INDIANA Native Plant and Wildflower Society NEWS

Volume I Number 2 Summer 1994

Landscaping with Natives
Spotlight on Foamflower

by Barbara Kaczorowski

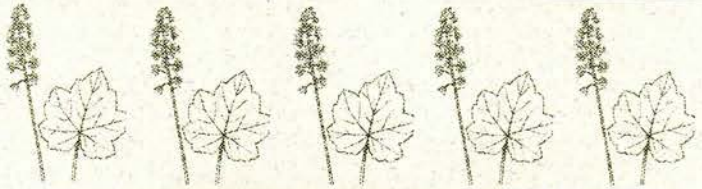
When I am designing gardens for shade, I almost always include Foamflower (*Tiarella cordifolia*). Native to rich woodlands of the eastern United States (but not Indiana) and hardy from Zones 3 through 8, this adaptable, semi-evergreen plant is one of the prettiest flowering ground covers I've seen.

Foamflower forms dense mats of foliage about six inches high, spreading strawberry-like by runners or stolons. Its leaves are highly variable in shape and color. The specific epithet *cordifolia* means heart-shaped, as many of the leaves are. But some of them are five-lobed, resembling maple leaves, while most have only three faint lobes and a toothed margin. While I've read that the leaves can be shiny dark green, the strain I grow has lime green leaves bristling with hairs on the upper surface. This last characteristic makes the plant distinctly unappetizing to slugs, a real asset in a shade plant. And, after last winter's 25 degrees below zero, about eighty percent of the leaves are still perfectly green.

Foamflower is aptly named for its froth of white flowers which appear in late April and bloom for about three weeks. The starry flowers appear on spikes or racemes, standing at most a foot tall. While the individual flowers are less than a third of an inch across, as many as fifty are borne on each stalk. When you consider that each plant sends up ten to twelve stalks, and that the plants cover the ground like a blanket, you can imagine how *Tiarella* earned its common name of Foamflower. The effect is of a frothy floral drift which seems to float over the foliage.

But the lovely look of Foamflower's foliage and flowers does not tell the whole story. For when you pass by your drift of Foamflower on a warm day in early May, you will breathe in a most delicious and ethereal fragrance. And you need not bend double to appreciate this delightful scent, for it is wafted into the air in an intoxicating way. Oddly enough, nowhere have I read of Foamflower's fragrance, yet it is most pronounced in my garden, especially in the morning when my plants are in full sun.

Wherry's Foamflower (*Tiarella cordifolia* var. *collina*, sometimes sold as *T. wherryi*) is more widely available in the trade



and a nice plant in its own right. It is a clump grower, not spreading by stolons like the species. The leaves are often tinged with red, and are not as evergreen. Its flower stalks are a couple of inches taller, and the flowers themselves are very slightly tinged with pink. The stamens also are pink, rather than yellow, adding to its flush of color. Its big advantage over the species is that it will sometimes rebloom in late summer or fall especially if you deadhead (remove spent blossoms) it after spring bloom. Its disadvantage is that it has little or no fragrance, at least to me. Because of its different growth habit, it is not suited to ground cover use.

Foamflower is a tough plant if you give it a good soil environment. As you can guess from its native habitat, it does best in a soil rich in humus. If your soil is a heavy clay, add some sand as well as copious organic matter. Foamflower prefers a slightly acid soil, but the incorporation of humus is usually adequate to moderate pH to its liking. If you find your plants becoming chlorotic (losing their green color), scratch some wettable sulfur into the soil around them.

Spotlight on Foamflower continued on page 2

Inside. . .

Germinations from Jeffrey

by Jeffrey Maddox, INPAWS President

Welcome to our second newsletter! The newsletter committee deserves our thanks for their efforts to keep us all in touch and for the quality publication they've produced.

This committee is a shining example of what INPAWS needs to grow into the role we wish to play as a strong, powerful voice for native plants in Indiana — participation! The board of directors (with input from others) has recognized several other areas where a committee is needed, and we will be doing a better job when we get these committees up and running. Who should head them? Who should staff them? The answer is: each and every one of us. If we want to see INPAWS develop into a productive organization, each member needs to work with at least one committee — it's your choice how well we grow.

Committees needing chairs and/or members include:

- Annual Meeting
- Speakers Bureau
- Publicity/Public Relations (need committee members)
- Fundraising
- Plant Rescue/Special Projects
- Deer Management

Please call one of your executive officers to become more active.

I'd like to highlight the Deer Management Committee (or whatever it might be called) as a current and relevant example. It could be very important to INPAWS, not because we are interested in deer per se, but because we are interested in native plants, and deer are negatively affecting those plants. More importantly, the overpopulation of deer is a prominent, statewide issue right now, and there is no one speaking for the plant communities which they are destroying. The talk so far has centered on deer killing.

We have a valuable opportunity for INPAWS to forge a public identity and become a key player in native plant issues. Many of the people who are heavily involved in the State Park system deer issue have come to me, as INPAWS president, asking us to speak for the plants and remind everybody why the deer overpopulation subject came up in the first place: a concern for the destruction of our native plants and habitats. These matters are at the core of why we came together; let's act on them.

Bottom line is: INPAWS will grow into a strong, respected organization as a direct result of the involvement of its members. Join or lead a committee today!

Jeffrey Maddox is a field steward for The Nature Conservancy *in Indiana.*

Spotlight on Foamflower continued from page 1

Like most woodland plants, Foamflower requires shade at least during the afternoon. Plant it where it can spread about and produce the lovely drifts of bloom which give it its name. Although it is a stoloniferous plant, it is by no means aggressive, coexisting happily with spring bulbs and ephemerals, as well as other shade lovers like epimedium, hosta, pulmonaria and crested iris. No prettier companion can be found for planting under Rhododendrons and Azaleas, except perhaps for the recent selections of *Phlox stolonifera* ("Pink Ridge," "Blue Ridge," "Sherwood Purple" and "Bruce's White"). But that's a story for another day.

Barbara Kaczorowski is a landscape designer and horticulturist with a longstanding interest in native plants. A writer for Rodale Press and contributor to Horticulture magazine, she is co-owner with her husband Michael of Accent Gardens, a local landscape and nursery business.

Indiana Native Plant and Wildflower Society Newsletter

Published periodically 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.

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, Chris Carlson, 6330 N. Park Avenue, Indianapolis IN 46220

Illustrations by J. Glimn-Lacy

INPAWS Calendar of Events

Late May, date to be announced:
A field trip to the Indiana National Lakeshore and dunes area to see lupines, puccoon, etc.

Mid-June:
A field trip to Pigeon River in northeastern Indiana in search of native orchids and carnivorous plants from the bogs—details to follow.

Auction and Sale of Native Plants

Saturday, June 4, 1994

Auction begins at 10:30 AM; donations accepted from 9 AM

GARFIELD PARK
Shelter House Number 2
2450 Shelby Street, Indianapolis
(near Southern Avenue)

Please help make this a successful auction!
Dig and pot plants early for good-looking plants at auction time.
Label plants with common and scientific names, cultivation requirements and other descriptive information.
Include all kinds of native plants, such as flowering annuals, biennials and perennials, ferns, grasses, mosses, vines, shrubs and trees from woodland, meadow, prairie, bog, hill and dale.
Plants should be from private collections; we do not dig plants from the wild.

Remember garden supplies, tools and other nature-related items also.

Auctioneer will be Rolland Kontak, license number AU01028940

Some of the rarities to be offered:
Various Native Orchids, Bottle Gentian, Goldenseal, Red-stemmed Lady Fern, Royal Catchfly, Prairie Grasses and others too numerous to mention

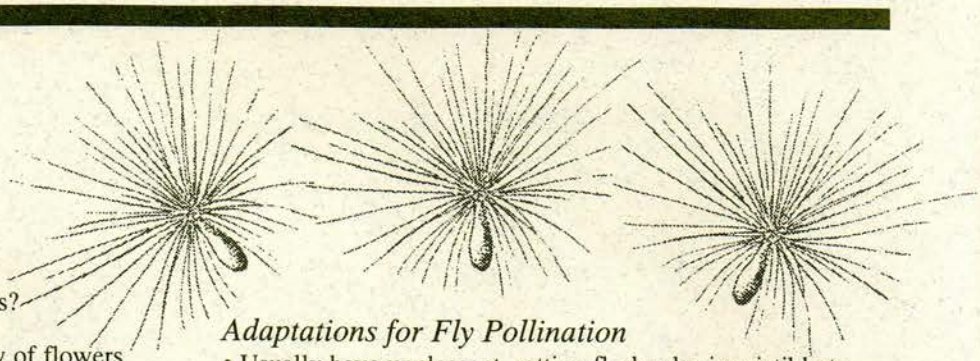
Questions?...Call:

Anne Wilson	*(812) 342-6838*	*Rolland Kontak*	*(317) 356-0953*
Sue Nord	*(317) 782-0763*	*Gisela Reibel*	*(317) 257-1783*

Lunch will be available at a modest cost

Pollinators of Plants

by Dr. Rebecca W. Dolan



Why is there such a wondrous variety of flowers?

Plants produce their amazing and beautiful array of flowers in order to reproduce. Exquisite as flowers may seem to us, from the plant's perspective all the vast array of colors, shapes, and scents are attempts to lure agents to assist in pollination. Pollination is the movement of pollen from the male part of the flower, the stamen, to the female part that houses the eggs, the pistil. Animal pollinators (insects, birds, even a few mammals) get food energy from nectar or the pollen itself as they feed from flower to flower; plants get the benefit of outcrossing (cross pollination). Floral characteristics are keyed to the senses of the pollinators. Certain combinations of floral traits indicate the most likely agent of pollination:

Adaptations for Wind Pollination

- Few colorful, showy floral parts
- No odor or nectars
- Male flower parts on long filaments, easily shaken in the wind
- Flowers often develop before plant leafs out
- Abundant pollen

Examples: Many forest trees, grasses (including corn), Ragweed. Wind pollinated plants are often the source of hay fever allergies since much pollen must be produced due to non-directional vectoring, relying on chance encounter of pollen and pistil.

Adaptations for Hummingbird Pollination

- Flowers often large and tubular
- Copious nectar, no odor
- Usually bright colors such as red
- Stamens extend outside the flower
- Pollen often held together by sticky threads

Examples: Cardinal Flower, Hibiscus, Royal Catchfly, Trumpet-creeper, Red Columbine

Adaptations for Bat Pollination

- Large flowers on long, strong stalks away from leaves
- White or dull colored, often dark red or maroon
- Musty, fruity, or mousey odor
- Lots of pollen, nectar, or both

Examples: Mostly tropical such as banana, Baobab

Adaptations for Bee Pollination

- Colors often yellow, blue, or purple with contrasting color "nectar guides" that are more striking under UV light, the wavelengths in which bees see the best
- Flowers often have a flat area, or landing platform
- Sweet odor
- Male and female bees live on nectar, females collect pollen to feed larvae
- Flowers usually bilaterally symmetrical
- Some flowers have spring-loaded stamens that spring loose to dust the bee with pollen

Examples: Snapdragon, Foxglove, Marsh Marigold

Adaptations for Fly Pollination

- Usually have unpleasant, rotting flesh odor irresistible to flies
- Flower parts often mottled red color of rotten meat that attracts flies looking for places to lay their eggs
- Many plants have deep flowers that trap the flies. As they struggle to exit, they become covered with pollen that is then transported to another flower.

Examples: Skunk Cabbage

Adaptations for Butterfly Pollination

- Flowers have pungent but aromatic scent
- Flowers often clumped into platforms
- Usually radially symmetrical
- Often have spurs, long tubes of fused petals, filled with nectar that the butterflies reach with their tongues.

Examples: Butterfly Weed, Phlox, Daisy

Adaptations for Moth Pollination

- Mostly night-blooming
- Intoxicatingly sweet odor
- Usually radially symmetrical
- Usually white or light-colored

Examples: Gardenia, Tobacco, Four-o'Clock, Evening Primrose, White Campion

Adaptations for Beetle Pollination

- Petals often thick and waxy, white or dull in color
- Strong odors: fruity, spicy, or foul, not sweet
- Flowers often cylindrical and bowl-shaped
- Some secrete nectar, beetles feed directly on flower part or special food bodies in others

Examples: Magnolia, Tulip Poplar, Liver-leaf *(Hepatica)*

A final pollination type is that of some tropical wasps. They aren't after food, but sex, from flowers. Some species of orchids produce flowers that mimic female wasps. They open before the female wasps are mature and in some cases give off the same scent or pheromone. As the males attempt to copulate, pollen is carried from plant to plant.

Need assistance in identifying a plant?
Call 317-283-9413 or write:

Dr. Rebecca W. Dolan
Director — Friesner Herbarium
Butler University
4600 Sunset Avenue
Indianapolis, Indiana 46208

Dr. Dolan does research in plant ecology at Butler University in Indianapolis and is currently working on a population biology of rare indigenous plants. She is Director of the University's Friesner Herbarium, oversees Butler's 6-acre prairie and has put together a census of campus flora.

Where Did the Flowers Go?

by Jean Vietor

Being an artist who paints wild things, I spend a lot of time in wild places, sketching and photographing flora and fauna. I like the state parks, for they offer wild and tame together — bathrooms, restaurants and wilderness — ah! Turkey Run, Clifty Falls and Brown County are my favorites - or were. Turkey Run and Clifty Falls still offer a feast for the eyes and cameras, but Brown County? It used to be a great place, but now it is difficult to find anything but the bare minimum of wildflowers.

Two years ago, with camera and sketch pad in hand, I headed for Brown County State Park. I spent an entire day there searching and made not one sketch nor took one picture — there was nothing there! At the time, I was bewildered as to where the flowers had gone. Later I discovered that they had provided fine feasting for the deer I had been photographing eyeball to eyeball. I love the deer — I love the wildflowers — a real dilemma, right? A real dilemma — YES!

For the time being, and maybe forever, Brown County State Park is off my list as a good place to see beautiful wildflowers.

Jean Vietor is an award-winning artist whose subjects include wildflowers as well as other forms of wildlife. An Indianapolis resident, she is a charter member of INPAWS and serves as its treasurer.

INPAWS Members Help With Butler's Prairie Burn

Following the clearing of alien Amur honeysuckle at Holliday Park on March 11, a dozen INPAWS members helped conduct the annual burn in the Butler University Prairie. Dan Zay of the Division of Nature Preserves, Indiana Department of Natural Resources, led the burn crew. Volunteers helped make sure the fire was contained using backpack water containers and flappers (rubber mats on broomsticks).

Prairie grasses are an especially good fire fuel; the whole site burned in about fifteen minutes. Everyone witnessing one of these burns can appreciate a little of the fear and awe pioneers must have felt seeing uncontrolled prairie fires.

The six-acre Butler Prairie is burned every year to help control invasive weeds and to fertilize the desired plants, according to Dr. Rebecca Dolan who manages the Prairie. Fire was a natural occurrence in many ecosystems in pre-settlement times. Prairie plants are mostly perennials with dormant buds at or below ground level during the winter. A quick-burning fire clears off the old above-ground biomass from the previous year without damaging the plants. Fire can also enhance germination of seeds of fire-adapted species. Non-prairie weeds and nuisance plants such as Cottonwood, Sumac and Trumpet-creeper are not as resistant to fire. Trees and shrubs with buds held on above-ground branches are especially susceptible, so their spread can be controlled with fire.

Newsletter Sponsors

Many thanks to two companies who have made contributions to help cover the expenses of producing the summer INPAWS newsletter: WildSide and Great Outdoors TurfScapes. Their ads appear on page 10.

Great Outdoors TurfScapes, owned by founding INPAWS member Bill Brink, is a professional turf management company located in Indianapolis.
Bill's concern for the environment and his wealth of knowledge regarding native plants have helped give Great Outdoors a top rating with local consumer groups.

Brian Creek, president of WildSide, believes it is neither possible nor desirable to separate the human from the natural world. His company performs ecological restoration and provides planning and design for private native landscapes as well as parks and other public greenspaces.

Wildflower Photography
Part 2—Tripods

by Tom Potter

The most important piece of field equipment you acquire after the camera, lens and lens hood is the tripod. There are a few excellent, some good and many inferior ones.

The basic qualities of a good tripod are listed in order of importance.

1. A tripod, first and foremost, must be steady.
This implies that it will be heavier than expected. A warning — do not be talked into a light one, for it will not withstand the wind and will not safeguard your expensive equipment. Nor will it be steady! The rule is to buy the heaviest one you can carry for most outings.

2. A tripod should be versatile.
Since wildflower photography often requires shooting in unusual locations, (steep hillsides, etc.) and from a variety of perspectives, the legs of the tripod should both spread and extend to great extremes. When looking at tripods, see how low you can set the head. Also check for the length of leg extension. But remember that steadiness is the prime issue; extension is only helpful if the camera is steady.

3. A tripod should be well-machined.
This is noticed when trying to extend or shorten the legs. This should work smoothly regardless of weather conditions. The leg-lock mechanisms should be easy on the hands and large enough to be operated when you are wearing gloves. The center column should also work smoothly and be easily adjusted. Use with caution at all times to avoid potential increase in camera vibration. (This is often one of the more awkward parts of the tripod configuration.)

Tripods continued on page 6

Tripods continued from page 5

4. The tripod should provide the option of using a variety of heads.
You may want to use a different head for each type of nature photography. When considering the purchase of a tripod, see if you can remove the existing head. If you can, make sure the tripod has a standard mechanism for attaching other heads. (You can usually buy good tripods without a head and add your old favorite.) This flexibility allows you to use a single-control head for your birding scope, or a monoball or a two or three-axis head for wildflowers, birds, mammals and scenics.

You can see that there is more than meets the ground when buying a support system for your camera. Buy right, and build for the future without having to trash six or seven inferior tripods.

Some excellent tripods? Gitzo, Bogen and Bembo. All are versatile, meet the above requirements and offer a variety of heads.

I consider the Bogen 3021 tripod the best buy. It has excellent quick leg adjustments and offers low easy positioning necessary for good wildflower work. Bogen also offers a wide variety of heads. You might consider owning two models, one for wildflower work and the other for general use. Bogen also has an inexpensive shoulder strap for carrying the tripod.

Gitzo makes the tripod that most professional photographers use. It is well machined, solid, and has excellent leg extension and spread. The extension release is not as fast as that of the Bogen, and Gitzo is two to three times as expensive. But if you can afford one, it is well worth a look. Like Bogen, this company provides a wide range of heads.

The Bembo tripod without a doubt is the most versatile. It provides any combination of leg movements that you can imagine. This can be very helpful when working in difficult situations. The tripod can be set up faster than any other one on the market. It is best used with a ball head for achieving any position quickly. One important warning — never let go of the camera until the tripod is securely locked in place. When the locking device is loose, it is like trying to carry a bundle of sticks, all going in different directions. That said, this is the one I use when I am only doing wildflower work for the day.

Again, the best buy is the Bogen 3021 with a three-way pan/tilt head for overall use. (A tip — if you buy or own a Bogen, go to the hardware store with the tripod and purchase a socket and 1/4 ratchet handle for tightening the leg-adjustment lock-nuts. Keep it in your camera vest or bag.)

Shop around and create the system that works best for you. As with all quality products, consider the tripod an investment. Next time, I will address the subject of proper tripod use.

Tom Potter is a professional photographer living in Martinsville.

Book Reviews

Seed Germination: Theory and Practice
by Dr. Norman C. Deno, Penn State University

Reviewed by Dan Anderson

At a recent Master Gardener's meeting, this book was mentioned as being an excellent guide to the treatment of seeds of wild and cultivated plants to obtain maximum germination. Cost of the book was given as $20.00, postage included. I ordered one and received it in about two weeks.

Of the 240-odd pages, two-thirds were taken up with experimental results on approximately 2500 species tested. There are no long discourses on chemical reactions related to germination, and the overall approach is directed to the plant experimenter or gardener rather than to the research chemist.

Several variables were studied: storage at 40°F and 70°F and oscillating temperatures, presence or absence of light, wet vs. dry conditions, time, scarification of seed coats and the use of gibberellins (plant growth hormone.) Moist storage was accomplished by moistening a folded ScotTowel, sprinkling the seeds on one side, folding the other side over the seeds, placing in a Baggie, and folding the Baggie loosely several times, to minimize moisture loss. Several folded towels can be placed in each Baggie, but each should be marked with indelible marker pen. Each towel was removed at seven-day intervals and the number of germinated seeds counted. If any seeds began to decay, they were removed, and if decay became general, the remaining seeds were transferred to a fresh moistened towel. Dr. Deno did not feel that disinfecting the seeds to inhibit mold growth was necessary, as only dead seeds or empty seed coats appeared to be attacked.

According to the author, all seeds have one or more types of growth inhibitors which tend to prevent the seeds from germinating prematurely and which must be decomposed or removed before germination will occur. Many seeds need a period of dry storage, which varies greatly with the species. Too long a dry storage period results in non-viability. Fortunately, most common garden vegetables and annual flowers experience a high level of germination after dry storage for a period of six months. Swamp species usually require light for germination, desert species germinate best at 40°, and gibberellins seem to promote germination best in plants from environments of volcanic sand or gravel. Physical treatment, such as filing or sanding the seed appeared to be effective with nuts or seeds having extremely hard seed coats. Soaking in water did not appear to be effective, but, in some cases, rinsing was.

Lack of space prevented the author from using common names of plants, and interpretation was somewhat hindered by the author's use of the less familiar newer names of plant families instead of the more familiar older ones, e.g. *Apiaceae* for *Umbelliferae, Brassicaceae* for *Cruceriferae,* and *Asteraceae* for *Compositae.* For the researcher, the author has included a two-page list of references.

Reviews continued on page 7

Reviews continued from page 6

Overall, the book appears to be a valuable addition to the library of anyone interested in propagating wild plants from seed, and I recommend it highly for INPAWS members. The book may be ordered from Dr. Norman Deno, 139 Lenor Drive, State College, PA 16801.

The following book review was condensed from an article which appeared in The Indianapolis News *several years ago —Chris Carlson*

Plain Ol' Charlie Deam

by Robert C. Kriebel, Purdue University Press, West Lafayette, IN. Paperback, $12.95.
A biography of Charles C. Deam, the legendary turn-of-the-century Indiana botanist and author.

"Plain Ol' Charlie Deam: Pioneer Hoosier Botanist" describes Deam's meticulous scientific work as well as his down-to-earth humility, telling how he found his plants, wrote his books and lived his at-times eccentric life. The book's author is Robert C. Kriebel, editor of the Lafayette Journal and Courier.

Culled from Deam's prodigious writings and piles of letters and filled with interviews with Deam's friends and articles about him, the 200-page profile also contains 19 photos.

Charles Clemon Deam (1865-1953) endured boyhood years devoted mostly to farm work. He began his career as a druggist in Bluffton, Ind., only to later find his life's avocation - botany. Once started, he couldn't stop: he even financed his unique and valuable contributions to science from his drugstore profits. In a half century, first on foot, later by car, Deam traveled some 100,000 miles around Indiana, hunting plants and discovering 50, which some considered new to science.

Kriebel relates anecdotes about the self-taught Deam's seemingly unconventional but necessary work habits: after collecting specimens all day, he would eat a pork-and-beans supper cooked on his Coleman stove. Then he would write notes by the light of a lantern. Once the notes were written, Deam would curl up on a straw mattress in back of his Ford Model T to sleep while parked in a field somewhere. Sometimes his wife, Stella Mullins Deam, would accompany Deam on his "botanizing," as he called it.

Deam turned those late-night notes into volumes about Indiana trees, grasses, shrubs and finally, his landmark 1200-page book, "Flora of Indiana," published in 1940. His books were published with help from his many friends, his wife and Harriet Winch, his research and writing assistant.

Deam was a DePauw University dropout, but was awarded three honorary degrees: by DePauw, Wabash College and Indiana University.

The Deam mark on botany is indelible. Even the data that he and his wife collected from their Bluffton garden and arboretum are still useful to agricultural research, as are his weather records. In Jordan Hall of Indiana University at Bloomington, botany students still marvel over the 73,000-specimen Deam Herbarium and 3,000-volume library the Deams amassed.

Orchids of Indiana

Homoya, M. 1993. Indiana University Press, Bloomington, IN. 276pp. Illustrated with 95 color and 15 black-and-white photographs plus numerous maps. $34.95 clothbound.

Reviewed by Tom Potter

Mike Homoya states that he wrote this book with two goals in mind: "....to instill an interest in orchids and nature...." and to "....generate concern for and an improved performance of our earthkeeping responsibilities." He states that he tried to write a book that would appeal to both the popular audience as well as one that would be scientifically accurate. On both counts Mike receives an A+!

Orchids of Indiana contains many sections both useful and helpful. They include such topics as the history of orchidology in the state, reproduction, habitat and distribution both statewide and national. In addition, for those more technically inclined, there are numerous keys throughout the text to help with the separation of the complex orchid groups such as the *Corallorhiza.* At the beginning of each genus section, the author explains the name derivation and a brief description of the group. This explanation is followed by species accounts, each of which includes a map showing U.S. distribution, a state map indicating county records, and breathtaking photographs taken for the most part by Lee Casebere. (I consider Lee the finest wildflower photographer in the state.)

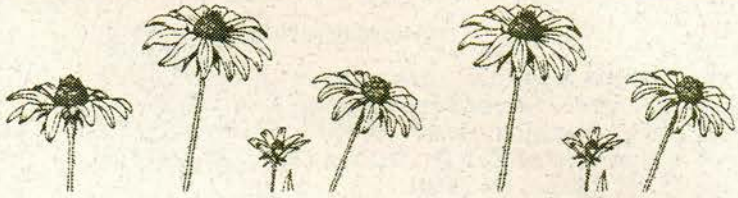
In the species accounts, Mike describes the plant, its range, habitat, and other pertinent information. The line drawings show flowering and reproductive parts in flawless detail. To aid with county locations, a full-page map of the state identifies each county.

Have you ever struggled with Latin names of plants as you try to impress your friends? Even this aspect of botany for the less informed is covered in *Appendix A.* A complete checklist gives the scientific name and a pronunciation guide for each species and also provides the common name. And since the author uses so many other plant names as he describes the habitat association, an additional appendix lists the common and scientific names of those plants as well.

Want more help? How about a readable glossary of botanical and orchid terms? See page 257. Want additional literature for reference work? Try page 263 onward for a list of one hundred and fourteen citings of literature. And of course, the complete index includes about everything in the book.

It seems to me that Mr. Homoya looked at most of the other plant books and decided to do one right. It is complete! It is hard to keep from over-praising this thoughtful (see the story of his first orchid sighting), beautifully illustrated work. When I first started reading the book, I had trouble putting it down. The style is comfortably readable and the text is clearly visible on the page. The color reproductions of Lee's outstanding photographs are perfect. Congratulations to all who had a hand in the production of this fine work, including The Indiana Academy of Science and the Indiana University Press.

The Indianapolis Greenways Project



The Indianapolis Greenways Project is "a comprehensive plan for the development of a recreational and fitness trail network linking over 100 destinations, including public land areas . . . along 14 river, stream and abandoned rail corridors in Marion County." The system will create more than 150 miles of trails to connect Marion County neighborhoods with existing parks, museums, schools and colleges, retail areas, and sports facilities. Greenways chairman Ray R. Irvin hopes to use the asphalt removed from city streets during repair and renovation to build trails 10 to 12 feet wide to accommodate pedestrian and bicycle traffic. Currently, only about 10% of the asphalt removed is able to be recycled into automobile roadways, so this would cut the costs of constructing trails and recycle more of the materials.

The plan will identify numerous areas of the corridor system as protected wildlife habitat and open space areas. Preserving the natural environment is one of the plan's most important goals, and the conservancy areas will provide an undisturbed habitat for native Indiana plant and animal species. Along the recreational sections, utilization of the extensive levy system for pathways will avoid disturbance of sensitive wildlife and wetland habitats, thereby creating functional trails that allow users to view these diverse natural environs without disrupting them.

An "adoption program" whereby groups or businesses can adopt a section is being considered. Currently, the adoption contract requires a commitment to keep the segment litter-free, to notify the appropriate parties if a problem arises, to make improvements to the area where possible, and in general to serve as a guardian for that segment.

It was recently reported that Marion County has a 20% deficit of park land per capita. As development continues to consume vast portions of what green space remains, the Indianapolis Parks & Recreation Department's chances of acquiring the lands needed to reverse the trend are diminishing. The Greenways system will conserve open space and naturally esthetic areas in our community. The major costs associated with trail development nationally have been land acquisition and engineering costs associated with more rugged terrain, something we are not faced with in this effort. The city owns the flood plain of all corridors, and along with additional land acquired through donation, easement and purchase, now owns 95% of the land needed for the Greenways Corridor project.

Over the past few years Indianapolis has made great strides toward planning the greenway corridors and trail network through Marion County. Thousands of volunteers annually have worked with the Department of Public Works, Indy Parks, and the Greenway Development Board to remove more than 700 tons of trash. There is a definite awareness and concern by our citizens for the health of our river and stream environments, and communities are taking notice of the many recreational opportunities afforded by clean river and stream corridors. This vision has been around for more than a century.

To add your name to the mailing list for the monthly *Greenways Newsletter* and other information concerning this project, or to arrange a presentation for your group or organization, write or call Ray R. Irvin, Indianapolis Greenways, 1426 W. 29th St., Indianapolis, IN 46208 (317) 924-7000 or (317) 924-7431.

Not-For-Profit Status Achieved

by Jean Vietor, Treasurer

At last INPAWS has obtained a tax-exempt status with both the Federal and State governments!

Because we are a new organization, the IRS will not make a final determination for five more years. However, they have granted us a temporary 509(a)(1) status. At the end of our "probation" period, we must submit more information so that the IRS can determine if we have met the requirements necessary to become a permanent publicly supported organization.

During this probation period, donors may deduct contributions to INPAWS as provided in section 170 of the Internal Revenue Code. Bequests, legacies, devises, transfers, or gifts to INPAWS for our use are deductible (for tax purposes) as charitable donations. You may deduct only that portion of a gift for which you receive no consideration. In other words, gifts above and beyond your Student ($10), Individual ($18) or Family ($25) membership dues may be deducted; or, if you purchased something through INPAWS, you could deduct any amount you paid above the value of the item.

INPAWS feels that it is important to provide a quality newsletter, but it is a major expense, and contributions are needed to continue providing this beautiful publication. We will, in the future, have other expenses such as a membership roster, publicity materials, and letterhead. These and other grand ideas and projects under consideration will need your support and generosity to help make them happen.

All contributions of $75 or more will be acknowledged with a written and signed receipt — a new IRS requirement as of 1994. This applies to gifts to all not-for-profit organizations, not just INPAWS. If you don't receive a receipt within a reasonable time, you should contact the organization. There is a penalty for the not-for-profit organization which does not abide by this ruling.

If you would like to make a contribution to INPAWS, please direct your gift to INPAWS, c/o Jean Vietor, Treasurer, 6911 Winona Drive, Indianapolis IN 46236. For more information, call me at (317) 823-1542.

Getting Started

Publications for the Native Plant Propagator

by Susan Nord

Frequently, it is difficult to locate commercial sources of native plants, particularly for local ecotypes of a desired species. One way to increase the availability of some native plants is through home propagation. Though becoming a good propagator does take practice and patience, there are some reference guides which can help to make the experience more rewarding. Although not written specifically for the Indiana gardener, these selected publications provide useful information and guidance in general plant propagation techniques as well as specifics on some of our natives.

An excellent guide for herbaceous plants is *Growing and Propagating Wild Flowers* by Harry R. Phillips, published by the University of North Carolina Press. It is good reading for any native plant enthusiast, especially those seeking information on growing woodland plants, and yields material on asexual and seed propagation, including seed cleaning and storage. The bulk of the book highlights specific requirements for propagation of several species native to Indiana including ferns. There are also suggestions on garden uses for wild plants.

For woody plant enthusiasts there are two handy publications. One specialized booklet is available from the University of Illinois Cooperative Extension Service entitled *Growing Illinois Trees from Seed*, Circular 1219. The booklet gives advice on seed collection, preparation, planting and subsequent care of seedlings. Information about individual species is presented in an easy-to-read chart form. The notes clearly list uses, habitats and problems associated with the trees. Though some plants listed in the circular are not native to either Illinois or Indiana, most of those mentioned are.

Another publication which is far more comprehensive, is *The Reference Manual of Woody Plant Propagation* by Michael Dirr and Charles Heuser published by Varsity Press. Those who are interested in other forms of woody plant propagation beyond seed production should consider reading this book. It literally covers all aspects of propagation "from seed to tissue culture." Though the authors have researched many plants from around the world, this guide has a great deal of information for the native plant fan. The sections on general propagation are excellent and would be most useful to anyone considering home propagation.

The key to propagation is patience and practice. For those who are beginners, start with more common plants. This will make your early success rates higher and your failures will not be so costly. Research the plant before propagation, so that you have an understanding of its likes and dislikes. Observe the habitats where it grows and prospers, and try to duplicate them in your garden to ensure future success. These books can be helpful in that study.

Sue Nord, a charter member of INPAWS, is a horticulturist and gardener at the Indianapolis Museum of Art. Her fledgling home garden is a disaster because she spends all her time at the IMA. She received BS and MS degrees from Delaware Valley College and Ohio State University, respectively.

A Historical Perspective on Roadside Vegetation

by Peter Harstad

When Thomas Lincoln brought his family (including young Abe) to Indiana in 1816, native vegetation adorned the few primitive roads that penetrated the wilderness.

By 1916, when Indiana celebrated a century of statehood, "devils' wagons" were rolling off assembly lines, not only in Detroit, but also in Indianapolis and other towns. The demand for spacious rights-of-way and smooth driving surfaces raised havoc with the remnants of native vegetation which had survived the farmers' plows and axes. Then came the demand for high-speed highways with no visual obstructions. Down came more trees, and out came mowers, and later, spraying equipment.

But there are exceptions to this tragic tale. One, of national significance, occurred in Indiana during the early days of motoring. In 1913, a group of powerful industrialists, including Carl G. Fisher of Indianapolis, attached the Emancipator's name to "The Lincoln Highway," which they promoted to become "a continuous improved highway connecting the Atlantic and the Pacific." The selected route, from New York to San Francisco, passed through Indiana along the approximate course of present U.S. Highway 30.

In 1921, leaders of the Lincoln Highway Association convinced the fledgling Indiana State Highway Department and Lake County to cooperate in the construction of an "ideal section" of highway between Dyer and Schererville, near the Illinois state line. They engaged the best highway and bridge engineers in the nation and also lured Danish-born landscape architect Jens Jensen, Chicago resident, to beautify the "ideal section."

Jensen, president of Friends of Our Native Landscape and a governing member of the Art Institute of Chicago, managed to convince those associated with the venture that "Trees, like human folks, have individual characteristics. Various kinds of trees differ.....as do shrubs and flowers." Backed by association leaders and "guided by nature," Jensen used native plants to landscape two miles of the Lincoln Highway just west of the intersection with U.S. 41.

He incorporated native plants and a footpath within the 110-foot right of way. "At one place, where the road passed through open prairie, native grasses, flowers, and an occasional cluster of Hawthorn or Crabapple were planted along the roadside. In other places, the road passed through upland prairie and groves of native Bur Oak and then crossed wood-

Perspective continued on page 10

Perspective continued from page 9

ed ravines" (Robert Grease.) Jensen, who sometimes associated with Frank Lloyd Wright, also drew up plans for a 40-acre campsite and rest area in an oak grove on the south side of the highway. Already in 1922 he envisioned rest areas at regular intervals along highways.

Jensen promised that, at home in their own environs, the plantings "will give us joy and beauty in full measure." The Lincoln Highway Association also engaged Jensen to plan a 17-acre park near the west end of the "ideal section" where a grove of ancient oaks surrounded a natural amphitheater.

A 1921 monument touting "the finest section of road in the world" still stands on the south side of U.S. 30 less than a mile west of the U.S. 41 intersection. The claim was not hyperbole, as highway experts from near and far came to inspect the "ideal section," including Jensen's landscaping. Had Jens Jensen convinced each one of them to reintroduce native vegetation following road construction, Indiana and the nation would be more attractive today.

The author, a charter member of INPAWS, is executive director of the Indiana Historical Society. Documentation for the above article may be found in the State Highway Department records for the early 1920's in the Indiana State Archives. See also Robert E. Grease, "Jens Jensen: Maker of Natural Parks and Gardens," Johns Hopkins University Press, Baltimore, 1992.

Related Coming Events

Carolee's Herb Farm, Hartford City IN has a varied schedule of wildflower, herb and garden workshops and programs from spring through mid-November. For more information or to be placed on their mailing list, contact Carolee's Herb Farm, 3305 S. Co. Rd. 100W, Hartford City IN 47348.

Native Plants in the Landscape: a conference sponsored by Millersville University, Millersville PA, June 23-25, 1994. Purposes of the conference are: increase knowledge, propagation, cultivation and use of native plants in the Mid-Atlantic region; promote methods of land management and design that respect "sense of place" by preserving and restoring native species and natural processes; engender an appreciation of regionally appropriate landscapes; and, encourage the creation of sustainable landscapes that are harmonious for people and nature. Cost for the entire conference, double occupancy, is $135. Millersville PA is about 70 miles west of Philadelphia. For more information contact Millersville University's Continuing Education Office at 717-872-3742.

Indiana Department of Natural Resources, Falls of the Ohio Interpretive Walks: Every weekend through October. Meet at the Interpretive Center lobby, 201 W. Riverside Drive, Clarksville, IN 47219 Fridays and Saturdays @ 1:00 p.m. and Sundays @ 2:00 p.m. For more information, phone 812-280-9970.

ACRES Wildflower Hike at the Bicentennial Woods: 80-acre old growth woods with a beautiful wildflower carpet. Sunday May 22, 1 p.m. ACRES is a not-for-profit organization dedicated to the preservation of natural lands in northeast Indiana. For more information, including the exact location of the hike, contact them at 2000 North Wells, Fort Wayne IN, 219-422-1004.

ACRES hikes at Ropchan Wildlife Refuge and Ropchan Memorial, including a tamarack forest: June 11 @ 10:00 a.m. Bring your own lunch. Ropchan Wildlife Refuge is in Steuben County south of Fremont on SR 827. For more information, contact ACRES (see above).

Shirley Heinze Environmental Fund Hikes: There is a fee for these hikes and enrollment is limited. For more information please contact Barbara Plampin at 219-787-9438 or Sandy Henderson at 219-879-4725.

- Saturday, May 21, 10 a.m. to 1 p.m. at Little Calumet bottom lands and slopes; see shooting stars, wild hyacinths and some of the finest riparian vegetation in the Chicago region.
- Saturday June 4, 10 a.m. to 1 p.m. Dunes area. Virtually untouched woods, open savanna and extensive wetlands support False Heather, Bird's Foot Violet, Columbine, Lupine, Wild Iris and much more.

Project Learning Tree and Project Wild: A variety of environmental events designed for educators is scheduled from now through early November. Subjects include wetlands, conservation and 4-H science workshops. Locations are all over Indiana. For more information contact WILD & PLT, 6013 Lakeside Blvd. Indianapolis IN 46278, 317-290-3223.

Illinois Native Plant Society: Annual meeting near Danville IL, May 20-22. Program includes field trips, presentations, social times, banquet and more. The drive from Indianapolis is under two hours. The Illinois folks will allow Indiana Native Plant and Wildflower Society members to attend at the same rate as their members. For more information and to make a reservation, please contact Ken Konsis, at 217-662-2142 as soon as possible.

Eastern Native Plant Alliance: Annual Meeting, Winterthur, five miles north of Wilmington DE. Dates are August 26-27. Program to include discussions and field trips. For more information, contact ENPA, P.O. Box 6101, McLean VA 22106.

INDIANA NATIVE PLANT AND WILDFLOWER SOCIETY
MEMBERSHIP APPLICATION

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

❑ Student	$10	❑ Patron	$100
❑ Individual	$18	❑ Sponsor	$250
❑ Family	$25	❑ Corporate	$500

Additional Donation $_____ *Total Enclosed* $_____

NAME _____ TELEPHONE _____

ADDRESS _____

CITY _____ STATE _____ ZIP_____

Gifts Do Help

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

Membership Categories

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

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

Please complete other side ·····►

INPAWS MEMBER SURVEY

What would you like to see as the primary focus of this group?

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

❑ Programs	❑ Special Projects	❑ Newsletter
❑ Membership	❑ Publicity/Marketing	❑ Fund Raising

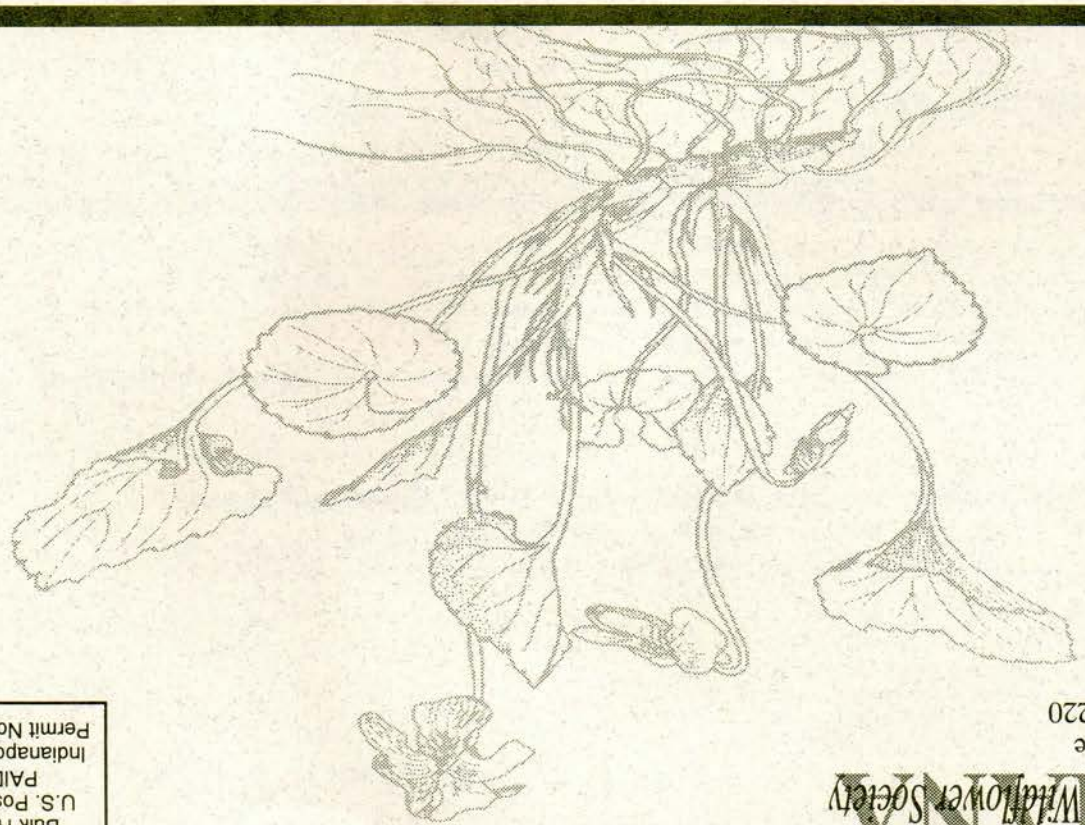
I would like to help with:

❑ Rescuing plants	❑ Leading field trips	❑ Giving tours
❑ Hospitality (refreshments)	❑ Helping with mailings	❑ Other

Comments:

Renew your membership now for 1994!

◄····· *Please complete other side*



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