# Native Plant and Wildflower Society

NEWS

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Winter 1997

# Walking in a Winter Garden

Partridgeberry (Mitchella repens)

ature rests in near-nudity, cloaked under the heavy gray of gloomy clouds. From December until February, the Indiana landscape becomes almost monochrome. Why would I even think of a garden during winter, much less want to be outside, during months almost devoid of sunlight and warmth?

Lack of light affects my moods. I don't have sunlight deficiency disorder, but the lack of color makes it hard to stay upbeat and cheerful. I'm an active outdoors person, and remaining

causes cabin fever to creep up on me.

Except when the weather's so bad I couldn't, with a clear conscience, force

a polar bear outside, I usually take a

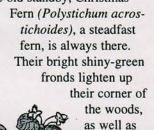
daily garden walk.

Sometimes I see my garden; other times it's simply a place to be. As I sit on a big rock beneath an old cedar at the garden's center, I clear my mind and feel my connection with the earth. The old thoughts are banished and I feel a strengthening and new serenity and sense of purpose. Entering the garden with observing eyes during the dead of winter is a quiet joy, lifting the gloom of overcast skies. My garden is arranged so that I can find a fresh clean green, color in foliage, bark textures,

and colorful berries, along with blooms, twelve months of the year. There are always little surprises to greet me as I walk the paths in my woodland garden.

Some of my favorite finds are the ferns.

The old standby, Christmas



my spirits.
They'll get
beaten up by
February, but,
come spring, will soon
be renewed. The Hairy
Lipfern (Cheilanthes
lanosa) is great for a



by Gene Bush

get your specimens from a friend's garden or a nursery.

Orchids have fascinating foliage in winter. Showiest is the Rattlesnake Plantain (Goodyera pubescens). Each downy, bright-green leaf has a white stripe down the midrib, and is overlaid with a distinctive green and white netted pattern. The two-inch leaves form a basal rosette. The Cranefly Orchid (Tipularia discolor) sends up a single spotted, warty-appearing leaf which is blackish-green on top and rich purple underneath. The leaves appear in autumn and are long gone before the blooms appear in August. Putty-root (Aplectrum hyemale) always makes me think of pleated and pin-striped seer-

Walking . . . continued on page 2

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sucker suits. The single leaf emerges in fall. It is larger than that of the Cranefly (six to seven inches) but lacks the purple underside and has lighter veins.

There are three great native ground covers which belong beneath shrubs and small trees in my garden. All are attractive regardless of season, coordinate well with other plants, and coexist peacefully with their neigh-

bors. Partridge-berry (Mitchella repens) is a tiny ground-hugging creeper which forms a

bright waxy-green mat. Its fuzzy white paired flowers, which appear in June or July, are followed by red berries which last through fall into early winter. It can be used for a background and to cover the bare area left when your Jack-in-the-pulpit and trilliums go dormant in summer. Winter-green (Gaultheria procumbens) is a miniature shrub with underground connections. (Nothing sinister-just shallow runners which send up four-inch shrubs at intervals, until

you have an open ground cover). The stiff little stems bear lustrous matte-green leaves with prominently lighter veins. The leathery leaves take on a bronze-red tone

in winter, forming a background for the red berries. Plant where you can pick a leaf

or berry to chew on as you pass. Galax (Galax aphylla) isn't often found in local woods or nurseries, as collectors

nearly caused its extinction. Better hotels, until

Galax

(Galax aphylla)

recently, used the leaves in holiday greenery and to decorate plates. Once seen, it is easy to under-

stand why it was so prized. The large heart-shaped leaves, with saw-toothed edges, have a glossy sheen over their bright green, and turn a bright coppery color when cold weather comes. Trailing Arbutus (*Epigaea repens*) is a

Trailing Arbutus (*Epigaea repens*) is a three-inch tall creeping shrub with wide three-inch leaves, which lie on the

ground. The foliage is heavily veined and textured—a light bright green with a glossy sheen. The quiet beauty of this plant, along with the heavenly scent of its flowers, has almost been its undoing, because many people want a mat of it in their gardens, and take it home, only to have it die slowly, because they don't understand its needs.

When cabin fever strikes you this winter, think about having an all-

year garden. In a well-planned garden, there is no "dead of winter." Your place of peace, where you can connect to nature without using the car, will always be there for you.

Travel is not necessarily a matter of physical distance.

Gene Bush, INPAWS member, owns and operates Munchkin Nursery, which specializes in woodland wildflowers. For his January 98 catalog, send \$3 to 323 Woodside Dr. NW, Depauw, IN 47115-9039. For info, e-mail genebush@munchkinnursery.com.

Wintergreen (Gaultheria procumbens)

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

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

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#### Submission of articles

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

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• Photos, page 10, Jonathan Wilson

# President's Message

olden leaves fell like rain a few days ago and my Arborvitae looked like a giant Christmas tree decorated with gold. Naked sugar maple trees now stand as dark skeletons against the gray wintry sky. As I write, the snow is falling, turning everything into a glistening wonderland and depositing a frosting of white over the Arborvitae's golden decorations. Cars covered with heavy wet snow slog the streets looking like rotund snowmen. The snow hits the bottom of the cars and the sound reminds me of Minnesota where I grew up. It is early for this much snow in Indiana.

I am thankful that the snow didn't arrive last weekend when we held our annual meeting at DowElanco. Last year we had several cancellations because of an unexpected snowfall. Each year we ask if we should change our date and each year the questionnaires come back, "negative." People enjoy the stimulating lectures and displays at a time when nature is winding down. Gardens have been put to bed for the winter, and although the leaves are still tumbling down, the outside temperatures entice us to stay indoors.

Our 1997 annual meeting speakers brought a great diversity of information. Floyd Swink, a man of incredible knowledge and wit, delighted us with a lively presentation of beautiful slides of the flora of the Indiana Dunes.

"Set your house gently into the landscape" advised Andy Wasowski as he discussed building within nature's envelope. We have all witnessed the ravages of the giant bulldozers and wept for the land after builders and developers have finished their work. Wasowski showed methods to protect the precious landscape during construction.

Panel moderator Bill McKnight, Indiana Academy of Science, orchestrated a lively discourse with Floyd Swink, Morton Arboretum; Fran Harty, Illinois Department of Natural Resources; Mike Dana, Purdue University; and the audience. The time was up before we were ready to stop. In order to protect our fragile environment, we all need to be aware of the dangers of invasive exotics.

This year's annual meeting differed from the past three in that we actually conducted some business! INPAWS mission statement includes the words "preservation, conservation and scientific study" and the assemblage voted to support two projects embodying these concepts—a research project for the eradication of garlic mustard and our financial support to CILTI in the preservation of Burnett Woods.

Another directive in our mission statement, "to educate," was addressed by Education Chair Sue Nord. INPAWS has agreed to become a partner with the U.S. Fish and Wildlife Service, the Indianapolis Zoo, Audubon, Oakhurst Gardens and Purdue University in planning and preparing a prairie curriculum for grade school children. It is exciting to be asked to participate in this important educational endeavor.

In keeping with "preservation, conservation, utilization" from our mission statement, Sue Dillon explained how we can define "plant rescue" in several ways. INPAWS has helped to rescue wildflower areas through diligent removal of invasive exotics as well as by rescuing and relocating wildflowers from sites destined for degradation.

Our awards chair, Rebecca Dolan, presented special awards to Spence
Nursery and to Don Miller, Indy Parks, for promoting the use of native plants.
Don, with help from INPAWS volunteers, planted over 27,000 native plants in Indianapolis parks last year. We extend our special thanks to Doug Spence and Kevin Tungesvick of Spence Nursery for all their contributions to our auctions and plant sales and for their personal support of our organization.

Rolland Kontak received the Outstanding Contribution Award for 1997 in recognition of his leadership and generous contributions to the annual auction and plant sale and his vision in developing the native plant seed project. Thanks, Rolland—our auctioneer par excellence!

Awards also went to Dan and Sophia Anderson in recognition of their leadership developing the Wildflower Project for 4–H in Marion County and the state of Indiana. This project has blossomed since they assumed responsibility for it.

Anne and Jonathan Wilson have recently designed an incredible web site for INPAWS, so note the internet address when it appears. This will put INPAWS on the map nationally!

It is amazing how our organization has grown and increased in stature since March 1993 when Founders Bill Brink, Ruth Ann and Joe Ingraham, and Carolyn Harstad began the organizational process to form INPAWS. The first meeting, April 1993, took place at the Marion County Extension Service in Indianapolis, and those who joined the four founders at that meeting were honored with "Founding Member" certificates. These included Lee Casebere, Michael Dana, Rebecca Dolan, Peter Harstad, Becky Lomax, Jeffrey Maddox, Bill McKnight, Sue Nord, Chris Turner, Jean Vietor, Anne Wilson and Kay Yatskievych. These people laid the foundations for this organization and they built well.

Certificates of appreciation were given to each of the board members. I extend my personal thanks to each of them. It has been a joy to work with them during the past two years.

I have enjoyed being your president. I congratulate the newly elected officers and thank each member of INPAWS for your willingness and desire to uphold the mission of our organization: "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."

By promoting this mission, we will assure the survival of our native plants and of our environment for future generations of Hoosiers.

## Report of Fourth Annual Meeting

he fourth annual meeting of the Indiana Native Plant and Wildflower Society was held November 8th, 1997, at DowElanco on Zionsville Road in northwest Marion County. About 150 INPAWS members and guests were present.

The foyer was graced with lovely paintings by Jean Vietor, Cheryl LeBlanc, Dorothy Chase, Pam Newell and Dr. James Hamaker. Stunning photographs by Mavis DeVoe, Darryl Jones, Ruth Ann Ingraham and Martha Allis were also on display.

Exhibitors included Indiana Division of Nature Preserves, Indiana Department of Transportation, Indianapolis Parks Dept., Central Indiana Land Trust, INPAWS 4-H Program, Spence Nursery, and United Plant Savers.

A variety of books was on sale by the Indiana Academy of Science and by Janice Glimn-Lacy. Two new issues or re-issues, Plants of the Chicago Region and The Natural History of Indiana were attractively priced, and sales appeared brisk. Many attendees took advantage of the presence of authors or contributors to the book to have their copies signed. Rolland Kontak had a wide variety of seed packets for sale at \$1.00 each, with the funds realized going to INPAWS. 400 were sold! (An insert in this newsletter will offer a complete listing of those available, ordering information, and planting tips). INPAWS sweatshirts and bottle holders were also on sale.

President Carolyn Harstad opened the program at 12:45 with a welcome to all members and visitors, then introduced Bill McKnight, who reported on the state flower project. As many of you are aware, our present state flower is the Peony, a Chinese import. About two years ago, Indiana schoolchildren were given the task of electing a candidate for the new state flower from pictures of twenty native flowers. The Fire Pink (Silene virginica) was chosen. Since that time, many efforts have been made to interest our legislators in the

project. Due to controversy and ridicule concerning the naming of a state insect, no action was taken by the legislature in 1997. Bill is appealing to all INPAWS members to contact their Indiana senators and representatives, to support the introduction of a bill in 1998, making the fire pink our new state flower.

Tom Potter announced the exhibit of Mavis DeVoe's photographs at Eagle Creek Park on November 14th and 15th, and exhibits of nature art and photography on December 6-7, 13-14, also at Lilly Lodge in the park.

Rolland Kontak, our interlocutor and master of the duck call, introduced our first speaker, Dr. Floyd Swink, coauthor of *Plants of the Chicago Region*. Dr. Swink showed a great variety of slides of plants found in the Dunes area. Unfortunately, after intermittent static, the speaker's mike gave up the ghost, but our speakers turned up their voice volumes a few notches, and the audience was generally able to hear.

Dr. Swink was followed by Andy Wasowski from New Mexico, who presented the well-illustrated talk, *Building Within Nature's Envelope*. Andy has written several books advocating the careful setting of a new home on a plot of ground, with minimum disturbance to the existing vegetation. Through the use of slides, he demonstrated that existing vegetation may have a significant financial value, and clear-cutting and replacement by artificial-looking grass and landscaping may detract from the beauty of the property and lower its financial value.

Following a half-hour break, Bill McKnight introduced the panel of Mike Dana, Purdue, Dr. Floyd Swink, Morton Arboretum, and Fran Harty, Illinois Dept. of Natural Resources, who discussed the problem of controlling exotic invasive plants, and fielded questions from the audience.

The annual meeting of INPAWS was called to order by Carolyn Harstad at 4:30 PM. Board members were intro-

by Dan Anderson

duced, reading of the minutes of the preceding meeting was waived, and Jean Vietor's Treasurer's Report was presented and approved. Dr. Rebecca Dolan presented certificates of appreciation to several INPAWS members, etched glass plaques to founders Bill Brink, Carolyn Harstad, and Ruth Ann Ingraham, and other plaques to Kevin Tungesvick and Doug Spence, of Spence Nursery, for their contributions. Joe Ingraham, Ruth Ann's husband, and INPAWS founder, who recently passed on, was honored with a minute of silence. Carolyn was also presented with a framed certificate featuring Jean Vietor's miniature painting of a white trillium.

Ted Harris described the desire of Central Indiana Land Trust Inc. to purchase the 65-acre Burnett Woods property in Hendricks County at a very favorable price, and the need for CILTI to raise \$50,000 by year's end to complete the purchase. The INPAWS Board of Directors favors a financial contribution to help secure the property. Kevin Tungesvick moved INPAWS offer a letter of intent to contribute \$2,500, subject to the successful raising of the remainder of the purchase price. The motion was seconded, and after some discussion, approved. Lee Casebere described a project under consideration which has the goal of finding exotic insects which prey specifically on invasives such as garlic mustard, yet have no appetite for our native plants. Approval of a letter of intent for \$1,000 toward this project was also voted.

Dr. Rebecca Dolan, Nominating Committee Chairperson, read the slate of officers for the coming year, which was as follows:

President-Ruth Ann Ingraham, Vice-President-Kevin Tungesvick, Recording Secretary-Carolyn Bryson, Corresponding Secretary-Roger Hedge, and Treasurer-Jean Vietor. All were introduced except for Roger, who was

Report continued on page 5

### HELP NEEDED FOR ENDANGERED SPECIES by Ted Harris

he United States Congress passed the Endangered Species Act (ESA) of 1973 in order to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, and to provide recovery programs for such species. Since that time, through recommendations from the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, more than 800 U.S. plant and animal species have been placed on the list. The ESA is one of the strongest tools ever designed for protecting biological diversity. It has become a model for legislation in other nations and has led to creation of endangered species statutes in 43 states, including Indiana. (Indiana's ESA does not include plants).

Authorization for the U.S. Endangered Species Act expired in 1993, and Congress has been wrestling with conflicting views on what to do next. Resolution of the controversy may come fairly soon. There are two bills currently before Congress that would

update the ESA. One of these, the Endangered Species Recovery Act (H.R. 2351), has wide support from environmental groups. It has provisions and funding to protect the interests of private landowners, while at the same time assuring that species recovery plans are implemented. H.R. 2351 resolves many of the objections to the old ESA.

On the other hand, Senator Dirk Kempthorne's (R-ID) bill S. 1180 would significantly weaken endangered species protection. S 1180 makes new listings much more difficult, complicates recovery planning, and extends the "no surprises" assurances that H.R. 2351 gives to private owners, to federal agencies as well. This extension would leave too much discretion in the hands of agencies whose decision processes usually favor resource extraction over species protection.

Why should INPAWS members care about endangered species legislation? Very simply, it's this: Habitat protection under the federal ESA for the Indiana

bat or for the piping plover, for instance, and under Indiana's ESA for the black-crowned night heron, the osprey, the bobcat and the red salamander, among others, also provides the habitat needed by many native plant species.

What should you do? Please contact your district's congressional representative by writing him or her at the House of Representatives, Washington D.C. 20515 and ask their support for the Endangered Species Recovery Act, H.R. 2351. Write to Senators Lugar and Coats at United States Senate, Washington D.C. 20510 and tell them that you are not satisfied with weak endangered species legislation, such as S. 1180.

You can also reach the switchboard of any federal senator or representative by calling the congressional switchboard at 202-224-3121.

On behalf of nature, thanks for acting! Ted Harris, Conservation Chairman.

#### Report continued from page 4

not present. There were no nominations from the floor, and the slate was voted in as presented.

Carolyn then made a few closing remarks, and turned the meeting over to Ruth Ann Ingraham, who thanked Carolyn for all her work during the past years. The meeting was adjourned shortly afterward.

Following a social hour and an excellent dinner served by Aramark Services, Inc. (Dow's culinary staff), the final presentation was made in the auditorium. The speaker was again Andy Wasowski, and his topic *The Landscaping Revolution*. His many slides compared the sterile appearance of unbroken lawns and shaped bushes to the natural beauty of native trees and flowers, and he recommended highly that more residential and commercial

landscapers focus on natural-looking surroundings.

Carolyn thanked all for coming, and the proceedings ended at about 9 PM.

A successful event requires the imagination and hard work of many people. The committee for the INPAWS 1997 annual meeting was as follows:

Co-chairs: Bill Brink and Carolyn Harstad

Committee: Margo Jaqua, Jean Vietor,

Anne Wilson Introductions: Bill McKnight

Reservations: Jean Vietor Facilitator: Rolland Kontak Programs: Anne Wilson

Registration: Emily Daniels, Rose

Marie Stiffler

Membership: Michael Stiffler Hospitality: Katrina Vollmer, Helen Merrill, Margaret Matthews, Julie Akard, Lin Clayton, Helen Merrill, Donna Keller

Publicity: Margo Jaqua

Tote Bag Packet: Carolyn Harstad, Dan Anderson, Margo Jaqua, Mildred Kontak, Anne Wilson, Emily Daniels

and Helen Merrill

Banquet Decorations: Sue Nord Hall Decorations: Kevin Tungesvick,

Spence Nursery

Book Sales: Jan Lacy, Mary Johnson, Reta Rutledge, Mary Kraft, Bill

McKnight

Logo item sales: Carolyn Bryson,

Margaret Matthews

Award Certificates: Jean Vietor, artist,

Anne Wilson, Gil Daniels

INPAWS web site: Anne and Jonathan

Wilson

Treasurer: Jean Vietor

Special thanks to Katrina and Helen for the delicious refreshments from noon to dusk, and to Blackberry Jam for their uplifting and toe-tapping music.

### MULTIFLORAE

#### SPEAKERS BUREAU REPORT

Our program often slows down at this time of year. We are in the process of putting together a number of slide programs featuring native plants, using slides furnished by our members. If you are interested in presenting a program for INPAWS, the slides will be available for you to use. Some of you may do programs without going through the Speakers Bureau (that saves me work), but please let me know when you speak and to whom, so INPAWS will have a record of your speaking engagement. Dianne Stippler gave a program to Marion County Master Gardeners (south) which was inadvertently omitted from the last newsletter. I did another news piece for Channel 8 (Indianapolis) titled Native Plants in the Shade Garden, which was filmed at my home. The station had many calls after the show, mostly asking for sources of native plants. The general public seems to be getting as interested in native plants as we are! Can you present a program? Please let me know. I have some volunteer speakers I haven't used yet, because there have been no requests for speakers in their areas, but it's great to know that they'll be there when the need arises. Keep warm-it won't be long before the hepatica will be blooming again!

Colletta Kosiba, Speakers Bureau Chairperson, 317-852-5973

#### Northside Master Gardeners Elect 1998 Officers:

INPAWS continues to be well represented in the Master Gardener program. New officers include President-Bill Wagner, Vice-President-Dan Anderson, Secretary-Joyce Landis, Assistant Secretary-Carole Longhenry, and Treasurer-Rae Ellen DeLance. Dan and Carole are INPAWS members, as is retiring president John Pankhurst. Another 20-30 INPAWS members also are M.G.'s.

#### FORT HARRISON STATE PARK:

Volunteers are requested to assist the interpretive staff at Fort Harrison State Park in developing landscaping plans around the park interpretive center. We would like to emphasize native plants for educational purposes. If you can help, contact Jeannine Montgomery at 591-0122 for further information.

#### Christmas Bird Count December 20, 1997,

Meet at the Fort Harrison State Park Interpretive Center by 8 AM and join birders around the world in surveying local birds for population trends. We will bird all morning, and meet back at the center for chili and hot chocolate. Call the interpretive center at 591-0122 for further information.

#### Eagle Day !!! February 14, 1998

Join DNR naturalists from Fort Harrison in hosting the naturalists and bald eagle from Patoka Lake. Explore the natural history and future of this magnificent bird, our nation's symbol.

THE FOLLOWING ITEMS WITH THE INPAWS LOGO ARE AVAILABLE FOR SALE: Sweatshirts:

light gray with forest green printing Sizes M, L, XL \$20.00 Size XXL \$22.00

Insulated Beverage Bags: Black with white printing. Straps allow attaching to your belt, fastening around your waist, or hanging from your shoulder. Can accommodate soft drink cans and water bottles, or your cordless or cellular telephone. \$7.50

Large Tote Bags: Natural (cream) with forest green printing. Totes are very roomy and straps are long enough to place over your shoulder. \$7.50

To order and to arrange shipping or pick up, contact Carolyn Bryson by telephone (317-873-4205), FAX (317-873-6630), or e-mail (quinnell@iquest.net). If shipping is needed, shipping costs will be added to the item price.

We are sorry to announce that Henry Graham, Juanita's husband of almost fifty-five years, passed away on Saturday, November 15th, after prolonged illness. Henry came to love Juanita's wildflowers and painted many pictures of them. We are sure that Juanita would welcome your calls and letters of support.



### NATURE WALKS AT BUTLER UNIVERSITY

Dr. Rebecca Dolan, Director of the Friesner Herbarium at Butler University, will be leading tours on the Butler campus on the following Tuesdays at noon:

#### January 13

Winter birds of the campus

#### February 10

Tour of the Butler greenhouse

#### March 10

Early signs of spring in the Butler woods

Meet behind Gallahue Hall near the greenhouse. Tours will last about 40 minutes. There is no charge and all are welcome. Please come prepared for mud!

If you would like to receive a monthly reminder of the walk, or wish to be dropped from the reminder list, please call Dr. Dolan at 317-940-9413, or email rdolan@butler.edu.

#### seedseedseeds

Here is a good opportunity to obtain locally grown native plant seeds at a bargain price! See insert in this newsletter for a catalogue of seeds collected and processed by INPAWS members. For another copy of the seed list write to Rolland Kontak, 2403 S. Emerson Ave, Indianapolis, IN 46203, or email wilson@hsonline.net. All proceeds will benefit INPAWS.



# 1997/1998

Native

## Plant Seed Sale

# CONDITIONS

- No germination tests have been made
- The quantity of seeds per pack has been determined by availability, seed size, or rarity/desirability of the species
- Seed volume is adequate for home culture or experimentation. Quantities are not large enough for large restoration projects.
- Fluff and chaff are to be expected in some species.
- No shipments will be made outside the USA.
- Allow up to six weeks for receipt of order, although one week should be the norm.

NAME

- Your order form will be returned with your seeds.
- No cash refunds will be given.
   Alternates will be used for refund.

ADDRE

Please report results, disappointments and satisfactions.

TELEPHONE

# How TO ORDER

- All seeds are
  \$1.00 per pack.
- Add only \$1.00 for shipping regardless of the size of the order.
- Circle the item number of the items you want.
- Choose at least three alternates (per order) and write their item numbers in the area provided.
- To order multiple packs of the same species indicate quantity in space below item number.
- Make all checks payable to "INPAWS."
- Address orders to:

Rolland Kontak 2403 S. Emerson Avenue Indianapolis, IN 46203

email: rekontak@juno.com

TOTAL ENCLOSED	PLUS \$1.00 SHIPPING	TOTAL PACKS
		@ \$1 = \$
69	69	69

SS	
	15.50
The little	
THE REAL PROPERTY.	
CONTRACTOR AND	
Contract to	

# PROPAGATION HINTS

ed when seeds are sown as soon as received, and subjected to outdoor natural influences. However we must guard against rodent intrusions, washouts, etc., etc., etc.

divide a seed supply into several parts and subject each part to a different influence. These can be varied potting soils, time of planting, moisture control, temperature variation, light or darkness exposure, covering or surface sowing, chemicals, presoaking, (especially legumes). Please report successful methods.

A reasonable regimen is to

Much specific information is available from a host of authors. A short list:

Seed Germination Theory and Practice by Norman C. Deno, published privately by NCD.

Address inquiries to:

139 Lenor Drive, State College, PA 16801

Growing and Propagating Wild Flowers by Harry R. Phillips ISBN 0-8078-4131-5 (pbk )
The University of North Carolina Press The Wildflower Gardener's Guide by Henry W. Art ISBN 0-88266-668-1 (pbk) Garden Way Publishing Co.

Thanks to the following seed donors:
Don Bickel, Gene Bush (Munchkin
Nursery), Becky Dolan, Ruth Ann
Ingraham, Virgil R. Knapp, Rolland
Kontak, Jean Roberts, Anne Wilson,
Dianna Zamani, and anonymous.

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Chasmanthium latifolium Northern Sea Oats	Climbing Bitersweet	Celastrus scandens	Wild Senna	Hornbeam	Carpinus caroliniana	Carex stipata Common Fox Sedge	Tall Bellflower	Campanula americana	Camassia scilloides Wild Hyacinth	Brachyelytrum erectum  Long-awned Wood Grass	White Wild Indigo	Blue Wild Indigo	Baptisia australis	Bristly Aster	Aster puniceus	Asclepias verticillata	Butterfly Milkweed	Common Milkweed	Asclepias syriacus	Asclepias incarnata Swamp Milkweed	Wild Ginger	Goat's Beard	Aruncus dioicus	Chokecherry	Aronia prunifolia	Arisaema triphyllum	Green Dragon	Arisaema dracontium	Wild Columbine	Little Blue Stem	Andropogon scoparius	Big Blue Stem	Andropogon gerardii	White Baneberry
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Hibiscus palustris Swamp Rose Mallow	Sharp-Lobed Hepatica	Hepatica acutiloba	Oxeye, False Sunflower	Woodland Sunflower	Helianthus divaricatus	Sneezeweed	Bowman's Root	Gillennia trifoliata	Geranium maculatum alba White Wild Geranium	Bottle or Closed Gentian	Late Boneset	White Snakeroot	Eupatorium rugosum	Wahoo, Burning Bush	Euonymus atropurpureus	Eryngium yuccifolium	Canada Wild Rye	Purple Coneflower  Flymus Canadensis	Echinacea purpurea	Dodecatheon meadia Shooting Star	Illinois Bundle Flower	Dwarf Larkspur	Delphinium tricorne alba	Dwarf Larkspur	Delphinium tricorne	Corydalis sempervirens Pink Corydalis	Flowering Dogwood	Cornus florida	Tall coreonsis	Leather Flower	Clematis viorna	Wood Reed Grass	Cinna latifolia	Black Cohosh
072		071	0/0		069	068		067	066	065		064	063		062	061	000	080	059	058	700		056		055	054		053	052		051		050	049
Robinia pseudoacacia	Gray-Headed Coneflower	Ratibida pinnata	Common Mountain Mint	Prairie Cinquefoil	Potentilla arguta	Solomon's Scal (Various)	Jacob's Ladder	Polemonium reptans	Physostegia virginiana Obedient plant	Purple Prairie Clover	Foxglove Beardtongue	Switch Grass  Penstemon digitalis	Panicum virgatum	Wild Bergamot	Monarda fistulosa	Monarda clinopodia	Mitrewort	Mitella diphylla	Ludwigia alternifolia	Great Blue Lobelia	Cardinal Flower	Spicebush	Lindera benzoin	Blazing Star	Liatris squarrulosa	Liatris spicata	Bush Clover	Lespedeza spp.	Tall Blue Lettuce	Kankakee Mallow	Iliamna remota	Bottlebrush Grass	Hystrix patula	Yellow Star Grass
				PLEA		092		091	090	089	-	088	087		086	085		084	083	082	001		080		079	078		077	9/0		075		074	0/3
				PLEASE LIST ALTERNATE SELECTIONS HERE		Adam's Needle, Spanish Bayonet	Maple Leaf Viburnum	Viburnum acerifolium	Vernonia spp. Ironweed (various)	Various White Trillium	Declined Trillium	Trillium flexines	Symphoricarpus albus	Wood Poppy	Stylophorum diphyllum	Stipa spartea	Indian Pink	Indian grass Spigelia marilandica	Sorghastrum nutans	Solidago rigida Stiff Goldenrod	Riddell's Goldenrod	False Solomon's Seal	Smilacina spp.	Prairie Dock	Silphium terebinthinaceum	Silphium laciniatum	Rosin Weed	Silphium integrifolium	Heart-leaved Skullcap	Downy Skullcap	Scutellaria incana	Elderberry	Sambucus canadensis	Sweet Black-Eyed Susan

#### Letter to the Editor:

My husband Joe and I were two of four co-founders of the Indiana Native Plant and Wildflower Society. It was impossible to imagine what would evolve statewide when that proverbial ball started rolling in the spring of 1993 or what an impact the organization and its teachings would have on our lives.

Through INPAWS we learned how to convert a mowed lawn to a meadow on the slope leading to our little Brown County cabin and reveled at the positive impact that conversion had on the biodiversity there.

On August 19 Joe died from cancer. Thank you, my native plant and wildflower support group, for your touching remarks about Joe, your hugs, your notes and the solace you give me. And special appreciation to Anne Wilson from me and Joe's family for the tribute she wrote and included in the fall edition of the INPAWS newsletter.

Sincerely, Ruth Ann Ingraham Membership Chairperson.

Prairie Nursery, in Westfield, Wisconsin, has published its first newsletter, "Prairie Concepts," featuring innovative landscaping ideas. If anyone is interested in being on the mailing list, contact Prairie Nursery Inc., PO Box 306, Westfield, WI, 53964, phone (608)296-3679 or fax (608)296-2741.

NABA-CENTRAL INDIANA BUTTERFLY CLUB Please join us for a brainstorming meeting at the Nora Library on January 13, 1998, 7-8:30 PM. The first issue of Butterfly News, our newsletter for members of the Central Indiana Butterfly Club, will be delayed until February 1998. Please submit any short articles, etc. for review by our January meeting. Non-members may subscribe to Butterfly News for a cost of \$5.00 per calendar year.

For details call Don Fisher at 317-475-9770.

Welcome to all of you who recently joined INPAWS for the first time. We hope you will be inspired by your involvement with us. I now introduce you to Michael Stiffler, the new Membership Chair, to whom I pass the INPAWS data base. Please take a moment to renew your membership for 1998. See page 11 for form, and send to Michael, or call him for more information at 317-422-8914 - Ruth Ann Ingraham.

#### Bloomington

Russell and Bonnie Boulding

#### Bryant

Kenneth Brunswick

#### Carmel

Timothy Hanrahan

#### Connersville

Mike and Beth Bell Family

#### Denver

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Dawn Nichols

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Rich and Dee Peine Don Slaughter Bill and Joan Warrick

#### Jasper

Dave Elliott

#### Lafavette

Clifford Cox

#### Liberty

Shell and Clyde Bowne

#### Merrillville

Allan Nalbor

Upland Yvonne Ball

#### Walkerton

Dan Zay

#### MORE RARE PLANTS FOUND IN INDIANA

The Indiana Division of Nature Preserves has been conducting an inventory of rare plant species in various areas of the state. In the latest issue of Natural Area News a large number of significant finds was reported. Among those working on the survey was INPAWS member Ellen Jacquart.

Mike Homoya found, at Pigeon River, Pale Vetchling Peavine (Lathyrus ochroleucus), Purple Oat Grass (Schizachne purpurascens) and several other threatened species. Purple Rock Cress (Arabis divaricarpa) was found in Starke County. In Lake County, Canada Buffalo-berry (Shepherdia canadensis), thought to be extirpated in Indiana, was found. Specimens of the fern Wallrue Spleenwort (Asplenium ruta-muraria), Allegheny Stonecrop (Sedum telephioides), Large-Leaved Phlox (Phlox amplifolia), and several rare grasses were observed. Specimens of Perfoliate Bellwort (Uvularia perfoliata) were located in Floyd County.

With all their combined efforts, botanists working for DNR and educational institutions have explored only a small portion of our land area for rare and unusual species. There may be many more surprises to be found in our state, some possibly in our own yards, woods or fields. INPAWS members can be a powerful help to state botanists by keeping their eyes open for any plant that appears unfamiliar or different, getting it identified, and reporting its presence to DNR if it has not been previously reported in Indiana, or if it is rare or threatened

# Rooted in Mystery . . . Part II

# Growth Requirements of the Dink Lady's-Slipper

by Bill Cullina

When you hear the phrase "old-growth forest," do you picture towering emerald cathedrals soaring hundreds of feet above a dimly-lit forest floor? This type of forest is found in the Pacific Northwest, where winters are mild and wet and summers are dry and calm. Fires sweep through occasionally during the dry months, and trees can live 1000 years or more. Here in the Northeast, moisture is more evenly distributed. Winters are too cold to allow much growth, but summers are warm and wet. Fire is much less common, but hurricanes, ice storms, and tornadoes cause massive canopy disturbance every century or so, and

most trees live only 100-

200 years.

For plants like the Pink Lady's-slipper (Cypripedium acaule), such a pattern provides many opportunities. Cypripedium acaule is a forest plant, with large, flat, deep green leaves that are perfect for collecting the dim light that penetrates the canopy. Though this lowslung growth habit makes it a poor competitor against dense shrubs, grasses and forbs, that is not a problem in the uplands where it typically grows. Here shade and dry soils limit undergrowth to sparse shrubs such as blueberries and huckleberries.

The amount of light the plant can collect and convert into energy determines how fast it will reach maturity and bloom. If the tree canopy is light and broken, the lady's-slipper will accumulate reserves that it can squander on flowering and seed production. If the

bs, Cypripedium acaule

canopy is more dense, the plant may accumulate only enough energy to maintain itself through the dormant months. If the canopy becomes too dense, the plants will lose ground from year to year and eventually die. In this way, lady's-slippers are dependent on occasional disturbances, like the severe ice storm, which breaks up the canopy, but doesn't destroy it. This is important, as the plants can't compete with sun-loving grasses and shrubs; too much disturbance, such as clearing for

agriculture or construction, will eliminate them. After a disturbance, lady's-slipper reproductive rates climb, and the next generation can become well enough established to persist for the next 50-100 year cycle.

Pink Lady's-slippers can live more than 100 years, but may flower only 10-20 times during that period, and set seed a mere 2-5 times—an extremely low reproductive rate. It's as if these plants mark the passage of time in decades rather than in years, waiting for the right combination of factors to allow reproduction to proceed.

Many people have remarked that lady's-slippers were once common on their land but, over the years, have dwindled or ceased to bloom. This is probably because the forest has become older and shadier. If the canopy is thinned, the plants often make a speedy recovery.

#### BEES BUMBLE IN

Research by Douglas E. Gill of the University of Maryland has further clarified Cypripedium acaule's requirement for occasional canopy disturbance. The strange shape of the flower has evolved as a way of assuring cross-pollination, thus preventing inbreeding. For reasons that are unclear, queen bumblebees who have just emerged from their winter dens are attracted to the pouch of the flower, and crawl in through the opening. The flared opening is designed like that of a lobster trap-easy to crawl into, but hard to escape from. In order to leave, the bee must crawl up the back of the pouch and squeeze first by the sticky female stigma and then under one of two globs of pollen (pollenia), which sticks to its back, just in front of the wings. If the bee then visits another flower, it will brush this pollen onto that flower's sticky stigma before picking up a new glob of pollen. This elegant system has one major flaw, however: ther is no nectar reward to lure the bee to new flowers, and the placement of the pollen on its back prevents the bee from harvesting it. After as few as one or two visits, the bee learns to avoid the deception, and looks elsewhere for nectar. Thus the orchids must have a large population of naive bumblebees to ensure good pollination rates ( most other nectar-feeding insects, including honeybees, are too small to fit through the opening tightly enough to pick up the pollen). This is most likely to happen in the years following a canopy disturbance, when the increased sunlight both attracts bees and allows nectar-rich companions, such as Lowbush Blueberry, to flower heavily. Fortunately, the same conditions trigger the heaviest orchid flowering, and in those years pollination rates can soar to 30 percent.

The resulting seed will also find conditions optimal for germination and rapid growth. Gill has found that, in his study populations, mature plants may lie dormant for many years until triggered (possibly by the warmth of sun reaching the ground) to emerge, bloom and set seed.

#### A SUBTLE SYMBIOSIS

Orchid seeds cannot germinate unless they become infected by certain soil fungi, which the seedlings actually digest to obtain the sugars, hormones and nutriments necessary for growth. Orchid mycorrhizae, as these symbiotic fungi are called, are grouped mostly into the genus Rhizoctonia. It does not appear, as was once thought, that every species of orchid has evolved with a specific fungus, but rather that an orchid can rely on at least a couple of different fungi interchangeably. In fact, research has shown that a species of fungus isolated from a tree-dwelling tropical orchid is capable of successful symbiosis with the completely unrelated temperate orchid Goodyera repens, our Rattlesnake Plantain. Some species of fungus have worldwide distribution, while others are limited to local areas. What I find very interesting is that at least some species of Rhizoctonia are pathogenic, or disease-causing, when they infect non-orchidaceous species. It may be that in the distant past these fungi were parasites on orchid seeds, but eventually the seeds developed ways to resist and to control this parasitism to their own benefit. In effect, the seeds have reversed roles, now becoming parasites of the fungus. It is not clear what benefit the fungi get from this relationship, although they may receive certain enzymes or nutrients from the orchid. Rhizoctonia species are part of the soil flora, and most, if not all, are able to grow rapidly as saprophytes (living by breaking down non-living organic matter, such as rotting wood). Thus you should normally find at least a few species in any soil containing decomposing organic matter-whether or not orchids are present. Some species seem to be generalists, capable of growing in a variety of soils and organic materials, while others are specific to certain habitats.

Lady's-slippers in particular have been associated with at least six species of

Rhizoctonia. These fungi are present in soils where the orchids grow, and are thus available to infect and aid in the germination of seedlings. Cypripedium seedlings have also been germinated in a lab, using one of the most common and widespread species of orchid fungi, but it is not clear if this particular species aids germination in the wild. Thus, even though orchids may not be growing on a particular site, suitable fungi are probably already present to allow germination if seeds are introduced.

Mature plants (those at or near flowering size) of some, if not of all, of the species do not seem to be dependent on mycorrhzae to any great degree. In fact, even small propagated seedlings that we have received in sterile bags (i.e., growing without mycorrhizae) grow on very well in a sterile hydroponic mix. It is clear that once these seedlings have passed out of the critical germination stage, they can grow well without mycorrhizae under cultivated conditions.

#### BETTER LEFT WILD

I hope this brief article has shed some light on the complex and highly-developed life cycle of the Pink Lady's-slipper and the specialized conditions which allow them to thrive. Some wild things are better left wild, and these striking natives reward our respect with beauty and an intriguing touch of mystery that is a rarity in itself. Please enjoy them growing, as they are so well-adapted to do, in the wild places of New England, where others can enjoy them as well.

Bill Cullina is Propagator for the New England Wild Flower Society.
We appreciate the kindness of the Society and the author in allowing us to reprint the article in its entirety. For references, please consult the "New England Wild Flower", Fall/Winter 1997, or contact INPAWS News Editor Dan Anderson.

## Showers Fail to Dampen Dunes Trip

by Kevin Tungesvick

he October 4th trip to the Indiana Dunes was an exciting experience for all of the participants. Although thundershowers threatened at the first two sites, rainfall was light and did not interrupt the ambitious itinerary. Visits to Ivanhoe Dune and Swale, Miller's Woods, and West Beach highlighted the floral diversity for which this area is so well known.



The first stop was at Ivanhoe Dune and Swale, where Paul Labus with the Nature Conservancy's Southern Lake Michigan Conservation Initiative explained how the site had been subdivided but never developed. The Nature Conservancy was able to purchase the property on a lot by lot basis, preserving its outstanding diversity. This globally rare Inland Dune and Swale Community contains Black Oak savannas on the dunes and wetlands in the swales. The damp sandy areas at the edges of the swales harbored thousands of Fringed Gentians (Gentiana crinita) in flower. The extremely fragrant Great Plains Lady's Tresses (Spiranthes magnicamporum) were also blooming across the site. Several beautiful asters, including Sky Blue Aster (Aster azureus) and Rice Button Aster (Aster dumosus) added late season shades of lavender. Finally, Winged Sumac (Rhus copallina), Sassafras (Sassafras albidum), and Black Gum (Nyssa sylvatica) sported spectacular fall foliage.

We continued to our first site in the Indiana Dunes National Lakeshore, Miller's Woods. There we were joined by three members of the Shirley Heinze Environmental Fund, a land trust dedicated to preserving natural areas in northwest Indiana. Barbara Plampin, an experienced botanist from this organization, interpreted our two stops in the National Lakeshore. Many thanks go to Barbara, Myrna Newgent, and Eva Hopkins for lending their assistance and expertise.

The Miller's Woods area contains higher dunes interspersed with interdunal ponds. The dunes are covered with some of the finest remaining Black Oak savannas in the Midwest. The state rare Bush Honeysuckle (Diervilla lonicera) thrives in this savanna. Some interesting plants in flower during the trip included Showy and Grey Goldenrod (Solidago speciosa and nemoralis) and Flax-Leaved Aster (Aster linariifolius). Moister areas contained Rose Gentian (Sabatia angularis) and Bottle Gentian (Gentiana andrewsii). A boardwalk leads across an interdunal pond containing a diverse emergent plant community. Among the emergent plants present were Pickerel Weed (Pontederia cordata), Burreeds (Sparganium eurycarpum and chlorocarpum) and Hard-Stemmed Bulrush (Scirpus acutus).



Our second site in the National Lakeshore, West Beach, is a scenic array of habitats containing many rare and unusual plants. We hiked the dune succession trail, traversing various plant communities that occupy different stages of dune succession. On the foredunes next to the beach, we saw the dune stabilizing Marram Grass (Ammophila breviligulata). Also present in this community was Sand Reed

(Calamovilfa longifolia var. magna) and Cottonwood (Populus deltoides). As we traversed inland, we encountered several woody shrubs characteristic of the dunes, including Beach Sumac (Rhus aromatica var. arenaria), Sandcherry (Prunus pumila), and Hoptree (Ptelea trifoliata var. mollis). An area of even more stable sand contained Jack Pine (Pinus banksiana), Arctic Bearberry (Arctostaphylos uvaursi), and Prickly Pear (Opuntia humifusa). We then descended into areas where the wind had excavated the sand



down to the water table, know as pannes. This habitat contains many characteristic plants, including Horned Bladderwort (Utricularia cornuta), Kalm's Lobelia, (Lobelia kalmii), Kalm's St. John's Wort (Hypericum kalmianum) and Baltic Rush (Juncus balticus). After traversing a blowout, the group entered a dune woodland with a variety of familiar woody plants, including Basswood (Tilia americana), Sassafrass, and Witch Hazel (Hamamelis virginiana).

Our final outdoor stop took us to Jasper-Pulaski State Fish and Wildlife Area to view migrating Sandhill Cranes returning to their evening gathering site. Although we were early in the season for peak numbers, thousands of cranes were present. As the sun set, we headed south where we enjoyed dinner in Lafayette at Ryan's Steakhouse, a satisfying end to a terrific day.

Kevin Tungesvick will be program chairman for 1998/1999 and would welcome your comments and suggestions for more exciting activities.

#### MESSAGE FROM INCOMING PRESIDENT RUTH ANN INGRAHAM

s your newly elected president, I need to know what you want Indiana's native plant society to focus on; what would make this organization more valuable to you, more effective, more vital. I raised this question at the 1997 annual meeting last month. People answered that INPAWS is great and that we should keep doing what we're doing. But, to paraphrase another, we need to remind ourselves often of our clearly stated mission and act accordingly.

I am retiring as your membership chair. In that position, and previously as corresponding secretary, I entered membership information into the computer from the beginning of INPAWS four years ago. I've had my finger on the pulse of INPAWS. Remarkably dozens of you signed up to help the Plant Rescue Committee.

Obviously rescuing plants is a vital concern and inspired many of you to join INPAWS. How can we accomplish this? Excellent question. Rescuing plants, as we've learned, can be pursued in different ways:

- 1. You dig up and move plants from land targeted for destruction to safe, viable sites:
- 2. You pull up or dig out or apply chemicals to aggressive, invasive exotic plants that threaten the viability of indigenous plants, a task dozens of us have been involved with;
- 3. You support research into biological control of aggressive invasives. (Note: We voted to do this at the recent annual meeting.)

The first of these three, transferring plants to a safe habitat, is the most complex and, for us, the most elusive. But we believe we are closing in on the process. Sue Dillon, Plant Rescue chair, will hold a second certification/training session early in the spring of 1998; this will provide a forum for defining solutions to the problem.

A second major interest, I've noticed, is how to use native plants in our own yards. I am arranging to have a demonstration garden planted in my front yard using native vegetation, primarily. There must be many private and public gardens featuring natives. Let's construct a list of members who have landscaped with native plants and who would welcome visitors on an informal basis. We could do the same for prairie and meadow plantings as well as wetlands and learn from one another.

And again INPAWS will support a demonstration garden at Orchard In Bloom, Indianapolis, in May, designed and executed by Hilary Cox and cochair, Mike Rian.

Finally, we receive a steady flow of requests for lists of Indiana's native plants and sources. I will ask the Executive Board to authorize the publication within the coming year of a pamphlet listing Indiana's native plants, practical for home landscaping, and their sources.

I genuinely look forward to 1998 and hope to meet many more of you by holding regional meetings. You will read and hear more about this at a future time.



MEMBERSHIP APP Annual dues pertain to the fiscal year January 1 through December 3			ne following fiscal year.
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#### From the Editors:

e are continuously striving to make INPAWS News the most informative publication we possibly can-one that is attractive, readable, and packed with information which will be useful in the cultivation, study and appreciation of native plants.

Many of you may be reluctant to share your experiences with native plants because you are not trained botanists, and feel somewhat self-conscious about writing an article for a journal that is read by professionals.

Please rest assured that Anne and I are not professionals and we believe that most INPAWS members aren't, either (at least, in the field of botany). We're interested in growing and appreciating native plants, and helping awaken interest in our natural heritage among our students, garden clubs, and the general public.

So don't be shy! Please share with fellow INPAWS members your experiences with growing native plants, trips you have taken to study them, and any information you have regarding programs in your area or places to visit that would be of interest to other INPAWS members.

Letters to the editors are welcome, too. If you have a problem in plant identification, or a question, please write us or contact us by e-mail. We may not have the answer, but we'll find out for you, and you won't have to wait for the next issue of INPAWS News to come out!

We're keeping up with changing technology, too! If you have a computer but no e-mail, you can record your article on a floppy, if it is MS Word or another commonly-used word program, and send the floppy to Dan Anderson. (It will be returned!) If you have e-mail,

you can send the message that way, but it should be pasted into the body of the message rather than submitted as an attachment. If the article is typed on a typewriter, Gil Daniels has volunteered to scan the article and put it on disk, eliminating retyping. Also you may submit handwritten copy or convey the information over the phone.

Best wishes for the coming year, and we hope to hear from you. Your editors, Dan Anderson, danand@netdirect.net, and Anne Wilson, wilson@hsonline.net.



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