ash borer is available on the DNR Web site at: www.in.gov/dnr/entomolo/pestinfo/ashborer.htm

A Ravine is Rescued with INPAWS Support

by Donna Ormiston

If you should happen to visit Nashville, Indiana, be sure to take a moment to walk north and east of the Courthouse and visit the “new” (although it is three years old now) award-winning Brown County Public Library. Designed by Ratio, Inc., of Indianapolis, it is a user-friendly place and a treat even for nonresidents.

Adorning the interiors is a variety of Brown County art, including a portfolio of Bill Zimmerman birds on the main floor near the fireplace (a must-see), Hohenberger photos in the lower level, paintings by famous Hoosier artists such as T. C.

Steele, a nature-scape metal sculpture on the open staircase, and fiber art. Outside, enjoy flower beds planned and coordinated by Bern Waldheim and maintained by the Brown County Herb Society and Friends of the Library volunteers.

East of the library is a wooded ravine that is slowly being rescued from a mass of nonnative invasives: Amur bush honeysuckle, Oriental bittersweet, Japanese honeysuckle, common privet, burning bush, purple wintercreeper, and multiflora rose. Thanks to a significant grant from INPAWS, along with contributions from other private groups,

individuals, and government agencies, work is going forward to eliminate unwanted vegetation. Eco Logic, a Bloomington based environmental restoration company, is applying its eradication know-how to remove these undesirable plants. Once that is completed, native



grasses and sedges will be introduced to control erosion and arrest the opportunistic return of invasive plants. Then paths will be created that wander among native woodland plants, shrubs, and trees. Individuals and groups with caring hands and minds will be the project’s long-term stewards.

It is the hope of a committee chaired by Ruth Ann Ingraham with membership that includes The Nature Conservancy, SCINPAWS, Brown County State Park, Friends of the Brown County Library, Purdue Extension, Gene Bush of Munchkin Nursery, and interested

residents, to recreate what might have been in that ravine years ago. As the area evolves from an invasive-choked landscape, it will provide a model for what can be on wooded lots throughout the area. Library patrons and visitors witnessing this change will begin to

see the potential for woodland gardening and learn that it is not necessary to cut trees or clear the understory to have lovely flowers and shrubs. The library hopes residents will appreciate the beauty of a naturally landscaped area.

You can learn more about this project by visiting the site or contacting Ruth Ann Ingraham rai38@aol.com,

June Loomis

june.loomis@worldnet.att.net, or
Donna Ormiston
dlormiston@juno.com

Plan a visit now so you can appreciate the change.

Donna Ormiston, a retired reading teacher, gardens with shade-loving perennials and native plants on a wooded lot in Brown County.

Here's to Health was the theme for Indiana Organic Gardeners' successful third seminar, held on Saturday, April 10, at the Hamilton County 4-H Fairgrounds east of Noblesville. It featured an all-natural breakfast donated by Wild Oats Natural Marketplace and an awesome organic luncheon prepared by Kathleen Kitch and Dana Goodman, organic farmers from Western Indiana, and several of their fellow farmers ("star" baker Nadine Vogrig made some amazing desserts and breads!).

Keynoter Felder Rushing's topic was "Breaking the Rules for Good Cause." This author and lecturer from Jackson, Mississippi, cajoled and inspired us to follow our own hearts and minds as we make our way into organic gardening and the use of native plants along with our favorite "exotics." (Author's note: That's a word that's hard for me to use, as I find it unnecessarily pejorative in nature. Oops . . . no pun intended!)

Rushing is a nationally known garden writer (his latest book is *Tough Plants for Northern Gardens*), a radio personality (now that he's retired from being the extension agent of Hinds County), and a garden design individualist of the first rank. The New York Times has described his front yard as looking "as if a collection of folk art had flown overhead, hit a sudden Mississippi thunderstorm and made a crash landing" (June 22, 2000). Rushing extols the virtues of "old lady gardens"—those that are

planted every which way . . . where they liked it, how they liked it, and "anybody who doesn't like it can go home!" The lessons are: fewer chemicals, more natural, less maintenance, more fun. The biggest lesson, though, was inspiration!

Other speakers were Elizabeth Maynard of the Department of Horticulture and Landscape Architecture, Purdue, on *Vital Victuals: Growing Veggies Organically*; Lydia Anderson, of Worms Way, Bloomington, who writes a weekly organic gardening column for the Sunday Indianapolis Star, on *Composting Clues & Turf Tips*; Brian Nielson, an ecological engineer with J. F. New of Walkerton, Indiana, a devotee of native plants and an avid "amateur" organic gardener, on *Pollution Solutions & Rain Gardens*. His talk was so popular that IOGA is considering a special half-day workshop on rain gardens in the near future.

IOGA is particularly grateful to Worms Way (a hydroponics and organic gardening retailer--www.wormsway.com) and the Legacy Fund of the CICF for grants that allowed our small group to engage these fine speakers. For those new to the Indiana Organic Gardening Association, our mission is educate ourselves and others in the reasons for and methods of environmentally friendly gardening, and to encourage the reduction of chemical dependency in gardens, lawns and farms. Please visit us at www.gardeningnaturally.org

to read more about our group and how to become a member. Or contact the author at 317-773-5361; vegetable@earthlink.net.

The nonprofit group hopes to continue the seminar tradition yearly.

An Invitation from IOGA

Please join Indiana Organic Gardeners Association (IOGA) at COPE Environmental Center in rural Centerville, IN, near Richmond for our quarterly meeting on Saturday, July 17, 2004. The usual Q&A session will be followed by a delicious carry-in meal shared by members (who provide their own dinnerware and beverage). The program will be a talk and tour of the center--an educational, demonstration and research project whose goal is inspiring ecologically sustainable lifestyles. Learn about the organic gardens, hiking trails, maple syrup production, gift shop, solar composting toilet and use of innovative materials. Since the meeting is about 75 miles from Indianapolis, car pools will be arranged. For more information contact Rosie, rosiebish@aol.com or (317) 786-2867.

Rosie Bishop, Vice President

Editor's Corner

by Bobbi Diehl

We hear so much about the invasive non-native honeysuckles, and not nearly enough about that well-behaved native *Lonicera sempervirens*, Trumpet or Coral Honeysuckle. It should be planted more often. Our two-year-old bush, which is apparently the species as the label lacked a cultivar name, really came into its own this May, exploding with firecrackerlike coral and gold blooms that attract hummingbirds and are good for cutting. Try some with 'Climbing Joseph's Coat' roses for a really showy arrangement.

Right now the 17-year cicadas are making their presence known in our part of Indiana. Outdoors, they swarm through the air, fly into your face, and perch on all the plants (they

particularly esteem Hosta 'Love Pat'). There are signs of egg-laying damage on the small trees I haven't covered in cheesecloth. They make a deafening racket. This morning, one got inside my T-shirt. Finding this invasion of my personal space intolerable, I had to rip off the T-shirt while standing (or rather jumping up and down and screaming) in the driveway. I pray the neighbors did not notice this lapse of decorum. By the time this issue is published, Brood X may be a mere memory. At that point, though, the Japanese beetles will probably be here so we will still have something to complain about.

Today the mail carrier delivered my comp copy of Marion Jackson's *101 Trees of Indiana*,

just published by Indiana University Press, with botanical drawings by Katherine Harrington and wonderful color photos by Ron Rathfon. The title is somewhat of a misnomer, as Jackson covers not only 101 native trees, but another 42 introduced and shrublike species as well. I worked on this field guide for a number of years before retiring from the Press, as did director and sponsoring editor John Gallman before his retirement. At long last it is available, and very attractive it is. I am afraid to ask how many copies were printed, but suspect it was too few; if you think you might want one or several, run, don't walk (as they used to say) to your favorite bookseller.



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Volume 11 Number 3 • Autumn 2004

NEWS

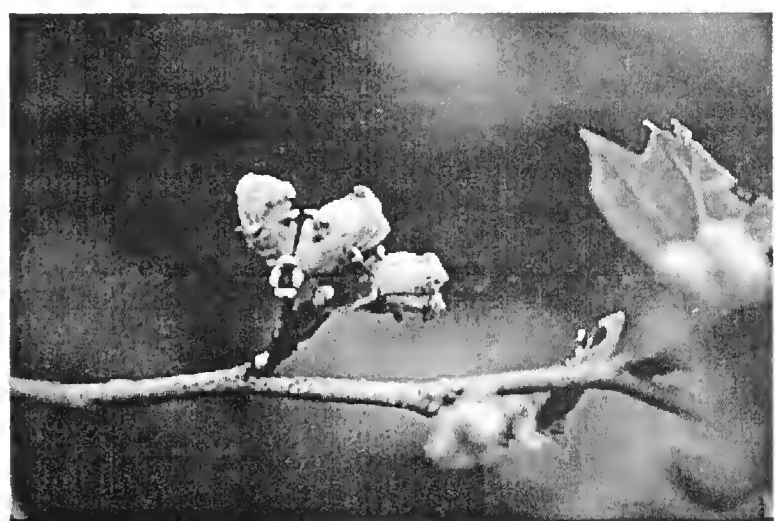
Marion Jackson's Favorite Native Trees: Part III **Witch Hazel** *Hamamelis virginiana* L.

by Marion Jackson

Witch hazel, which ranges in size from a large shrub to small under-story tree, is notable among woody species of forestlands of eastern

distance sometimes exceeding 25 feet. Seeds are dispersed, mortar-like, from the fruiting capsules much as one might discharge a

to most people, and is also apparent when the wood is burned in campfires.



Witch Hazel
(Hamamelis virginiana)

moist apple seed by pinching it between thumb and forefinger. Apparently seed viability and germination are quite high, judging from the rather widespread occurrence and reproductive success of witch hazel.

The wood is hard, close-grained, and moderately heavy, weighing in at 43 pounds per cubic foot, but trees generally are too small to be of economic use. However, in years past, youngsters in nature camps found the wood excellent for making small brooms and toothbrushes in their camp craft activities.

The leaves are borne alternately on slightly roughened, yellowish to brown twigs. Leaves

Witch hazel is tolerant of a range of soil and site conditions, including rocky hillsides, but it grows best on moist, fertile soils. It is often found at forest and woodland borders, but

North America for being the last to flower in most regions. The bright yellow, delicately fragrant flowers, each with four to eight ribbon-like, crinkled petals, grace the tree's aromatic branches in late October, November, or even December, as or after the leaves fall.

are broadly oval with coarse, rounded irregular teeth, unequal bases, and conspicuous parallel veins. In the fall, the leaves turn a bright yellow, then a warm brown. The inner bark of twigs is a distinctive dark reddish-purple.

Witch Hazel continued on page 2

Also noteworthy is the mode of seed dispersal from the nut-like fruiting capsules of the previous year, which mature alongside the fall flowers. When fully ripe, the fruits violently—and audibly—eject their shiny, hard black seeds for a

Both leaves and twigs are the source of an aromatic essence that has been added to an alcohol base to produce mildly astringent liniments or aftershaves that have enjoyed a rather wide acceptance and use, especially in years past. The distinctive fragrance of witch hazel is recognizable and pleasant

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it may also occur in deeper woods as an understory tree, or occasionally along streams. Tree-sized individuals are more likely found in the southernmost counties here in Indiana.

Of interest is the origin of the species' common name. The plant is not a hazel at all, but is the type genus of the Family Hamamelidaceae (which also includes the very common Indiana tree, sweet gum), hence the Latin name *Hamamelis virginiana*. More curious is its common name.

Early settlers (and likely dating back to Europe) widely believed that twigs from the witch hazel con-

ferred special abilities to certain individuals to dowse (or "to witch") for water flowing under ground, or even to locate hidden gold. For this use, a forked Hamamelis branch is carried with one prong of the fork in either hand, and with the main stem pointing forward from the dowser's body. According to this widely held supposition, while walking across the landscape, when a "vein" of underground water is encountered, the forked branch will automatically—and even against the dowser's will—turn and point downward. Believers firmly attest to the ability of witch hazel to select the proper location for water wells,

but there is no scientific evidence that dowsing does work.

Perhaps more plausible is the purported origin of the word *switch* being from the use of witch hazel twigs to discipline unruly children. I can imagine an exasperated parent saying, "You wouldn't stop doing that, so now I have to s-witch you." The author can vouch, from his own youthful misbehavior, that supple, wiry witch hazel twigs are effective for that purpose!

Marion Jackson is author of 101 Trees of Indiana: A Field Guide, published this spring by Indiana University Press.



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We welcome opposing viewpoints.

www.inpaws.org

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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Carolyn Q. Bryson 2000-2001
Ruth Ann Ingraham 1998-1999
Carolyn Harstad 1996-1997
Jeffrey Maddox 1994-1995

President's Message

by Rebecca Dolan

Hello, fellow native plant enthusiasts! I hope you had a good summer and that you and that your flowers enjoyed the cool weather and nicely spaced rain. The grasses in the Butler Prairie are the tallest ever and bee-balm had a great year.

It's time to start making fall plans and I want to draw your attention to the Annual Meeting, being held in Lafayette this year on November 6th. Nancy Hill and the organizing committee have been busy getting speakers and programs lined up.

A highlight of my summer has been getting a copy of my friend, retired Indiana State University Professor and current Professor at St. Mary-of-the-Woods, INPAWS member, and frequent newsletter contributor Marion Jackson's new book *101 Trees of Indiana*. This book is a great addition to the understanding of our flora. Many of you have no doubt used the *50 Trees of Indiana* brochure produced by Purdue University many years ago to learn and/or relearn native trees. Marion's book contains more plants and more information. Wonderful color pictures of tree parts, line drawings, county dot distribution maps and detailed species descriptions are included for native trees and a few introduced species. The book is

small format to be easily carried in the field, but large enough to be readable. It is published by Indiana University Press (ISBN 0-253-21694-X) and is very reasonably priced.

I am also pleased to announce that Jo Ellen Myers Sharp and Lynn Jenkins have agreed to pursue the state flower issue. For years INPAWS has been trying to have a native plant named as our state flower. The current state flower is the Peony, a native of Asia. I get many communications from people who see on our web site INPAWS's desire to make a change. It is an issue that resonates with a lot of people. Past INPAWS President Carolyn Harstad tried valiantly to move the state legislature, to no avail. Jo Ellen and Lynn will team with garden clubs in the state and may propose that a state native plant or state wildflower be named, leaving the Peony in place.

Finally, it's time to renew your INPAWS memberships. Please consider giving membership as a gift to family, friends and coworkers who should belong to our group.



Keynote Speaker

Rick Darke

will speak at 9:15 AM on:
*The American Woodland
Garden: Capturing the Spirit
of the Deciduous Forest*

www.inpaws.org

Visit our website for news and information about INPAWS and native plant issues, as well as links to related organizations concerned with preserving native plants and their habitats.

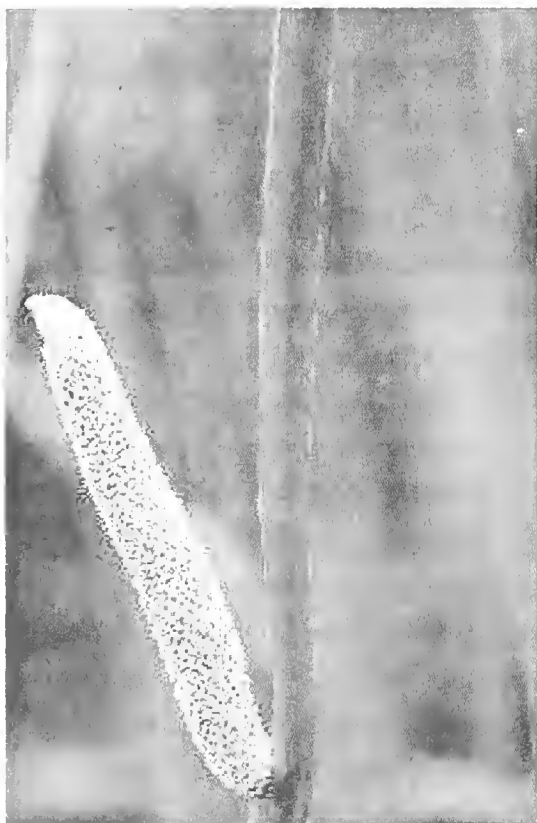
Marcia Moore
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Sweet Flag? Sweetflag!

by Barbara Plampin

Just seconds after I casually dismissed a stand of meter-tall, bright green leaf-swords as “Bur Reed (*Sparganium* sp.), nice, but not thrilling,” my friend Terry Bonace



Sweetflag
(*Acorus calamus*)

asked that unwelcome question, “What’s this?” This was a dull green, flag-like cylinder projecting stiffly from one of the swords at a 45-degree angle. Chagrined, I then identified the plant as Sweet Flag (*Acorus calamus*), a spathe-and-spadix arum (Araceae), like Skunk Cabbage and Jack-in-the-Pulpit.

Terry’s find might mean a new site for a plant I hazily recalled as a possible addition to the state rare plant list. Kudos to him, and easy writing for me. My new scholarly book on arums would supply additional details about a unique native

of worldwide distribution, with numerous folk names such as Gladdon, Sweet Sedge, Calamus, and Beewort, and uses as floor-covering, candy, and medicines. These uses arose from fragrant oils in rhizomes and leaves. One author says the scent is tangerine-like; I found it elusive but pleasant. The Potawatomie used the root for hemorrhage.

Easy writing? Ten books later: trouble! Botanists had moved *Acorus* into its own family, Acoraceae, and recognized three species, the smaller East Asian *A. gramineus*, suitable for houseplants and gardens, *A. calamus*, renamed One-veined Sweetflag and declared non-native, and *A. americanus*, Several-veined Sweetflag, the native of state interest. Even the spelling had changed.

Which one was ours? Leaf venation would tell. But was the longitudinal ridge in the middle of the unfolded leaf the one off-center vein of the alien? Were the several faint vertical lines on the leaves the veins of the native? I was baffled. Dr. Dan Mason, Indiana Dunes National Lakeshore botanist, kindly explained that the ridge was a keel on the folded leaf and declared the vertical lines veins. Bravo! Ours was the native, and it was of interest to the state. I forgave the new spelling.

The find grows with Common Arrowhead (*Sagittaria latifolia*), Swamp Rose (*Rosa palustris*), Moneywort (*Lysimachia nummularia*), Cattail (*Typha* ? hybrid), and

perhaps Tall Water Parsnip (*Sium suave*), as well as a Great Blue Heron. Between May 25 and June 30, tiny yellow-brown flowers appear on the flag or spadix emerging about midway up the sword called by some botanists the spate. Leaf bottoms are pink.

The spadix’s shape and tightly packed, hard green ovaries recall certain pine cones. The mathematically inclined may enjoy determining whether the ovaries are logarithmically arranged. Come fall, Dr. Mason hopes to gather some of the globose fruits for restoration work.

Thanks to Dr. Mason for his help. Here are some of the books I consulted:

Brown, D. *Aroids: Plants of the Arum Family. 2nd ed.*, Timber Press, 2000.

Grieve, M. *A Modern Herbal*. Dover, 1971 (1933).

Moerman, D. E. *Native American Ethnobotany*. Timber Press, 1998.

Swink, F. and G. S. Wilhelm. *Plants of the Chicago Region. 4th ed.* Indiana Academy of Science, 1994.

Yatskievych, K. *Field Guide to Indiana Wildflowers*. Indiana University Press, 2000.

Barbara Plampin is a member of INPAWS, a trustee of the Shirley Heinze Environmental Fund, and a member of Save the Dunes Council. She has a Ph.D. in English literature from the University of Michigan. Botany has been a life-long avocation.

You are invited to the Eleventh Annual INPAWS Conference

Saturday, November 6, 2004, 8 AM–4:30 PM, Duncan Hall, Lafayette, IN

The Program

8:00 AM

Registration and refreshments

8:45 AM

Welcome

Introduction of officers and committee chairs, INPAWS annual meeting

9:15 AM

General Session

Keynote Speaker:

The American Woodland Garden: Capturing the Spirit of the Deciduous Forest.

Author of the award-winning book of the same name, Rick Darke has studied and photographed North American native plants in their habitats for over 20 years. With his stunningly beautiful photography, he illustrates how to bring the best of the forest aesthetic, including play of light, seasonal drama, and architectural interest, into our gardens as well as our public spaces.

10:45 AM

Refreshment break and book sale

11:15 AM

Concurrent Session I

Dragonflies:

True Dragons of the Air

Dr. James Curry, author of *Dragonflies of Indiana*, has traveled nearly 40,000 miles within Indiana over the last decade gathering information on dragonflies. In this delightfully down-to-earth presentation, Dr. Curry discusses key identification features, habitats, and behavior of these shimmering summer beauties.

The Great Smoky Mountain Spring Wildflower Pilgrimage

The Spring Wildflower Pilgrimage is an annual seven-day event held the last week of April, when the Great Smoky Mountain National Park is in its glory with wildflowers. Hillside of Trillium Grandiflorum, beautiful specimens of Yellow Lady's-slippers, Dutchman's Pipe and Showy Orchis are just a few of the park's treasures. For a very modest registration fee, the pilgrimage offers over 50 wildflower, fauna, and natural history walks led by nationally recognized experts in topics as diverse as ferns, medicinal plants and brown bears. Fritz Nerding and other Indy Parks naturalists have led excursions to the Spring Wildflower Pilgrimage for many years.

12:00 PM

Lunch and Lunch Chats

During the lunch break, anyone interested will have the opportunity to join in the following informal discussions.

Peony, Firepink, Purple Coneflower or?: The NEW State Flower Project,

Jo Ellen Meyers Sharp and Lynn Jenkins

Water Plants,
Greg Speichert

Digital Nature Photography,
Rick Darke

Plant Rescue Through Propagation,
Dawn and David Bauman

INPAWS: The Next Ten Years,
Rebecca Dolan, INPAWS president

1:30 PM

Concurrent Session II

Insect Pollinators of Indiana's Forest and Savanna Wildflowers

For the last four years, **Dr. Peter Scott** and his students have studied plant-pollinator interactions in two Indiana habitats: upland deciduous forest (in the spring, near Terre Haute), and black oak sand savanna (in the summer, along the Kankakee River). His over-arching questions are conservation-related: what is the current state of pollination service in natural habitats of the American Midwest? Are most plant species adequately pollinated? Conversely, are insects that depend on floral foods adequately supported? These questions are shared by pollination ecologists worldwide, and Indiana landscapes are good natural laboratories in which to study them.

From Journaling to Nature Writing to a Published Work

In 1990 Indianapolis residents Ruth Ann Ingraham and her husband Joe purchased a simple retreat in Brown County, Indiana. Ruth Ann began a journal about their visits there. Ten years later she started to compose a story (based upon her comprehensive, detailed writings and data keeping) about that precious environment. Believing this story could be a book, Ruth Ann worked with an editor, approached Indiana University Press and the result is the upcoming publication of her book, *Swimming with Frogs: Life in the Brown County Hills*.

Annual Conference continued on page 6

2:15 PM

Refreshment break and book sale

2:30 PM

Concurrent Session III

Winter Identification of Trees and Shrubs

As children most of us made a leaf collection. Leaves are still the first way many of us identify a native tree or shrub. But in winter, in Indiana, we have only twigs and bark, no leaves, to tell us among which beautiful residents of the deciduous forest we are walking. Join **Sally Weeks**, Purdue University dendrologist and co-author of *The Trees of Indiana; Their Identification and Uses on CD ROM*, as she illustrates aspects of winter tree identification.

Natural and Native Ponds: Plants of the Midwest and the Creatures They Attract

Do you want dragonflies? Frogs? Turtles? Which plants you choose for your pond or wetland determines how diverse its ecosystem will be. Native plants can be used to create this rich habitat for an insect and animal population, while avoiding the weedy look. **Greg Speichert**, co-author of the recently released *Encyclopedia of Water Garden Plants*, illustrates what plants to use to have both a large creature base and a colorful, beautiful pond.

3:15 PM

Refreshment break and book sale

3:30 PM

General Session

Native Wildflowers on Roadsides: Why Not?

Highway corridors total some 12 million acres of land in the United States. Wouldn't it be great if these roadsides were planted with colorful, resilient native grasses, wildflowers, trees, and shrubs rather than the ever-present and costly carpets of grass? **Bonnie Harper-Lore**, co-editor of *Roadside Use of Native Plants*, is set on doing just that. She serves the Federal Highway Administration as a technical resource to all State Departments of Transportation. She works to research and share information on invasive species, native plants, restoration, vegetation management and public policy issues as they relate to roadside landscaping.

In her position as a national resource, Bonnie is ideally qualified to speak on why we have made the decisions we have, how far many state DOTs have come, and what remains to be done.

Speaker Biographies

Rick Darke is a widely published author, photographer, lecturer and landscape design consultant. His book, *The American Woodland Garden: Capturing the Spirit of the Deciduous Forest*, received the American Horticultural Society's Book Award, the Garden Writers Association Golden Globe Award for book photography and the National Arbor Day Foundation's Certificate of Merit.

Darke served on the staff of Longwood Gardens for twenty

years and as curator of plants from 1986 to 1997. His work with international plant exploration and introduction has taken him to Japan, south Africa, England, Germany, Brazil, Australia, New Zealand, Costa Rica, and the Canary Islands.

Darke's latest book is a *Pocket Guide to Ornamental Grasses*, just released from Timber Press. Other books include: *The Color Encyclopedia of Ornamental Grasses*, *In Harmony with Nature: Lessons from the Arts and Crafts Garden*, *The Royal Horticultural Society Manual of Grasses*, and *Garden Favorites: Designing with Herbs, Climbers, Roses and Grasses*. He has written for *Garden Design*, *Fine Gardening*, and *Style 1900: The Quarterly Journal of the Arts and Crafts Movement*.

His own garden in Landenberg, Pennsylvania, features native plants and regional relics. It has been featured in *Horticulture Magazine*, Ken Druse's award-winning *The Collector's Garden*, *Fine Gardening*, *HGTV Ideas*, *The American Gardener*, Peg Streep's *Spiritual Gardening: Creating Sacred Space Outdoors*, *The Garden* (The Journal of the Royal Horticultural Society) and a New York Times article by Anne Raver. Darke's work with deciduous forest ecology and design was the subject of Ketzell Levine's December 2002 NPR program "Talking Plants."

James R. Curry, PhD, is a professor of biology at Franklin College of Indiana. He received his doctoral degree in ecology and animal behavior from the University of Oklahoma. Author of

Dragonflies of Indiana, his interest in dragonflies developed while looking for projects that could involve his students in original field research. Dragonflies' brilliant colors, large size, and speed and versatility in flight made them popular with students. "Traveling Indiana while researching and photographing dragonflies has given me a new appreciation and respect for the natural beauty and diversity of the state."

Fritz Nerding has been a life-long student of Indiana natural history. After earning his degree in Natural Resources from Ball State University, Fritz was a ranger and naturalist at the 5600-acre Eagle Creek Park in Indianapolis. He is recognized as a Certified Park and Recreation Professional by the National Recreation and Park Association and a Certified Interpretive Guide by the National Association for Interpretation. Fritz is currently the park manager for Glens Valley Nature Park in Indianapolis, where he teaches environmental education. He maintains a portion of the park as a native tall grass prairie.

Peter Scott, Ph.D. is Associate Professor of Life Sciences at Indiana State University. He is a field ecologist who specializes in pollination ecology and avian ecology. He has written for a number of journals on pollination ecology and ornithology. For the last four years he and his students have studied the diversity of pollinator communities, the nectar characteristics of flowers and the response of insects to this resource and the overall success of flowers

and the effectiveness of different insect visitors as pollinators. Peter earned his Ph.D. from Louisiana State University in 1989.

Ruth Ann Ingraham, lifetime Hoosier and Purdue graduate, is a traveler, naturalist, mother of two daughters and volunteer. While in the criminal justice field, she helped to establish a correctional after-care network. Ruth Ann is a co-founder and past president of the Indiana Native Plant and Wildflower Society, and currently serves as the INPAWS historian. She divides her time between Indianapolis and Brown County, Indiana. Ruth Ann is the author of *Swimming with Frogs: Life in the Brown County Hills*, available early winter, 2005, from Indiana University Press.

Sally Weeks is a dendrologist with Purdue University and co-author of *The Trees of Indiana; Their Identification and Uses on CD ROM*. The Trees of Indiana began as a teaching supplement for students and expanded into a complete reference guide to all the native trees of Indiana. Each species is covered in detail with color photographs of leaves, twigs, buds, flowers, fruits, bark, form, habitat and range maps. Sally received her BSF in wildlife management and an MS in Forestry from Purdue's Department of Forestry and Natural Resources. She has taught aspects of tree identification at Purdue for 15 years.

Greg Speichert is the founder of *Water Gardening Magazine* and the American Water Garden Society. A popular speaker, he also writes frequently on water gardening for *Fine*

Gardening, American Nurseryman, and *Pondkeeper*. Greg and his wife Sue are co-authors of the recently released *The Encyclopedia of Water Garden Plants* from Timber Press. Greg is co-owner of Crystal Palace Perennials, a ground-breaking nursery that helped popularize water garden plants. The nursery is now dedicated to developing and introducing new plant varieties for the wholesale industry. He holds a degree in horticulture from Purdue University.

Bonnie Harper-Lore is a Restoration Ecologist with the Federal Highway Administration. She co-edited, along with Maggie Wilson, *Roadside Use of Native Plants* (2000, Island Press). Bonnie earned her MSLA degree from the University of Wisconsin with a focus on restoration and management of native plant communities. She then spent nine years as an adjunct professor for ecological principles of design at the University of Minnesota, four years as a landscape architect at the Minnesota DOT, two years as Midwest Regional Director of the National Wildflower Research Center, and ten years as a residential and commercial landscape designer.

Go to www.inpaws.org for more information and a downloadable registration form.



Poaceae = Grass Family = Gramineae

by Dr. Rebecca Dolan

620 genera and ca. 10,000 species. Found in almost every habitat with vegetation worldwide.

Indiana: 75 genera and 230 species.

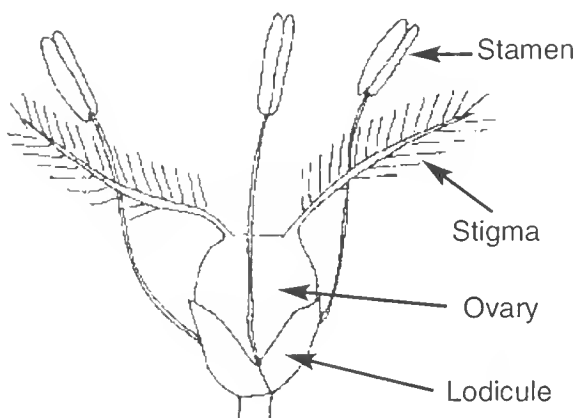
Characteristics

Monocots

Stems round; internodes hollow; leaves 2-ranked, alternate, parallel-veined; a ligule ("little tongue"), an appendage at the junction of the leaf blade and its sheath is usually present; bracts of glumes, lemma and paleas (see below).

Annual or perennial herbs, rarely shrub or tree-like.

Fruit or grain, rarely a nut or berry.



Grass Flower (*Gramineae*)

Economically important members of the family

The most important family for humans, the Poaceae provide:

- food crops: rice, wheat, corn, barley, millet, rye, oats, milo, and sugar cane
- range forage, in North American prairies: big bluestem, little bluestem, Indian grass
- shelter: bamboo, thatch
- soil conservation
- turf: Bermuda grass, bluegrasses, fescues, ryegrass
- ornamentals

Plant Products

Grains, flours, starch, ethyl alcohol, citronella, clarinet reeds.

Flower Details

Flowers in the grass family are highly modified. Grasses are wind-pollinated and do not invest energy in producing colorful petals. These are not needed and would get in the way of pollen flow. Because grasses rely on the wind to carry pollen for cross fertilization, they produce copious amounts of pollen. This is why they are hayfever triggers.

Grass flowers have basically only the reproductive parts, **stamens** to produce pollen and **stigmas** to catch it. **Styles** are short. **Ovaries** where the eggs are produced are surrounded by **lodicules**, reduced structures analogous to the petals and sepals.

These flowers are arranged in florets, a structure consisting of a flower and two bracts, the outer called the **lemma**, the inner called the **palea** (see figure below). Multiple florets are often linked together in **spikelets**, or inflorescences. The "stalk" linking them together is the **rachilla**. Now, if that were not enough, each spikelet is subtended by two additional bracts called the **first** and **second glume**.

Many folks never appreciated grass flowers and spikelets until the use of ornamental grasses (many non-native) in landscaping became popular a decade or so ago. We mow our lawn grass before it blooms. Grass, being forage food for large animals, was preadapted to be mowed, which is very much like being grazed by a herd of herbivores. Grasses have **meristems**, or growing points, at ground level, so

being bitten or bladed off at three inches of height does no harm and the plant can easily regrow.

Common Native Indiana Grasses

In prairies:

Big bluestem (*Andropogon gerardii*)

Indian grass (*Sorghastrum nutans*)

Little bluestem

(*Schizachyrium scoparium*)

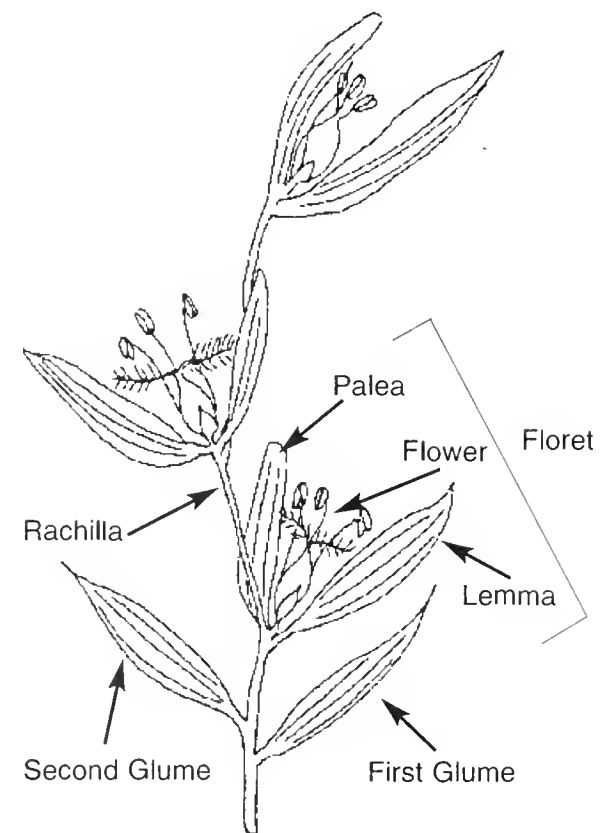
Switch grass (*Panicum virgatum*)

In woods:

White grass (*Leersia virginica*)

Virginia wild rye

(*Elymus virginicus*)



Grass Spikelet (*Gramineae*)

Figure from: Jones, S.B. and A.E. Luchsinger. 1979. *Plant Systematics*. McGraw-Hill, Inc. New York, NY. 388 pp.

Becky Dolan is president of INPAWS, and the Director of Friesner Herbarium at Butler University.

New Weed in My Garden: *Or, the Mystery of Perilla Mint*

by Charles Heiser

In the summer of 2003 I was walking through my garden, which is really the botany experimental field of the Indiana University Biology Department, when I saw an unfamiliar plant—actually 31 plants. I soon identified them as *Perilla frutescens* and wondered how they had gotten there. This plant does occur in Indiana as a weed but had not previously been reported for our county.

Carlos Miller, a plant physiologist, had used it in day-length experiments in the greenhouse at the biology building on campus as far back as 1947. His original seeds came from Italy. The experimental field is over a mile from the biology building, and all of the discarded plants from the greenhouse with their soil are taken there for recycling. Although this material is sterilized before it is used again, it is conceivable that some seeds could have escaped at the field before they were killed. Therefore, Carlos's plants could have been a source of the new plants, but why had it taken so long?

In talking with the greenhouse crew I also learned that Katherine Preston, a doctoral student, had grown perilla in the early 1990s. Preston, now teaching at Stanford University, kindly confirmed that she had grown plants at the experimental field; her seeds came from three sources: Morgan-Monroe State Forest and the Deam Wilderness in Indiana, and the state of Georgia. The leaves of her plant were purple, similar to the "wild" type.

Most of Carlos's plants were much like hers, but all of mine had green leaves. I thought that the lack of red in the leaves might be due to the



Perilla mint
(*Perilla frutescens*)

plants' growing in shade rather than full sun. On the other hand, I had no evidence that it wasn't genetic. A DNA examination might reveal more, but was hardly warranted. Next summer, however, transplant tests can tell me if the leaf color is genetic.

The leaves' reddish-purple color is responsible for one of the plant's common names: beefsteak plant. This common name is used for several other plants, all with red or purple leaves: *Begonia feastii* (begonia family), *Pedicularis canadensis* (figwort family), and *Iresine herbstii* (amaranth family). Perilla is of course a member of the mint family, although it does not have the strong odor of so many

mint. I do not find it mentioned in my herb books for the U.S., but immigrants have introduced it. H. A. Gleason and A. Cronquist (1991), however, warn us that used in large amounts it causes severe pulmonary edema.

When I mentioned its uses to my colleague, Marti Crouch, who is the mushroom inspector at the local farmers' market, she brought up another one—as a medicinal plant. She had observed it sold as such in the market by an Asian couple. She tells me it is used for abdominal pain, diarrhea, vomiting, coughs, fevers, and colds, according to S. Foster and J. A. Duke (1990). Like many weeds, perilla benefits humankind in many ways. In the U.S. and Europe it is widely used in gardens for its showy leaves. In south Asia, where it is native, the seed oil is used in cooking as well as in industry and the leaf is used as a condiment in food.

In 2004 perilla appeared in great numbers in my garden. I think it is likely here to stay; it is not growing in an area that is needed in the field so there will probably not be any attempts to eradicate it. I transplanted five seedlings to various sunny spots, and all of them developed a reddish undersurface on the leaves.

Charles B. Heiser is Distinguished Professor Emeritus, IU Bloomington. He is the author of Weeds in My Garden (Timber Press) as well as books on sunflowers, gourds, and economic botany.

Spread the Word!

INPAWS has made it easy for you to be the speaker on native plants at your organizations!!! Each of our programs has slides in a carousel accompanied by a written script to read as you show the slides. Easy!! All you do is contact Chairman Colletta Kosiba by phone 317-852-5973 or e-mail k_colletta@hotmail.com, reserve the program and she will send it to you.

All of the INPAWS programs are written to encourage people to use native plants in their gardens and yards. The programs are entertaining as well as educational.

SPRING WILDFLOWERS

40 of those lovely spring ephemerals we find in the woodlands.

SUMMER WILDFLOWERS

40 sun-loving plants of the fields.

INVASIVE PLANTS

Some of the worst invasive plants that are harming our environment.

NATIVE PLANTS FOR YOUR SHADE AREAS

Not only flowers but vines, groundcovers and ferns to show the diversity natives can provide in the shade garden.

NATIVE TREES AND SHRUBS

Some of the many native trees and shrubs, including interesting facts about their uses.

WHO ARE THESE ALIENS?

Flowers from other continents that have naturalized and are now Indiana wildflowers and their weedy cousins. How they got here and their uses.

So far this year members have presented these programs to garden clubs, master gardeners, master naturalists, community service organizations, conservation groups and Audubon societies in Indianapolis, Brownsburg, Terre Haute, Auburn, Southern Indiana, Bloomington, Garnett, Valparaiso, Elkhart, Greenfield, and Danville.

Share the good news about native plants in your area. Call Colletta today and make arrangements to use the slides at one of your organizations or do a program for your local library! Remember everyone benefits, especially the wildlife. They will thank you for having more native food available!

Colletta Kosiba,
Speakers' Bureau chairman

317-852-5973

e-mail: k_colletta@hotmail.com



Weevils Combat Purple Loosestrife

Two hundred hylobius weevils were recently released on the shore of the Grand Calumet River by employees of the environmental consulting firm J.F. New. The small brown weevils have been introduced to combat the spread of purple loosestrife. The release of the weevils and



Hylobius transversovittatus

subsequent monitoring of their progress is being funded by U.S. Steel as part of a settlement agreement making the mill responsible for restoration of a stretch of the Grand Calumet. The agreement calls for U.S. Steel to check the spread of invasive species along its banks.

Hylobius weevils are native to Europe and feed exclusively on purple loosestrife. The weevils lay their eggs near the root base of the plant. When eggs hatch larvae burrow down the plant's stem to the roots, which eventually leads to the plant's death. Their numbers will slowly increase, and while the loosestrife will never be eradicated, weevils will keep it in check, permitting the return of native species.

Indiana Native Plant and Wildflower Society (INPAWS) Small Grants Program Guidelines for 2005

Note: **March 1, 2005** is the deadline for 2005 grant proposals. (This will be the only time for grant proposal submissions in 2005.)

INPAWS has a small grants program to support projects that are in line with the mission of the society. Toward that end, the Board voted in 1998 to allocate \$10,000 from the general fund to an endowment account. Interest from this account will be available for grants. The Awards Committee anticipates funding two grants of up to \$500 each in 2005. These small grants can be used in conjunction with other sources of funding for projects which support the mission of INPAWS.

The mission of INPAWS 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.

Applications are requested from groups or individuals and must be e-mailed (preferred) or postmarked by March 1, 2005. They will be reviewed by the Small Grants & Awards Committee.

Application Procedures for
INPAWS Small Grants Program:

1. Cover sheet including:

- Name of project,
- Amount requested,
- Location,
- Applicant/contact person information: name, address, telephone,
- New or existing project,
- Category that best describes the project: research, training,

education, conservation and habitat, demonstration garden, etc.

- Prior INPAWS funding

2. Text of proposal (not to exceed two pages):

- a) A summary of the project, not to exceed fifty words
- b) A clear, concise description of the project which includes the following:
 - How does the project further the INPAWS mission?
 - Why is the project needed?
 - Specific objectives to be achieved;
 - Specific information on how INPAWS grant funds would be used, including a detailed species list of all plants and seeds to be used;
 - Who benefits from the project?
 - How many? How do they benefit?
 - Names of organizations involved, if any, with a brief description of each, including number of members;
 - Financial resources committed to the project from other sources, if any;
 - Anticipated starting and completion date of the project.

3. Budget sheet showing:

- a) Labor, material and program costs,
- b) Sources and amounts of funds already raised, if any,
- c) Total cost of project.

Successful awardees must prepare a poster or other presentation to share with the membership at the Annual Meeting subsequent to completion of the project.

E-mail one copy (preferred) or mail four copies of the grant proposal postmarked by March 1, 2005 to:
Joan Mohr Samuels (765) 567-7023
mohrsamuels@insightbb.com, or,
5828 Prophets Rock Rd.
West Lafayette, IN 47906

Larger Grant Awards

At the discretion of the Board and membership, larger awards may be made from time to time from the assets of the operating budget. Requests for funds for special projects may be made at any time to the Executive Committee. All requests must be made in writing with a clear statement of how the award would further the mission of INPAWS and benefit our membership.

The INPAWS Spring 2004 Small Grant Award

The Small Grants & Awards Committee received four proposals for review in May 2004. **An award of \$472 was given to Mary Damm, a Ph.D. student at IU-Bloomington, to help finance her scientific study of mycorrhizal fungi and the role they play in the sand prairie and savanna communities of northwestern Indiana.**

The committee felt that her research project could prove to be very significant for the long-term conservation and preservation of Indiana's native flora. Mycorrhizae are very under-studied and her research may help explain why some prairie restorations fail and why some invasive plants have such an advantage in disturbed areas.

We look forward to a future report or poster display about her research.

M U L T I F L O R A E

INPAWS Regional Chapter News

Central Chapter News and Meetings

December 12, 3-6 PM

Chapter Christmas Party at Virginia Harmon's home, 8814 Rocky Hill Road, Indianapolis Bring a dish to pitch-in and enjoy good company and good food as well as Christmas spirit with other chapter members.

Jean Schkeryantz has agreed to be the coordinator for the native garden on the canal at the History Center (Historical Society). The Central Chapter has agreed to take care of the garden if we are allowed to weed it and label the plants so passersby can see some of our native plants growing in a garden setting. Thank you, Jean!

A hearty thanks to Jim Peterson, who led the August 22 walk at Clegg Memorial Gardens. The meeting was well attended, and the participants were so impressed with the grounds that they wanted to see them in other seasons. Chris Brewster has graciously volunteered to keep an eye on blooming times and let us know when the spring flowers are at their peak so that we can plan a group trip or individuals can go up to the gardens to see them.

Betsy Wilson, President,
Central Chapter

Upcoming East Central INPAWS Meetings

Wednesday, October 13, 7 p.m., Minnetrista, Muncie. Kem Badger on "Trees of Indiana."

Wednesday, November 10, 7 p.m. Minnetrista, Muncie. Kevin Tungsveick on "From Gentians to Skunk Cabbage."

Our February, March, and April speakers will be emailed in January. If you have any questions, call Marcia Johnson 765-288-5629.

Cleanup:

Brown County Ravine Project
October 23, 9:00 a.m.

Parking and lunch provided

In October, the Brown County Public Library Ravine Project is focusing on clearing trash, dead brush, and alien vegetation from the ravine east of the library. (For details about the project see the INPAWS Summer 2004 Newsletter, page 16.) Help is needed to supplement our local volunteers. Workers will need sturdy shoes, heavy-duty gloves, clippers, and loppers.

If you can help, contact Donna Ormiston, dlormiston@juno.com or (812) 988-6418.

The Brown County Public Library is located at 205 Locust Lane. From S.R. 135, turn right if you are traveling north, left if you are traveling south, one block north of the Court House in Nashville. Go two blocks (you will drive by the

County Office Building on your left) into the library's lower (and larger) parking lot. Park at the upper end of the lot on the ravine side.

Calling All Naturalists and Naturalist Wanna-be's to *Wednesdays in the Wild*

Natural History Workshop/Field Trips 1-3 p.m. or as noted, October—November 2004

October 6, 1-3 p.m. Fen & Prairie Plants, Tom Burkhart, STPK

October 13, 9-11 a.m. Wings over the Marsh, Susan Ulrich, LNC

October 20, 10-12 noon, Fall Colors Hike, Brian Tunis, HHP

October 27, 1-3 p.m., Exploring the Wabash & Erie Canal, Dan McCain, DELPHI (meet in Interpretive Center in Delphi's Canal Park.)

November 3, 1-3 p.m. To be announced.

November 10, 9-11 a.m., Winter Feeder Birds, Diane Packett, LNC

Locations:

DELPHI (Canal Park): At Court House, turn north on N. Washington St. & go 11 blocks; turn left at signs for Canal Park (1030 N. Washington St. 765-564-6572)

HHP (Happy Hollow Park): First parking lot off Happy Hollow Road, West Lafayette

HORT (Purdue Hort Park): Meet in parking lot alongside McCormick Rd just north of its intersection with SR 26 in West Lafayette (on the west side of the Purdue Campus)

LNC (Lilly Nature Center/Celery Bog Nature Area): Lindberg Rd in West Lafayette

STPK (Prophetstown State Pk): Enter the Park via Swisher Rd (off North Ninth ST. just south of Battle Ground); meet at Coneflower Shelter. **(there is no park entrance fee on weekdays)**

For more information or to help with this program, contact Mary Cutler (567-2993) or Joan Mohr Samuels (567-7023, mohrsamuels@insightbb.com)

Sponsored by:

Mary Cutler - Naturalist,
Tippecanoe Co. Parks & Rec Dept.

Brian Tunis - Beautification &
Stewardship Dir., WL Parks & Rec,
Sycamore Audubon Society,

West Central Chapter of INPAWS
(Indiana Native Plant & Wildflower
Society).

Job Opportunity

The Indiana Wildlife Federation has received the "Conservation Education Connection," another grant from the Nina Mason Pulliam Charitable Trust, to establish Schoolyard Habitats in 20 IPS schools. The Schoolyard Habitat program of the National Wildlife Federation promotes conservation education through outdoor learning with an emphasis on wildlife and natural resources. To further encourage conservation ethics in downtown Indy, the grant requires a minimum of 50 BWH to be established. We hope to focus on the homes and communities of the students at the SYH schools. Yet, not all the BWH need to be at private homes: we are already working with VA Hospital, and Coburn Place Safe Haven to establish yards that will be inviting to the inhabitants as well as to wildlife! Other options are open.

We are looking for someone to administer the BWH part of the grant. (I am working with the schools). The job is part-time and very flexible in both description, and work hours. Ideally the applicant will be a Habitat Steward (new class this fall), have a good under-

standing of wildlife gardening (or willing to learn), and be comfortable working in the inner-city environment. The IWF office is in Carmel. Pay would average about \$13/hour. The BWH person would be working directly with Paula Yeager and me.

If you would like more information about this job, please contact one of us. Share this job prospect with those you know. This is an ideal position for an ex-teacher, bored gardener, or someone just looking for a way to help with conservation and education in our community. Can't get much more rewarding than helping kids and wildlife! Let me hear from you!

Lynn Jenkins, 317-571-1220
Indiana Wildlife Federation
950 N. Rangeline Rd.
Carmel IN 46032
ljenkins1@choiceonemail.com



Editor's Corner

by Bobbi Diehl

Prophetstown State Park

Located at the confluence of the Tippecanoe River and the Wabash near Battle Ground, Indiana's newest state park gets its name from Prophet's Town, the Shawnee village established by Tenskwatawa (The Prophet), brother of Tecumseh, that was destroyed during the Battle of Tippecanoe. The park's landscape has been shaped by the glaciers, the rivers, the fires that regularly burned the tall-grass prairie, and of course by the humans, from the Native Americans who hunted and lived here to the French trappers and traders to the pioneers who grew corn and wheat in the rich soil. The prairie is being restored, and wetlands, fens, and open woodlands are being maintained. Fall is an excellent time to visit.

Prophetstown is offering a number of hikes and other programs that may be of interest to INPAWS members. Check the website,

<http://www.in.gov/dnr/park-lake/interpretiveservices/programs/schedule/>

or phone 765-567-4919 for more information.

Native Plants Journal

Native Plants Journal is a recent addition to the serials list of Indiana University Press. A publication of the USDA Forest Service, with assistance from the USDA Agricultural Research Service and the Natural Resources Conservation Service, NPJ is an eclectic forum for dispersing practical information about planting and growing North American (Canada, Mexico, and U.S.) native plants for con-

servation, restoration, reforestation, landscaping, highway corridors, etc. It was formerly published by the University of Idaho Press. Some articles that caught my eye in past issues: *Low-tech Devices for Collecting, Processing, and Planting Seeds* (these include badminton racquets and food processors), *Propagation of North American Trilliums*, *Conservation of Species by Protective Markings* (marking systems that can deter illegal harvesting of medicinal plants), and *Palms of Northeastern Mexico*.

The journal is edited by R. Kasten Dumrose and published three times a year. For more information or to subscribe, visit the Press's website at <http://iupjournals.org/npj> or call 812-855-8818 or 1-800-842-6796.



INDIANA NATIVE PLANT
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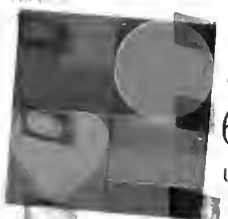
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INDIANA NATIVE PLANT *and Wildflower Society*

Volume 11 Number 4 • Winter 2004

NEWS

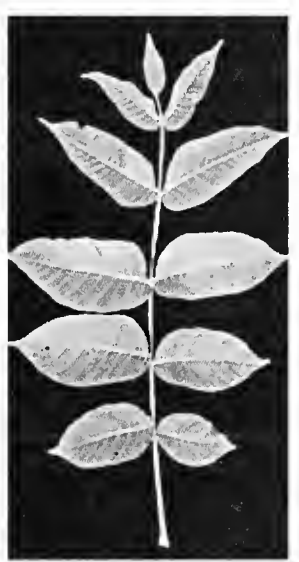
Marion Jackson's Favorite Native Trees: Part IV

Butternut *Juglans cinerea* L.

by Marion Jackson

Butternut trees are notable in that you almost always remember when and where you encountered a lone tree or a small grove. Seldom common or abundant, they enrich your outdoor experiences much like the chance meeting of an old friend from years past.

The ranges of butternut and its sister species, black walnut, overlap greatly; butternut occurs farther north (into southeastern Canada), but not as far south or west as does black walnut. Extending from Maine to Minnesota, and southward to Tennessee, Virginia and North Carolina, butternut occurs only as scattered disjuncts in the Piedmont Sections of the southern states. Such isolated outlier populations at its southern range margin suggest that the species is still advancing northward, as it likely has since Pleistocene deglaciation. It most likely occurs throughout Indiana, except in Prairie counties. We reported its presence or past occurrence in 68 of Indiana's 92 counties in *101 Trees of Indiana*.



Although found on a variety of upland sites from mesic ravines to slope forests, butternut seems to thrive best in deep, fertile, moist, loamy soils bordering streams, or benches and terraces adjacent to infrequently flooded bottoms. Being intolerant of shade, apparently it is uncommon in American beech-sugar maple dominated forests.

Today, it is usually a small to medium-sized tree of 1-2 feet diameter maximum, 50-75 feet tall, and short lived at 50 to 60 years. Charles Deam, however, reported that older pioneers told him of large butternut trees in the original forest. The largest tree I have encountered was a freshly felled tree cut for logs in a forest at Kirchhayn, Wisconsin. The cut stump at 34 inches diameter revealed 120 growth rings. The tree yielded 56 feet of logs, with a crown of almost equal length.

Butternut is easily separated from black walnut by having oblong, thin-husked sticky nuts, and their compound leaves being terminated by a single leaflet, instead of two. The platy, ash-gray ridges of butternut bark and its much paler heart wood color are the source of its specific name, *Juglans cinerea* (from

cinereous, meaning ashy), and also the common name white walnut, used frequently by lumbermen, many foresters, and our pioneer ancestors.

Butternut wood has qualities similar to black walnut except for being much lighter in color and also in weight (25 versus 35 lbs/ft³). Neither species shrinks or warps after thorough drying. The easily worked, very pretty wood was favored in years past as a carving wood (decoys, bowls, etc.), for furniture, cabinets, and for fancy paneling. Early cabinetmakers believed that silver flatware would not tarnish if housed in chests of butternut wood.

Butternut continued on page 2

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Native Americans avidly sought butternuts, which they cracked on stone anvils, then boiled the nutmeats in leather vessels by adding heated stones to the water. This process extracted the abundant oils which congealed on the water surface upon cooling. The "butter" thus obtained was a prized food, trade item, and emollient, an "Oyle good especially for annoynting their heads," in the words of Roger Williams of the Rhode Island Colony.



Butternuts are a wonderful nutmeat. Speaking from experience, once you have tasted butternut fudge or cookies, none other will quite mea-

sure up. The very oily nutmeats (hence "butternuts") confer a taste never to be forgotten, but freshly harvested nuts should be used, as the oils soon become rancid and the nutmeats almost inedible unless kept frozen. A quite good flavor can be imparted to beer by butternut wood chips; likewise a good quality sugar can be made from the tree's sap, although the yield is much less than from sugar maple.

Both black walnut and butternut fruit husks produce an indelible stain that blackens one's hands permanently, until it wears off. A practical use of butternut's ability to stain was a yellow or brown dye obtained from the tree's inner bark

that was used by southern mountaineers for dyeing their homespuns. During the Civil War, many backwoods Confederate troops dressed in homespun "uniforms" of butternut-dyed cloth, whereupon they became known as "Butternuts."

Both Native Americans and Colonists used an extract from butternut bark or roots for its cathartic properties. Not only was it an efficacious laxative, it was also believed to support healthy liver function, and was used for eliminating internal parasites, especially to expel intestinal worms.

Both black walnut and butternut produce juglone, a brownish-red crystalline compound that can be

continued on next page

 **INDIANA NATIVE PLANT and Wildflower Society**
NEWS

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We welcome opposing viewpoints.

www.inpaws.org

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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Linda Oxenrider 2002-2003
Carolyn Q. Bryson 2000-2001
Ruth Ann Ingraham 1998-1999
Carolyn Harstad 1996-1997
Jeffrey Maddox 1994-1995

President's Message

by Rebecca Dolan

Happy New Year Everyone! This has been a good and a busy year for our group. Activities of note in the fourth quarter include the very successful Annual Meeting organized by Nancy Hill and her committee. Also, we all rescued the prairie planting at the State Museum in a big way. Attention brought by members in response to a plan to convert the area to sod brought about a rethinking by the "powers that be" to maintain the planting in place.

Rapid response to this issue was facilitated by our e-mail list. Over 300 members are on this list. It is maintained by Dawn Stelts, Treasurer/Membership Chair. The list is a great, timely, inexpensive way to keep members informed. Dawn reports only two folks have asked to be removed. So if you haven't yet signed on, please do.

I have been meeting with a new umbrella group of conservation organizations that is organizing primarily to be a voice for conservation at the State House. The Indiana Conservation Alliance (INCA) is planning a Conservation Day on February 1 to show the wide range of Hoosiers with an interest in wise use and preservation of natural resources. INPAWS will have a booth and meet with legislators. Volunteers can contact me.

Starting with the 2005 issues, we will have a new Newsletter editor. Long-time member Wendy Ford will take over from Bobbi Diehl. Wendy, being multitasking, will also take on layout and design: we are finally relieving Anne Wilson of her 11-year job! The newsletter is one of the best things INPAWS does and I am so glad to have such able hands to turn it over to.

Dawn and David Bauman have gotten our Plant Rescue Committee functioning again and held a rescue at the State Fair Grounds. Keep your eyes open for other opportunities and let the Baumans know.

I have been contacted by members in Evansville, Richmond, and Jasper County in the north, about starting local chapters. We hope to have these organized in the next few months. Several folks have mentioned to me that they let their INPAWS membership lapse because there were never any activities in their area of the state. If you are feeling this way, please consider joining with others to organize a local chapter. Contact me. The state Board can help.

Finally, mark your calendar for the 2005 Plant Sale and Auction. Karen Hartlep and Julie Beihold have set the date for May 7.

extracted by leaching from both the bark and unripe fruits. Rainwater also leaches this organic naphthoquinone (C₁₀H₆O₃) from both species, causing this selectively toxic material to build up in the soils under trees of this genus, thereby killing or stunting the growth of many herbaceous plants, especially potatoes or tomatoes.

The already widely scattered and sparse populations of butternut have undergone precipitous declines in recent years throughout most of the species' geographic range. A fungal disease, *Sirococcus clavigignenti-juglandacerum*, which causes stem cankers that eventually girdle and kill infected trees, is the major pathogen, although the tree species is also host to other fungal diseases

and insect parasites. Collectively, these problems have contributed to as much as an 80% decline in living butternuts in some states.

Apparently butternut stem canker was first reported in 1967 from southwestern Wisconsin, but it has likely been around much longer, based on examinations of killed trees in the southern part of the species' range. I personally observed canker-killed trees in Versailles State Park in 1966, when I was doing forest inventories there.

The fungus initially infests trees by spores entering through buds, leaf scars, insect wounds, or other bark openings, rapidly killing young branches. The infection is soon spread down-trunk by stemflow

during rains, where girdling cankers then form, thereby killing the tree. Since the pathogen is most likely an introduced species, no known canker-resistant strains of butternut have been found, although healthy trees are sometimes found growing among those diseased and dying.

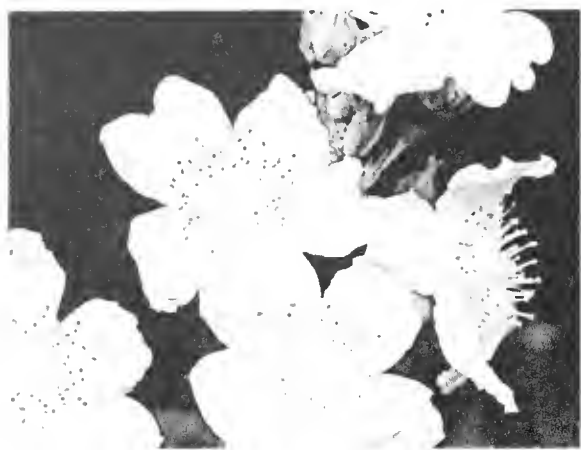
Since butternut is a "Watch List" Species in Indiana, please inform INPAWS of the locations of any healthy adult trees that you encounter in natural forests. By carefully monitoring its status, perhaps we can prevent the butternut from going the way of the American chestnut.

Marion Jackson is author of 101 Trees of Indiana: A Field Guide, just published by Indiana University Press.

A Saga of Autumn Days Well Spent

by Ruth Ann Ingraham

Should I praise or curse INPAWS for introducing me to the concept of exotic invasives? Wouldn't it be pleasant if, as I drive south on I-65, I could appreciate tens of miles of interstate shoulders landscaped with Amur honeysuckle and autumn



Multiflora Rose
(*Rosa multiflora*)

olive, planted in the early '80s as an SOS (Save Our Songbirds) project. I wish that I could appreciate the red berries on vibrant green foliage of the honeysuckle shrubs rapidly filling the lowland spaces along the final approach to my Brown County cabin. I wish I could feel visual delight when driving past a lengthy double row of brilliant red, evenly spaced burning bush shrubs on a curving back road near the Brown/ Bartholomew County line—and the equally dramatic display of the same shrubs that have naturalized across the road in the forest. Unfortunately, I mourn these images. And I can't return to those times—BI—when I was ignorant of the evils of exotic invasives.

Now I do what I can to spread the word about Indiana's exotic invasives, bullies of our plant world. And doing hands-on eradication work is deeply satisfying. On two

successive weekends in October, I joined other volunteers in separate woodlands to help free the trees from the stranglehold of tenacious vines and to help assure the survival or regeneration of native plants in the understory. The first Saturday, members of INPAWS and staff from Indy Parks once again labored in Broad Ripple Park's forest. When we began there under the tutelage of Don Miller in 2000, you could not see through the forest because of the dense growth of Amur honeysuckle. Now most of the shrubs have been pulled or cut and the stumps treated with herbicide. Severed branches were hauled out to be chipped or left to rot on the forest floor. Some have resprouted and a few new, easy-to-pull seedlings have emerged, so I along with other INPAWS members Charles and Marilyn Spurgeon, Betsy Wilson, and Christy Krieg reentered the woods and attacked Amur again. We also cut, tore and yanked winter creeper vines from tree trunks. We had to admit defeat when our tools proved inadequate to cut the vines that were 1½ to 2 inches in diameter and wedged with the bark. Since winter creeper blooms and produces seeds primarily when it can climb objects such as fences, trees and utility poles, it's important to attempt to pull down the vines and treat the stalks. Vast areas of Broad Ripple Park's forest floor have become uniformly dense with winter creeper and vinca. Indy Park's crews have sprayed these species with a solution that can penetrate the waxy surface of their leaves and areas of bare soil prove their success. So much remains, yet tackling this

problem is worth it. Once the visible invasives in an area are eradicated, seedlings will sprout, but



Wintercreeper
(*Euonymus fortunei*)

these are easy to pull and remove, especially from rich forest soil.

The second Saturday in October I left my Broad Ripple home on the north side of Indianapolis at 7:30 AM and drove south toward Nashville—into rain. At 9 AM, undeterred by inclement weather, eight volunteers including INPAWS members Yvonne Olinger and Donna Ormiston showed up at the Brown County Public Library ravine with gloves and loppers. This was the third of five Saturday mornings devoted to clearing the ravine of dead vegetation following Eco Logic's treatment of oriental bitter-sweet, Japanese honeysuckle, privet and dangerous whips of multiflora rose. (Eco Logic is a Bloomington-based firm.) Two hours later, muddy, soaked and chilled, we

called it quits. We admired the piles of dead branches that we had hauled up and out of the ravine to be chipped on a dry day and retreated into the warm library where a volunteer couple from the Nashville community served us homemade minestrone, Italian bread, coffee and coconut cookies.

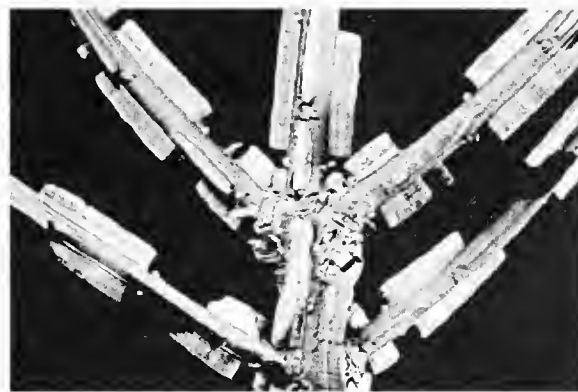
(This Library Ravine Project is partially funded by a generous grant from INPAWS and has been described in previous newsletters. The improvement is remarkable as most of the tangle of invasives that once choked the area is gone, the result of determined volunteers and professionals. We will soon introduce native grasses, sedges, forbs and shrubs. A portion of the ravine will be guarded from deer by relatively unobtrusive fencing.)



Japanese Honeysuckle
(*Lonicera japonica*)

The following morning was warm and sunny when I awoke at my Brown County cabin. I took a leisurely stroll on the narrow gravel road that passes my cabin and discovered, to my dismay, that the *Miscanthus sinensis* that escaped from our hedge planted a dozen

years ago was in full bloom and its seeds ready to be scattered by the winds. This came as a surprise because, due to the large number and size of these escaped orna-



Burning Bush
(*Euonymus alatus*)

mental grasses, I had hired a company to cut and treat them with herbicides. Going to recovery mode, I fetched a large garbage bag into which to stuff the frothy plumes. Brambles grabbed my clothing as I walked the power line easement where most of the wayward plants grow. A few plumes shattered, but my timing was fortunate because most of the seeds held on. I grumbled as I went along. It was fortunate for the guys who had not done a thorough job that it was a Sunday and not a workday. I had time to cool down. (To the credit of the firm I had hired, they will rectify the situation.)

With that unanticipated job completed, I went to the edge of my woods to pluck a few oak leaves to identify. But as I reached the oak tree branches, I spotted small cherry-red leaves growing on tiny branches around the stumps of three burning bushes planted by former owners. Then I saw their

seedlings—hundreds of them where I had pulled hundreds in previous years. As the result of Saturday's rain, the soil was soft and I went to work to remove one more invasive species. I scanned the forest floor for more burning bush shrubs and came across a Japanese honeysuckle vine and three Amur honeysuckle seedlings. Finally I was rewarded for my sleuthing when I discovered a crane fly orchid flower stalk lined with seedpods. Emerging from its base was a fresh green leaf with purple spots, a leaf that will remain through the winter to gather strength for next summer's flowers.

The year 1993, when INPAWS was founded, marks the end of my age of innocence (relative to invasive plants). I do wonder how I might have used my time during this past fall's weekends if I had not become one among the legions of volunteers and professionals who work to protect our native habitats.

Ruth Ann Ingraham is a co-founder of INPAWS and author of Swimming with Frogs: Life in the Brown County Hills, to be published in 2005 by Indiana University Press.

www.invasivespecies.gov

A gateway to Federal and State invasive species activities and programs

www.invasive.org

The Source for Information and Images of Invasive & Exotic Species—A joint project of The University of Georgia's Bugwood Network, USDA Forest Service and USDA APHIS PPQ.

www.forestpests.org

is part of the Bugwood Network.

Tree-of-Heaven (*Ailanthus altissima*)

by Ellen Jacquart

Natural History:

Tree-of-heaven is a deciduous tree native to China. The species was apparently introduced into America by two different routes. The first route was through Pierre d'Incarville, who mistook it for the lacquer tree in China and sent seeds to England around 1751. It was then introduced to America by a Philadelphia gardener in 1784. Because of its rapid growth and ability to grow in unfavorable conditions with little care, it became common in eastern nurseries by 1840. The second route

was through Chinese miners. During the days of the California gold rush, many Chinese miners brought ailanthus seeds with them as they settled in California, probably because of its medicinal and cultural importance to them. Tree-of-heaven is tremendously tolerant of drought, poor soils, and air pollution, surviving in urban landscapes where no other tree can.

Identification:

Tree-of-heaven has long, pinnately compound leaves which look somewhat like black walnut leaves. The easiest way to tell them apart? Crush some leaves—the telltale peanut butter smell of tree-of-heaven is very distinctive. The tree is dioecious, with male and female flowers on separate trees. In June, female trees are quite obvious as yellowish-red fruits dot the green tree canopy. The fruits turn to a beige color by early winter and remain on the female trees until

early spring. The stout twigs of tree-of-heaven have an olive-tan color in winter, with huge leaf scars and very small buds, with no true terminal bud. The bark of tree-of-



heaven remains fairly smooth as the twigs become branches, taking on a subtle checkered appearance.

Reproduction:

One mature tree-of-heaven can produce up to 350,000 seeds per year. These seeds are easily airborne and can be transported by water and birds as well. Germination of seeds is quite high. Mature trees also reproduce extensively by sending up root suckers and sprouts from cut stumps. Sapling growth can reach 3-4 feet a year, faster than any of our native tree species.

Range and habitat in Indiana:

Tree-of-heaven has a long history in Indiana. John Merle Coulter, an early Indiana botanist, reported it had already escaped cultivation in five counties in central and southern Indiana by 1899. In Charles Deam's 1940 *Flora of Indiana* he reported established populations in 13 counties scattered around the state.

According to Bill and Edith Overlease in *100 Years of Change in the Distribution of Common Indiana Weeds* (2002, unpublished report), it is now established in all counties in Indiana. It does well in a wide range of soil conditions, but appears to do particularly well in alkaline-soil areas like the bluffs along the Ohio River and sand dune areas near Lake Michigan.

Impacts:

It does best and establishes first where disturbance has increased the available light in a forest area—along roadsides, trails, or in canopy

gaps—but once established it will move into undisturbed forest. Generally, it will not dominate in undisturbed forest but will simply hold on until windthrow, icestorms, timber harvest, or other disturbance introduces more light. Then it quickly fills all available gaps, elbowing out any native trees in the area. Tree plantations are particularly vulnerable to it because it outgrows all of the planted trees and forms a pure tree-of-heaven forest.

Tree-of-heaven roots give off a toxin that acts as an herbicide that can kill or inhibit the growth of other plants, which may also explain its success at outcompeting native species.

Control:

Young seedlings may be successfully hand-pulled if the entire root system is removed. However, if small portions of the root system

continued on next page

Liliaceae = Lily Family

by Dr. Rebecca Dolan

335 genera, 4800 species of world-wide distribution

In Indiana: 26 genera and 49 species



Yellow Trout Lily
(*Erythronium americanum*)

Characteristics

Mostly herbaceous perennials growing from rhizomes, corms, or bulbs

Leaves alternate, simple, linear, with parallel venation, leaves sometimes few and basal, appearing before or after the flowers

Flowers usually regular (radially symmetrical). Calyx usually looks like petals. Flower parts in multiples of 3. The term “tepals” is sometimes used for the similar looking petals and sepals. Fruit a capsule or a fleshy berry

Economic importance

Very important in ornamental horticulture: lilies, crocus, hyacinths, tulips, daffodils, lily of the valley

Food crops: asparagus, garlic, onions, leeks, chives

Plant Products

Saffron, aloe, colchicine

Common Indiana spring-blooming native plants in the Lily Family

Large-flowered bellwort
Uvularia grandiflora

Smooth Solomon’s Seal
Polygonatum biflorum

Feathery Solomon’s Seal
Maianthemum racemosum

Prairie trillium
Trillium recurvatum

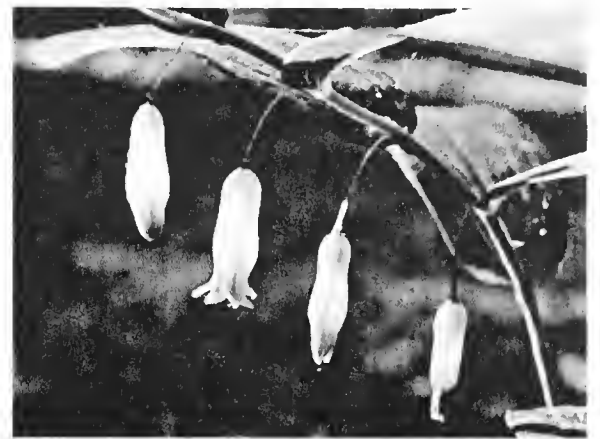
Sessile trillium
Trillium sessile

Large-flowered trillium
Trillium grandiflorum

Mottle-leaved white trout lily
Erythronium albidum

Yellow trout lily
Erythronium americanum

Wild hyacinth
Camassia scilloides



Smooth Solomon’s Seal
(*Polygonatum biflorum*)

Becky Dolan is president of INPAWS, and the Director of Friesner Herbarium at Butler University.

Photos by David G Smith
www.delawarewildflowers.org

are left, regeneration is likely. Use this method for seedlings under three feet tall when the soil is soft (after rain). For larger trees, cutting alone is not effective since this merely stimulates aggressive root suckering and stump sprouting. It is of utmost importance to kill the entire root system. Systemic herbicides such as Roundup® or Glypro® may be effective as a

foliar spray on seedlings. For larger trees, cut stump treatment or basal bark application using a systemic herbicide such as Garlon 4® is best especially if treated in late winter or late summer. Always follow label directions when using herbicides.

Additional information:

<http://tncweeds.ucdavis.edu/esadocs/documnts/ailaalt.html>

Ellen Jacquart is Director of Stewardship for the Indiana Chapter of The Nature Conservancy, coordinating management of TNC preserves in Indiana, with a particular focus on invasive plant control. As chair of the INPAWS Invasives Committee she led the effort to develop the Invasive Plants of Indiana brochure.

Serendipitous Salad, Edible Carpet

by Barbara Plampin

In 1980, New York Botanical Garden's Joe Beitel noticed an unfamiliar garnish on his plate at a Michigan lakeside restaurant. An after-dinner walk revealed the



Golden Saxifrage
(*Chrysosplenium americanum*)

source: a yellow monkey flower. Two years later, University of Michigan student Peggy Bliss identified the plant as endangered Michigan monkey flower (*Mimulus guttatus michiganensis*), the site becoming the planet's tenth.

You too may find a rare plant on your plate. The Internet reveals that Indiana-threatened water carpet, a.k.a. water mat or (American) golden saxifrage (*Chrysosplenium americanum*), makes a "good savory," a plant adding piquancy to food. Furthermore, garden centers may be selling it as a ground cover. Ethical questions arise: store escapes could puzzle scientists studying plant ranges or making floral indexes of natural land and cause genetic problems.

How to recognize water carpet? First, by location. Indiana Dunes plants restrict themselves to cool, shaded, wet-to-damp spots 600 feet above sea level. During marsh

marigold time, view water carpet from a Dunes State Park boardwalk. You'll see a dense mat of prostrate, creeping stems branching into short, erect tips, each bearing one flower. The tiny, roundish, unlobed leaves are opposite lower down, alternate above. "Golden" in the folkname golden saxifrage is a misnomer: the minuscule, petal-lacking flowers are green with, perhaps, a

yellow cast. Your magnifying glass will reveal, nestled in the four-sepaled calyx, a tiny tire permanently inflated despite being stuck with eight red-headed nails, the anthers.

An Arctic cousin, Northern water carpet (*C. tetrandrum*), differs in having a cup-shaped calyx or "splash cup" where the ripe seeds await the force of raindrops for dispersal.

Should you spot water carpet in your salad or at your garden center, ask the source and report any thefts from protected land. Your conscience is your guide about planting, especially if you live near a preserve. Whatever you do, be sure to keep records for science.

For further reading:

Beadle and Crispin. *Field Notes*, Michigan Natural Resources. 1990, 42-43.

Britton and Brown. *An Illustrated Flora of the Northern United States and Canada. II*. Dover, 1970 (1913).

Pielou. *A Naturalist's Guide to the Arctic*. Chicago, 1994.

Swink and Wilhelm. *Plants of the Chicago Region. 4th ed.* Indiana Academy of Science, 1994.

Yatskievych. *Field Guide to Indiana Wildflowers*. Indiana, 2000.



Monkey Flower
(*Mimulus guttatus michiganensis*)

Barbara Plampin is a member of INPAWS, a trustee of the Shirley Heinze Environmental Fund, and a member of Save the Dunes Council. She has a Ph.D. in English literature from the University of Michigan. Botany has been a life-long avocation.

The *Lewisia rediviva* and *Clarkia pulchella* Expedition*

by Diane Stippler

In June of 1803 President Thomas Jefferson, an avid horticultural enthusiast and gardener, authorized an expedition under the command of Meriwether Lewis and William



Bitter-root
(*Lewisia rediviva*)

Clark to open up the American West for commerce. A significant component of the exploration was to include the collecting of numerous plant specimens of potential medicinal or economic value.

Commander Meriwether Lewis, a naturalist whose mother was an herbalist, was the primary gatherer of plants along the trail. Other men in The Corps of Discovery, as it would come to be called, assisted in this process. There is evidence that Sacagawea, the American Indian guide who accompanied the men, helped by providing edible plants and plant medicine for the men on the journey. Perhaps Sacagawea's knowledge as an American Indian was partly responsible for the fact that only one man died (of appendicitis) during the two-year expedition that entailed sometimes severe conditions.

Most of us are aware that the United States has been celebrating the Bicentennial of this event since

last year with various exhibitions throughout the country. A traveling exhibit currently at the Academy of Natural Sciences in Philadelphia (through March 20, 2005), which opened in St. Louis this past summer, highlights some of Lewis's work in the field of botany. Philadelphia was a major center for the development of botany as a science in the United States. The Academy is also the location of the Lewis and Clark Herbarium. The exhibit will continue through 2006 in various other U.S. cities including Richmond, Denver, and Washington, D.C.

To locate some fascinating botanical information on the Lewis and Clark Expedition, the exhibit, and the Herbarium, go to www.acnatsci.org and click on the pictures of Lewis and Clark on the lower left hand corner of the site. From the page that appears, click on Lewis and Clark Plant Specimens on the left column. There are other links on that page, also, including one to an excellent article by the Botanical Society of America on the trove of plants found on the expedition. You can even order a copy of the newly released CD of the specimens collected on the expedition.

Another website regarding the botanical/horticultural elements of the Lewis and Clark expedition can be found at www.lewis-clark.org (Discovering Lewis and Clark). This site has two good links of interest to INPAWS members. The first is found by clicking on The Expedition and scrolling down to Views from K'useyneiskit; then scroll down to Lewis as Botanist for a wonderful series of audio/video

(with text) presentations by James L. Reveal, Professor Emeritus of Botany at the University of Maryland. After enjoying this link, you can proceed to the Natural History link on the left that will enable you to scroll down to the Plants designation for beautiful pictures and detailed descriptions of some of the plants collected by Meriwether Lewis and friends. Have fun!



Elkhorns
(*Clarkia pulchella*)

Diane Stippler is a member of INPAWS and an occasional contributor to this newsletter

*These were the only two plants "discovered" on the trip that were given the names of the Corps Co-Commanders. One other plant was named, but for a character of the plant itself.

Lewisia photo by Iza Goroff
North American Rock Garden Society
http://www.nargs.org/potm/potm_2000.html

Clarkia photo by Matt Goff
<http://www.nawwal.org/~mrgoff/photojournal/2002/sum/06-11elkhorns.html>

Membership Matters

by Dawn Stelts

Greetings, INPAWS members. On New Year's Eve I mailed a renewal notice to all with outstanding dues for 2005. I hope you liked the personalized layout and return envelope, a suggestion from Mark Outcalt. Without Mark, Membership would not have accomplished so much in 2004.

After taking office, I was determined to resurrect the old Trillium Membership Brochure, but I couldn't get the old computer files to cooperate. In early spring, Mark created a glossy Membership Brochure for INPAWS with photos from Rolland Kontak's collection, and came through with flying colors.

In early summer, Mark took his new publishing skills and also put together our Membership Directory. Now that we have a Directory format, and we won't be occupied creating a Membership Brochure, we should have the Directory out sooner for 2005. You can help by getting your renewal notice in the mail lickety-split.

A new field will be added to the 2005 Membership Directory for Members contributing above the basic membership level. These Members can submit their website address which will be published in boldface next to their name in the Directory.

I would like to thank the INPAWS Board for all their support in my new role as Treasurer and Membership Chair. They approved expenses for a new database that

allows me to update your membership information with ease and keep you current with email. They also supported the bylaws change, unanimously approved at the Annual Meeting, which designates \$5 from each membership to a Chapter. You may have noticed that chapter membership is now automatic. This change has been automated in the new database and simplifies my job. Also, the boundaries of the existing Chapters were redrawn so that all Indiana counties are in a Chapter and I will be forwarding to the Chapter Treasurers \$5 for each member in their territory. This moves funds closer to you and facilitates programs in your neck of the woods. It also makes funds more readily available for those of you interested in carving out some counties to create a new Chapter. Member interest in new Chapters has come from Evansville, Richmond, and Lake County.

You may not be aware of our Affiliate Membership option. This category originated through the newsletter exchange we participate in with other Native Plant Societies. Dan Anderson expanded Affiliate Membership by offering local Indiana libraries the opportunity to join as Affiliates and receive our four quarterly newsletters. If you know of a local library, university library, school library, 4-H extension office, or classroom that would be interested in receiving our newsletter, please have them forward their contact information to me. After all, one of our missions is to educate.

In the spirit of our educational mission, I would like to point out that student membership remains \$10. Currently, we have 454 members and 15 of them are students, 5 hailing from IU, 6 from the Indianapolis area, 2 from Ball State, one from Ft. Wayne, and one from Kentucky. I am always pleased when we draw the next generation into our group. Let's get these numbers up next year. If you need an Affiliate Membership at your university so you can post our newsletter, let me know! If you need Membership Brochures, let me know! If your students need information on our Grant process, just contact Joan Mohr Samuels.

Our many successes this past year were possible through the hard work of our Committee Chairs and Chapter Presidents. I am sure you have kept pace of events through the newsletter and I encourage you to get your renewal back to me so that you can read about their continuing success in 2005 beginning with our Spring Newsletter.

Best Regards for the New Year.

Dawn Stelts
Membership/Treasurer
16508 Oak Road
Westfield, IN 46074-9436
317-867-2906
dawn@stelts.com



Indiana Native Plant and Wildflower Society (INPAWS)

Small Grants Program Guidelines for 2005

Note: March 1, 2005 is the deadline for grant proposals to be submitted in 2005. (This will be the only date for grant proposal submissions in 2005.)

INPAWS has a small grants program to support projects that are in line with the mission of the society. Toward that end, the Board voted in 1998 to allocate \$10,000 from the general fund to an endowment account. Interest from this account

will be available for grants. The Awards Committee anticipates funding two grants of up to \$500 each in 2005.

These small grants can be used in conjunction with other sources of funding for projects that support the mission of INPAWS.

The mission of INPAWS is to promote the appreciation, preservation, conservation, utilization and scien-

tific study of the flora native to Indiana and to educate the public about the values, beauty, diversity and environmental importance of indigenous vegetation.

Applications are requested from groups or individuals and **must be e-mailed (preferred) or post-marked by March 1, 2005**. They will be reviewed by the Small Grants & Awards Committee.

Application Procedures for the INPAWS Small Grants Program

Please submit the following:

1. Cover sheet including

- Name of project
- Amount requested
- Location
- Applicant/contact person information: name, address, telephone
- New or existing project
- Category that best describes the project: research, training, education, conservation and habitat, demonstration garden, etc.

2. Text of proposal

(not to exceed 2 pages)

- a) A summary of the project, not to exceed fifty words
- b) A clear, concise description of the project which includes the following:
 - How does the project further the INPAWS mission?
 - Why is the project needed?
 - Specific objectives to be achieved
 - Specific information on how INPAWS grant funds would be

used including a detailed species list of all plants and seeds to be used

- Who benefits from the project? How many? How do they benefit?
- Names of organizations involved, if any, with a brief description of each, including number of members
- Financial resources committed to the project from other sources, if any
- Anticipated starting and completion date of the project

3. Budget sheet showing:

- a) Labor, material and program costs
- b) Sources and amounts of funds already raised, if any
- c) Total cost of project

Successful awardees must prepare a poster or other presentation to share with the membership at the Annual Conference subsequent to completion of the project.

Email one copy (preferred) or mail four copies, of the grant proposal, post-marked by March 1, 2005, to:

Joan Mohr Samuels
(765)567-7023

mohrsamuels@insightbb.com

or

5828 Prophets Rock Road
West Lafayette, IN 47906

Larger Grant Awards

At the discretion of the Board and membership, larger awards may be made from time to time from the assets of the operating budget. Requests for funds for special projects may be made at any time to the Executive Committee. All requests must be made in writing with a clear statement of how the award would further the mission of INPAWS and benefit our membership.

M U L T I F L O R A E

Central Chapter News

Betsy Wilson, President

Congratulations to our new 2005 officers who were elected at our October meeting!!! Ron Jackson, President; Betty Randall, Vice President/Program Chair; Mark Outcalt, Secretary/Treasurer.

A heartfelt thanks to Virginia Harmon, Carol Mavity, Mark Outcalt and Dawn Stelts who so ably served our chapter for the last two years!!

Mark your calendar for upcoming events and programs sponsored by the Central Chapter.

Wednesday, February. 9

Steve Mayer,

Good Bugs/Bad Bugs in our woods and gardens.

Sunday, October 16,

Jeannene Montgomery,

Soil Food Web

Programs on using native plants in streambank restorations in Central Indiana, a summer garden tour, and a possible trip to Paws Inc. are being planned. Please contact Betty Randall with ideas for future topics for meetings, speakers you would like to hear and places you would like to go on field trips. Central Chapter now covers an expanded area so if you know of meeting or field trip sites in your neighborhood we will try to arrange meetings near you. Let us know your preference for days of the week and times for future meetings.

I have thoroughly enjoyed being your president and look forward to continuing to see many of you at future meetings.

West Central Chapter Upcoming Programs

Presentation:

Indiana's Forests: a State Forestry Agency Perspective

By:

Burney Fischer,
Indiana State Forester

Time:

Monday, January 24, 7 PM

Place:

West Lafayette Public Library's
Elm Room

Presentation:

Phytoremediation and the Indiana Harbor Canal

By:

Katy Euliss, Ph.D. student in
Agronomy at Purdue University

Time:

Monday, February 28 at 7 PM

Place:

West Lafayette Public Library's
Elm Room

Katy will give us an overview of phytoremediation (using plants to remove metals and organics from the environment) and then tell us about a specific case study on the Indiana Harbor Canal.

Third Annual Prairie Creek Barrens Restoration Day Saturday, April 2, 2005

INPAWS members and friends are again invited to help restore one of southwest Indiana's rarest vegetation types—sand barrens. A remnant of the type exists at the state-owned Prairie Creek Barrens Nature Preserve in northern Daviess County. Portions of the preserve are in need of restoration, and thanks to

an IPL Golden Eagle Grant, we will have over 9000 plugs of various prairie grasses and forbs to plant in the effort. Please contact Mike Homoya before March 15 by e-mail mhomoya@dnr.in.gov

(or call 317.232.0208) for additional details, including meeting time and location.

A Note from Becky Dolan

Don Kurz, long involved in natural areas conservation and natural history study in the Midwest, has just published a new book, *Illinois Wildflowers*. This is a beautiful book and a great companion to Kay Yatkievych's *Field Guide to Indiana Wildflowers*. It provides photos and descriptions of over 400 plants. As you can easily imagine, plants in Illinois have a lot in common with those in Indiana. The plants don't seem to recognize our political boundaries. Illinois does have more prairie, and plants with more western distribution do grow there that don't make it into Indiana, but Hoosiers will find this book very useful. There are no keys. Plants are sorted by flower color à la my much-loved Peterson's guide. The photographs are large and spectacular. Descriptions, flowering time, habitat and range, and an interesting remarks section accompany each photo. This book is a great bargain at \$22.95.

Don Kurz. *Illinois Wildflowers*. 2004. Cloudland.net Publishing. ISBN: 1-882906-53-5

Toll-free order number:
1-800-838-4453

Garlic Mustard

by Donald Musselman

*All winter long you've seen them there
Thru ice and snow, their green leaves stare
Tempting you to pull too early
For if you try in February,
you'll get half a root and leaves so curly*

*For frozen ground will not let go
The lower half from which will grow
a purple-stemmed rosette which then
will next year be a plant again*

*So wait till March—Spring's invitation
To start out with determination
And when the ground's as soft as custard
THEN you pull the Garlic Mustard.*



Early last year, Don wrote:

“Spring has sprung and I've already started battling my nemesis, Garlic Mustard. As I tried to pull some plants in an area where there was still frost in the ground, the roots started breaking. To soothe my frustration, I wrote this poem.”

Happy Pulling, DGM

Member Feedback

Editor's note: the following was received by Becky Dolan and Dawn Stelts in response to the e-mail notice that was sent out to members publicizing the Alaska Coalition's meeting on January 15:

“I am a conservationist and a restorer of wildlife habitat here in Fulton County Indiana, but I am also a follower of reason, logic and common sense. If we as a nation can be independent of foreign oil, I fully support oil exploration in the Arctic.

“These groups that spend their time and energy opposing ANWR explo-

ration waste time, resources and credibility. INPAWS should not be advertising this position unless they give out a link to the opposing view of why ANWR should be opened to oil exploration. There are many that can be found with a Google search, but one such link is:

<http://www.anwr.org/topten.htm>

“I ask that you make this information available to INPAWS members who received the e-mail below. I thank you for your consideration in this matter.”

Bob Minarik, Rochester Indiana

Orchids to . . . INDOT

As a partner in the *Invasive Plant Species Assessment Working Group* (IPSAWG), INDOT has been part of discussions on the impacts of planting invasive species in Indiana for the last three years. Rick Phillabaum, INDOT's representative in the working group, has reported that due to the assessment of crown vetch as an invasive species in Indiana, INDOT will no longer plant crown vetch along roadsides. We applaud this decision!

Ellen Jacquart



Editor's Corner

by Bobbi Diehl

With this Winter 04 issue, Anne Wilson and I retire from the INPAWS newsletter. I lasted a mere year—four issues. Anne's tour of duty was much lengthier: eleven years' worth, 44 issues in all! Thanks on behalf of all of us, Anne, for hanging in there all this time and for making the newsletter look so good! And a hearty thanks to INPAWS member Wendy Ford, who takes over from both of us effective with the Spring 05 issue.

The November/December issue of *The American Gardener*, the magazine of the American Horticultural Society, contains an article entitled *State Flowers, State Pride*, featuring INPAWS members Jo Ellen Meyers Sharp and Lynn

Jenkins, who have taken up the fight to get a native plant named Indiana's state flower. Both Sharp and Jenkins are pictured, as is the Fire Pink—the plant they would like to see get the nod. It's a good article because it gives some history and context—how many other states have a native state flower, how many have a non-native, and how many have both. *The American Gardener* is sent to all members of the AHS. I've belonged for years and highly recommend it.

Speaking of gardening magazines, as I leafed through my new issue of *Fine Gardening* (February 2005) I came across the Book Reviews pages, where they list the ten best titles of the year. One of them is

Carolyn Harstad's *Got Shade? A "Take It Easy" Approach for Today's Gardener*. The author, Linda Hillegass, calls it "the best new book on shade since George Schenk's classic *The Complete Shade Gardener*." This is truly the highest praise!

www.inpaws.org

Visit our website for news and information about INPAWS and native plant issues, as well as links to related organizations concerned with preserving native plants and their habitats.

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and Wildflower Society

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