



NO PLACE LIKE HOME

## The Mini-Hike Solution *Bobbi Diehl*

We all know the importance of keeping body and mind in good shape. I may not always practice what I preach, but there is one thing I can do that never fails to improve my spirits and my physical state: TAKE A HIKE!

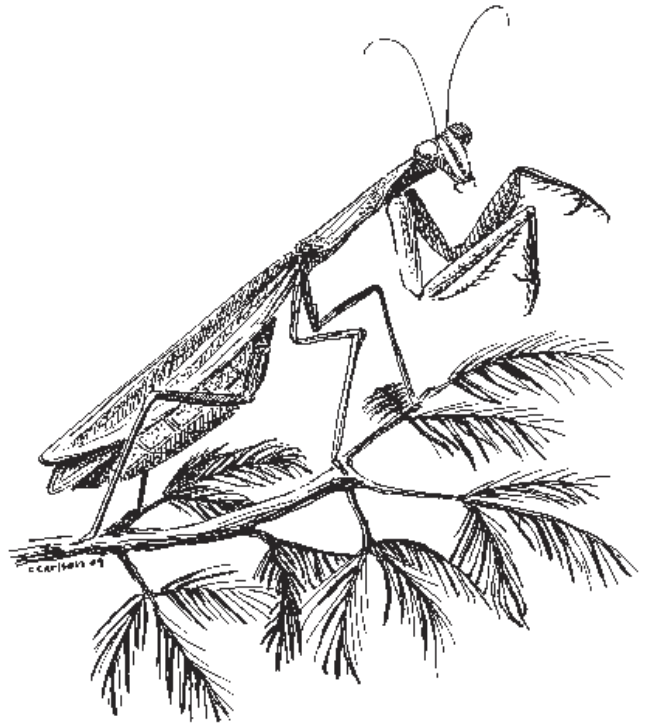
I used to think of a hike as something that required a lot of commitment and time. I would rally the troops, pack a lunch, assemble my gear—water, binoculars, field guides—don whatever clothing and footwear the weather dictated, then drive, sometimes quite a distance, to reach the desired site. Beautiful and worthwhile as it undoubtedly is, a traditional hike eats up most of your day, and who has the time for that on a regular basis? I sure didn't. After my retirement in 2002, what with various editing and writing projects I often worked harder than in the 9-to-5 days, and it was sedentary work. Hiking, like many other favorite activities, became a distant memory, something I looked forward to resuming SOMEDAY when I had a little more free time.

Then last fall I took the day off and drove up to Fishers to visit an old friend. One of my "smaller" editing projects at that time was *The Nature Conservancy's Field Guide to Indiana Preserves* (forthcoming in fall 2006 from Indiana University Press) and thanks to it I knew there was a nature preserve called Ritchey Woods in Fishers. My friend was familiar with it. After lunch at her house, we made the short drive to this 127-acre preserve, miraculously situated in the midst of

one of the fastest-growing communities in the United States, and spent an hour there.

Some claim big old trees possess magical auras or healing powers, and I certainly wouldn't argue. Wandering among the towering oaks and beeches was a tonic to my system. Thanks to that mini-hike, I literally felt rejuvenated. I vowed to find some similar natural areas in Bloomington where I could take a break and spend an hour or less exercising my out-of-shape body and refreshing my spirit.

**M**y first discovery was Latimer Woods, a tiny enclave south of College Mall with a .38-mile trail looping among ancient trees. I had seen the sign outside the fenced-in preserve and always wondered where the entrance was. Thanks to our neighborhood association, I found out: From East Third Street, take Clarizz Boulevard south to The Woods at Latimer apartments. Turn in the entrance drive, take the left fork, and proceed to the rear of the complex. Park by the dumpster and walk the gravel drive to the trailhead on the right.



Praying mantis by Chris Carlson in R.A.

From inside the preserve, the cars rushing by and the Ayres store across the street seem strangely remote. To

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INPAWS JOURNAL is published quarterly for members of the Indiana Native Plant and Wildflower Society. Material may be reprinted with the permission of the editor.

All are invited to submit articles, news items, and event postings of interest to our membership. Acceptance for publication is at the discretion of the editor. INPAWS welcomes opposing viewpoints.

Please submit text and photos via e-mail to [wwford@comcast.net](mailto:wwford@comcast.net) or via land mail to INPAWS JOURNAL, 6911 Cabernet Way, Indianapolis IN 46278. Submission deadlines for specific issues are as follows:

*Spring*  
February 23 for April 1 mailing

*Summer*  
May 23 for July 1 mailing

*Autumn*  
August 23 for October 1 mailing

*Winter*  
November 23 for January 1 mailing

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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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# Spheres of Influence

Karen Hartlep

What an incredible spring I've had—I hope you've also been able to enjoy the wonders of our native plants! I've seen the stunning shooting star display at Clegg Gardens in Lafayette and visited Yuhas Woods (twice!) to see the gorgeous and prolific trilliums (*Trillium sessile*, *T. grandiflorum*, and *T. flexipes*) and then the hyacinths a week later, thanks to the folks at the Red-Tail Conservancy and program chair Lynn Dennis. Coming up are more opportunities to visit unique sites throughout the state with INPAWS, and I hope you'll take advantage.

We've also just celebrated our best-ever Plant Sale and Auction. The May 13 event was a resounding success due to the stupendous efforts of first-year co-chairs Tom Hohman and Melissa Moran and their cadre of experienced volunteers. Thank you and congratulations to all for your plant donations and tireless efforts during the sale, and to our corporate sponsors for a wonderful array of donated items. Unfortunately for us, Melissa has accepted an exciting two-year job opportunity in Guatemala, so we are looking for another co-chair for next year. Please let me or Tom Hohman know if you're interested in this fun, fast-paced position.

I've been thinking about ways to increase and engage more of our membership. I'm proud that we're over 400 strong! But our mission is big enough to accommodate many more. I recall a marketing strategy session run years ago by my employer. Each person was asked to graphically depict his or her "spheres of influence." Most of us listed family, friends, co-workers, neighbors. Others were able to add clubs, charitable groups, other non-profits, and trade associations. When I think how limited our time is, even for our passionate interests, it seems that tapping our own spheres of influence would be a relatively painless way to "market" INPAWS membership and promote its goals.

Let me give you some examples. When neighbors walk by my yard as I'm gardening, I'm happy to give them a mini-tour and explain what's going on with the "mess" and why. Invited to a neighborhood plant exchange, I brought native plants and explained why. Though basically an introvert, I've even ventured to offer my opinions to waffling, confused strangers at nurseries! (Perhaps they were just being polite, but they seemed grateful.) So even if you don't have time to give a talk or to work the INPAWS booth at a gardening or conservation event, there are lots of ways you can promote our mission and perhaps even draw a new member or two.

I challenge each of you to bring in one new member this year, and then engage that member by bringing them to one of our hikes or lectures, or to the INPAWS Annual Conference. I hope to see even more of you at a field trip or INPAWS event in the near future....

Karen



Standing cypress (*Ipomopsis rubra*).  
©Dorothy A. Riddle, 1999.

# Orchidaceae = Orchid Family

Rebecca Dolan, PhD  
Friesner Herbarium, Butler University

Worldwide, the orchids are one of the largest families, with 735 genera and 17,000 species. Indiana has 18 genera and 42 species.

## Characteristics

Herbaceous perennials, terrestrial in Indiana. Leaves 2-ranked. Flowers often showy and colorful, but sometimes small or inconspicuous, with parts in 3's, irregular. Petals, 2 lateral and one modified into a lip. Great range of floral scents with specialist pollinators. Pollen grains clustered into waxy sacs (pollinia). Seeds tiny (1- to 2-celled embryo) and produced by the millions, often need fungal mycorrhizae to germinate.

## Economic Importance

Cultivated orchids for floral arrangements and corsages. Vanilla, from fermented and cured fruit.

## Some Indiana Orchids

*Aplectrum hyemale*—Puttyroot orchid

*Cypripedium*—Lady's slippers or moccasin flowers

*Spiranthes*—Ladies-tresses

*Platanthera*—Fringed and fringed orchids

It is often said that more orchids are native to Indiana than to Hawaii. Our orchids live rooted in the ground and tend to have smaller flowers than tropical orchids, but they are just as beautiful. A few bloom before or after leaves are present and look like parasitic plants, with pinkish inflorescences. Orchids are known for having periods of dormancy that can last for several years, during which they do not appear above ground.

The best source of information on Indiana's orchids is Mike Homoya's wonderful book, *Orchids of Indiana*, published in 1993 by the Indiana Academy of Science (ISBN 9-253-32864-0). Recently, the South Central chapter listserv has seen a lot of e-mail chatter on where to see orchids blooming in the Brown County area.



Puttyroot orchid.



Moccasin flower.

USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. Illustrated flora of the northern states and Canada. Vol. 1: 550.

# Plum-Purple Prose?

Barbara E. Plampin, PhD  
Shirley Heinze Land Trust

Plant detectives do stop to smell the roses. Near me, black oak savanna slopes surround two bowls, the smaller open with lupine (*Lupinus perennis occidentalis*) and butterfly weed (*Asclepias tuberosa*), the larger more diverse with a mosaic of flat black oak savanna, small mesic prairies, swales, wooded ecotones, and grassy buttonbush (*Cephalanthus occidentalis*) marshes interrupted by numerous sandy spits.

As the seasons unfold, plant performers include sand cress (*Arabis lyrata*) and bird's foot violet (*Viola pedata lineariloba*), Quaker ladies (*Houstonia caerulea*) and yellow star grass (*Hypoxis hirsuta*), prairie (wood) lily (*Lilium philadelphicum*), wild white indigo (*Baptisia leucantha*), blue-eyed grass (*Sisyrinchium angustifolium*), goat's rue (*Tephrosia virginiana*), large-leaved shin leaf (*Pyrola elliptica*), marsh blazing star (*Liatris spicata*), clammy false foxglove (*Aureolaria pedicularia ambigens*), meadow beauty (*Rhexia virginica*), showy goldenrod (*Solidago speciosa*) and hundreds more. The show doesn't conclude with late fall soapwort gentians (*Gentiana saponaria*) because Michigan holly (*Ilex verticillata*) berries persist into winter.

Real drama occurs on sunny, mid-May days when the sand spit edges erupt with long, sometimes hundred-foot lines of royal, a.k.a. painted fern (*Osmunda regalis*). Fern fans know that a panicle of fertile pinnae tops the frond. That eighteenth-century French seed peddler's picture of a frond culminating in blue, yellow-centered flowers lied (a practice not unknown in our enlightened times). As the fronds can reach five feet, the royal part is true. (*Osmunda* supposedly derives from Osmunder, the Anglo-Saxon name for the god Thor.)

"Painted?" Complex patterns of unfurling fronds stretch into the distance like multi-colored wave crests, challenging the artist. That drift is pea green, this one red plum, another burnt orange, another bronze, yet another grey-green. Maybe this one's mahogany? Back-lit by spring sun, the translucent fronds seem almost afire. When passing clouds give the colors a matte finish, the artist must reach again for the paintbox. Just what are those colors, anyway?

Up close, each frond varies still more. Most colors aren't solid, rachis and stipes tending to red green (some say pink) diffusing into the contrasting hue of the frond. Fortunately, royal fern can be enjoyed in many Indiana counties; it also grows well in gardens.

*Note:* This article depicts the Indiana Dunes National Lakeshore's Lupine Prairie. Through open to the public, it's hard enough to reach that people living outside the Dunes should call 219-926-7561 for directions. The picture of the blue-flowered royal fern used to hang in the office of Noel B. Pavlovic, Lake Michigan Ecological Research Station, U.S.G.S., Porter, Indiana.

## Some Books

Deam, C.C. 1984. Flora of Indiana. Hirschberg, Germany: J. Cramer. Reprint of 1940 edition.

Lellinger, D.B. 1985. A Field Manual of the Ferns and Fern-Allies of the United States and Canada. Washington, D.C.: Smithsonian Institution Press.

Swink, F. & G. Wilhelm. 1994. Plants of the Chicago Region. Fourth Edition. Indianapolis: Indiana Academy of Science.



Royal fern (*Osmunda regalis*). Photo by Missouri Botanic Garden.

# An Alternative Dogwood

Marion T. Jackson, PhD  
Professor Emeritus of Ecology  
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## *Cornus alternifolia* L.

When dogwood is mentioned almost everyone thinks of the showy flowering dogwood, *Cornus florida*, with its dazzling white bracted flowers in April and its beautiful leaves and scarlet fruits in October. But the rarer species, *Cornus alternifolia*, the only member of the genus to have alternately arranged leaves, can be equally distinctive.



The tiered effect of *C. alternifolia* is the source of one of its many common names, pagoda dogwood. Photo courtesy of Nebraska Statewide Arboretum.

Ten species of dogwoods have been reported for Indiana, but only *C. florida* and *C. alternifolia* reach small tree size here. The remainder are shrubs. Deam, in his *Trees of Indiana* (1940), listed the largest flowering dogwood tree that he had seen in Indiana at 40 inches circumference, with a clear bole of 10 feet. A number of dogwood trees in the 6-inch size class (4-8 inches diameter), have been measured in my forest inventories over the years, with a maximum of 10.6 inches dbh encountered in Ripley County. Alternate-leaved dogwoods only rarely reach tree size, but specimens of 6-8 inches dbh, and 20-30 feet in total height, are on record.

Both tree-sized dogwoods have heavy, close-grained wood, with flowering dogwood at 49.9 pounds per cubic foot, second only to osage—orange in wood density among Indiana trees. *Cornus alternifolia* wood is considerably lighter at 41.7 pounds per cubic foot. Neither tree is large enough for commercial use today, but flowering dogwood was once favored for thread spools, weaving shuttles, golf club heads, pulley sheaves, tool handles, and turnery. The generic name *Cornus*, meaning horn, refers to the hard, smooth nature of the wood.

Alternate-leaved dogwood is also known as pagoda dogwood (from the progressively shorter tiers of its branches), blue dogwood (from its deep blue fruits), green osier dogwood (from its bright green branches early, to dark green, then red, with flecked lenticels, later), and pigeon berry (presumably from the use of the fruits by passenger pigeons for food in pioneer days).



Indigo berries follow delicate creamy flowers. Photo by Paul Wray, Iowa State University, [www.forestryimages.org](http://www.forestryimages.org).

Found in a range of habitats from rich, moist calcareous upland woods, to springy slopes, to swamp-margins, pagoda dogwood derives much of its charm from its relative rarity, but its ornamental qualities commend it as well: a somewhat Oriental (pagoda) growth form; ethereal delicate cream-colored flowers; pointed leaves with impressed, candelabra veins; bright green branches early on; and indigo berries on red branchlets in autumn.

Although fairly widespread in Indiana, except for the prairie margin and southwestern counties, you do not “plan to find” alternate-leaved dogwood on a given field outing. Instead, you “happen to encounter it,” often when you least expect it to be there. Attractive in all seasons, once you discover it, those locations are etched into your long-term memory, much as are the sightings of rare birds, or those of wild predatory mammals.

As an example, when hiking a woodland trail earlier this May during the Byron Fellowship Retreat at the Fellowship of Christian Athletes Conference Center in Parke County, there at the base of a large plashy waterfall were two lovely pagoda dogwoods in new leaf, and with sparkling

corymbs of four-parted, creamy flowers gleaming in the spring sunlight, appropriately accenting the beauty of the freshet!

Alternate-leaved dogwood is becoming a more popular ornamental, and rightfully so. It graces any lawn, grounds, or park in all seasons. A yellow-fruited variety (*f. ochrocarpa* Rehd.) enjoys wider usage than the typical blue-fruited form, but either is equally handsome in the proper landscape setting. One problem in ornamental use is its lack of availability from many nurseries.

Search as I might, I was unable to learn why the genus *Cornus* has the common name of “dogwood.” Perhaps it is because “you can tell the trees by their bark”—bad pun intended! But I did discover that powdered dogwood bark was sometimes used as a dentifrice by the pioneers, and also as a quinine substitute for treating malaria.

## Mini-Hikes, continued from page 1

the south and west is a buffer zone of old fields bordered by more busy streets.

Attractive signs along the circular nature trail tell the history of the Latimers' farm and their beloved woods, which they donated to the city when most of their acreage was sold to become College Mall. It boasts some huge, old tulip poplars, cherries, and other trees. A creek runs through the lower (northern) edge, and I've seen a pileated woodpecker perched high in the treetops. The pawpaw trees were in bloom in late April. Spicebushes were blooming in early March. A visit to Latimer in early winter is good too. *Euonymus* unfortunately infests the preserve, and if you go, please feel free to remove some.

Winslow Woods Park, 2120 S. Highland Avenue, is another good venue for a mini-hike. The park entrance on the west side of the street is just before the entrance to Bloomington's YMCA, on the east side, if you're driving north. I learned about this one from a brief reference in the local newspaper. It is a gorgeous preserve with mature old trees and some sinkholes. The .74-mile trail is well maintained. On a late April trip, we saw many prairie trillium and dwarf larkspurs in bloom, as well as puttyroot orchids not blooming yet. This park also has a slight *euonymus* problem. We disposed of a goodly amount of it, uprooting it easily from the moist soil and placing it in a waste can next to the parking lot.

City of Bloomington Parks and Recreation maintains these little gems and a number of others. There are also some private preserves in town. I'll be checking these out for a possible future article whenever I can spare an hour or so. Wherever you are, in whatever corner of Indiana, why not consider doing the same and letting us know about your finds?

# Christmas Carols and Baseball Bats

Dan Shaver  
The Nature Conservancy

Certain songs and familiar sounds stir our deepest emotions. The opening line from Nat King Cole's "The Christmas Song" is one such phrase. "Chestnuts roasting on an open fire" evokes warmth, comfort, and safety even though most of us have never seen an American chestnut tree or roasted chestnuts.

The American chestnut tree (*Castanea dentata*) was once pervasive in the great eastern forest, from Maine to Florida and from North Carolina to Western Tennessee. In Indiana, the American chestnut followed sandstone-based soils up from the Ohio River into the Brown County Hills area. Native wildlife, from passenger pigeons to black bears, feasted on the abundant crop of nutritious chestnuts. Before 1900, people depended on the tree for nuts, livestock forage, tannin, and just about every imaginable wood product. The wood of American chestnut is straight-grained, light, easily worked, and as rot resistant as redwood.

In a period of only 40 years, this majestic tree was wiped out across its entire range by the chestnut blight (*Cryphonectria parasitica*). The fungus entered the United States on Asian nursery stock imported to New York around 1900. It spread by wind, rain, birds, and other animals, including people. Once it entered American chestnut trees through cracks in the bark, the fungus quickly killed them, typically within one growing season. By 1940 the American chestnut was devastated. A few American chestnuts and stump sprouts from trees killed 60–80 years ago still persist in the understory of some eastern forests, but for our generation, roasting chestnuts on an open fire is nothing but a comforting phrase.

Another exhilarating sound is the "crack" of a baseball against a wooden bat. This sound is familiar even to people who could care less about baseball. The most popular wood for making baseball bats is white ash (*Fraxinus americana*). White ash is light, durable, and strong—qualities that are important not only for baseball bats, but for internal furniture parts, cabinets, clothes pins, and a multitude of other wood products.

Right now, all ash species are facing the same fate as the American chestnut. A wood-boring beetle from Asia, the

Emerald Ash Borer (EAB) (*Agrilus planipennis*) came into the US about 10 years ago on solid wood packing material. Since that time it has spread across Michigan, Canada, Ohio, and Indiana. The EAB appears to kill all members of the ash family, since none of our native ashes have any built-in resistance. Worse still, many of the beetles' predators, parasites, and diseases that keep EAB populations low in Asia are not present in North America. Recent efforts to remove and destroy all ash trees in a one-half mile radius around known infestations have proven ineffective. There are still efforts to quarantine areas to slow the spread of the beetle, but over time the dusty purple shades of ash trees in fall may disappear from the Indiana landscape.

This doesn't mean we must give up hope for ash trees or the American chestnut. Efforts are underway to collect ash tree genetic material, establish seed banks, and develop EAB-resistant ash seedlings for the future.

Researchers continue to search for pesticides that may help protect some of the native ash trees. When the chestnut blight ripped across the eastern US, the technology was not available to capture genetic material or seed bank samples. However, The American Chestnut Foundation has been working diligently for the past twenty-one years to breed a blight-resistant American chestnut. Within the next few years, a highly blight-resistant American chestnut will be available to plant. It will be fifteen-sixteenths American chestnut and one-sixteenth Chinese chestnut. The tree will have the form, grandeur, and mast production of an American chestnut with the blight-resistance of a Chinese chestnut.

Hopefully, in time, American chestnut will grace Indiana's hillsides with showy white blossoms in spring and abundant mast for wildlife. With luck, ash trees will never completely disappear from Indiana. But what species is next? We all need to do our part to control the spread of invasive species. The songs and sounds of our history depend on it.

*Note:* This article appeared in the Spring 2006 issue of *The Woodland Steward*, a free quarterly publication promoting the wise use of forest resources, circulated to about 35,000 woodland owners in Indiana. For more about woodland conservation, visit [www.inwoodlands.org](http://www.inwoodlands.org).





## A RARE FIND

# Short's Goldenrod Identified in Blue River Watershed

Indiana has approximately twenty-five native species of goldenrod, ranging from the extremely common tall goldenrod to the rare stout-ragged goldenrod. None is as rare, though, as one discovered in southern Indiana in the summer of 2001.

In a cooperative project with The Nature Conservancy, ecologists with the Indiana Department of Natural Resources Division of Nature Preserves had been conducting a botanical and natural area inventory within the watershed of the Blue River in Harrison, Crawford, and Washington counties.

That August, DNR's Michael Homoya, Brian Abrell, and Amy Akin were surveying areas bordering the Blue River within Harrison-Crawford State Forest and encountered a species of goldenrod that looked strangely familiar—familiar, because six years earlier Homoya and Abrell had seen the goldenrod when they participated in an effort to re-establish Short's goldenrod (*Solidago shortii*) at the Falls of the Ohio State Park. The seven clumps planted at the Falls died within a year because of flooding, but the ecologists retained the memory of their appearance.

Their first reaction upon seeing the familiar goldenrod at the new site was cautious elation sprinkled with a dose of disbelief. A careful inspection of the plants, and the realization that the habitat resembled that of the pre-flood Falls, clinched the case that they had found one of the rarest plants on the globe. The new Indiana site harbored one of only two known living wild populations on earth!

Short's goldenrod (*Solidago shortii*) is named after its discoverer, Dr. Charles Short of Louisville. He found it in 1840 growing on a limestone outcrop in Kentucky known as Rock Island, located within the Falls of the Ohio (River) between Clarksville, Indiana, and Louisville.

Short's goldenrod was last collected from Rock Island in 1860, although it might still have been there until the island was greatly altered by the construction of locks and dams at the Falls in the early 1900s. It was considered extinct until the pre-eminent ecologist E. Lucy Braun found a population in 1939 in the Blue Lick Springs area of eastern Kentucky.

The two locations in Kentucky known to harbor Short's goldenrod were connected prior to 1800 by a buffalo trace, and it has been speculated that bison transported goldenrod seed from one locality to the other. Interestingly, the same buffalo trace extended into Indiana and crossed the Blue River. Short's goldenrod is a federally listed endangered species, one of only two plant species with such status occurring in Indiana.



One of only two known living wild populations of *Solidago shortii* on earth. Photo by Mike Homoya, courtesy of IDNR.

# The Faster to Master

## A Primer on Recent Nomenclatural Changes in Indiana Asters

*Note:* George Yatskievych originally wrote this article about the Missouri asters. It appeared in *Missouriensis*, the journal of the Missouri Native Plant Society. At INPAWS' request, Kay Yatskievych adapted the article for the Indiana asters.

**M**odern plant systematists are botanical genealogists. Their work is often expressed as cladistic phylogenies (cladograms), which are branched diagrams that detail the relationships among taxonomic groups as lineages derived from hypothetical ancestors. The concept of a "natural" taxonomic group has come to mean a hypothesis that two or more taxa directly share a common ancestry. The tools used to develop these phylogenies are broad and often involve some combination of data from morphological, anatomical, cytological, phytochemical, and molecular studies.

Phylogenetic systematists tend to operate under a set of basic assumptions that may not be intuitive to those outside the field. The technical term for a phylogenetically "natural group" is "monophyletic," which means that a given lineage is discrete and ultimately can be traced back to a single originating branchpoint. A taxonomic group (such as a genus) that can be shown to have been derived directly as a specialized portion within some other lineage renders that lineage "paraphyletic" and should be reclass-

sified as a subgroup of that lineage (or the whole thing should be split up into a series of discrete monophyletic groups). Taxonomic groups that include members of two or more distantly related lineages are categorized as "polyphyletic" and are not tolerated.

In large taxonomic groups like the Asteraceae, the basic units (tribes, genera, and species) may be more or less recognizable morphologically based upon one or several unusual features. The relationships between these basic units has been a major focus of many recent systematic studies, and the number of tribes, genera, and species accepted in a classification often has been modified

from traditional limits because new data have defined novel monophyletic groups.

**I**n the Asteraceae, the recent trend is to split many of the larger traditional genera into series of smaller genera. This usually has come about because phylogenetic studies have resulted in a different understanding of the relationships between groups of closely related species. In many



*Aster undulatus*. USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *Illustrated flora of the northern states and Canada*. Vol. 3: 416.

# the Aster Disaster...

George & Kay Yatskievych  
Missouri Botanical Garden

cases in a given tribe, some species within Genus A may be more closely related to some species within Genus B than to other species within Genus A. For the larger genera having broad distributions on several continents, these relationships may not be evident if only the species in a regional flora are studied, but can become clearer when the entire genus across its whole provenance is analyzed for patterns of variation. Thus, in recent years, traditional genera of Asteraceae, such as *Cacalia*, *Senecio*, *Eupatorium*, *Gnaphalium*, *Solidago*, and *Aster*, have been dismembered by systematists into smaller putatively monophyletic units.

Perhaps none of these genera has received more taxonomic attention than *Aster*. When Deam's *Flora of Indiana* (1940) was published, most botanists considered it a taxonomically difficult genus of nearly 450 species distributed widely in temperate and montane regions of the world. Today, the situation is quite different, with all but one of the ca. 180 species remaining in the genus native to Europe and Asia. In the *Flora of North America* region, the native circumboreal *A. alpinus* L. (alpine aster) occurs from Alaska southward through the Rocky Mountains to Wyoming (and also in far northern Europe and Asia), and the non-native *A. tataricus* L. f. (Tatarian aster, a Eurasian native) escapes sporadically from cultivation in gardens.

The changes in generic delimitation of *Aster* have been developing for a long time. In the early 1970s, Bernard Boivin (1971–1972) of the University of Laval (Canada) was the first to recognize that the white upland aster (*A. ptarmicoides*) was

more closely related to the species of the *Oligoneuron* group of goldenrods (*Solidago*) than to the other species of *Aster*. In the late 1970s, John Semple at the University of Waterloo (Canada) and his colleagues began developing new cytological and morphological data to support a narrower circumscription of the genus (see Semple et al. [2002] for a review). The revised classification began to stabilize with the thorough taxonomic and phylogenetic analysis of the group throughout its range by Guy Nesom (1994), then at the University of Texas–Austin. More recent analyses by Nesom (reviewed in Nesom [2000]) and Semple (reviewed in Semple et al. [2002]) have continued to support the hypothesis of a narrower generic concept of *Aster*. Ongoing molecular phylogenetic research (Noyes and Rieseberg 1999; Semple et al. 2002) also has supported this general reclassification of the *Aster* group while fine-tuning the numbers and limits of the various smaller genera.

It is beyond the scope of this article to detail the research supporting the current classification of the tribe Astereae. It is sufficient to note that Nesom (1994) and Noyes and Rieseberg (1999), using independent data sets, arrived at the conclusion that there was a basic phylogenetic branch toward the base of the group's evolutionary tree between Old World and New World lineages. As the generic name *Aster* originally was described based on Eurasian plants, if the New World group represents a different lineage it can no longer be classified under the name *Aster*. Within the New World lineage of Asteraceae tribe Astereae subtribe Asterinae, Nesom (1994) and later authors have arrived at a classification

that includes about fourteen currently accepted genera, a few of which are still controversial in their circumscription. The justifications for maintaining each of these genera are discussed in Nesom's (2000) excellent review of the North and Central American genera of the tribe Astereae. These nomenclatural revisions are reflected in the three recently published volumes of the Asteraceae in the *Flora of North America* series (see book announcement on page 12).

For Indiana, the practical consequence of this generic revision is that the native species that earlier went by the name of *Aster* are distributed among six genera. The largest of these (and the largest segregate in North America) is *Symphotrichum*, which includes the most species of Indiana asters. The other genera accommodate asters that were separated toward the beginning of the keys to species determination in all of the floristic literature used by students of the state's flora until the present time. Thus, learning the new system will not be a difficult chore for most Indiana botanists once they accept the sad fact of the dismemberment of a genus that traditionally has been readily recognizable in the field and herbarium.

The revised nomenclature of the Indiana asters is listed on pages 12–13. Genus and species names are shown in bold type, with synonyms italicized and indented below.

It should be noted that four species have been reported as new to the state since Deam's (1940) flora was published. A few of the species are listed under different species epithets than in the older literature,

following more recent species-level taxonomic investigations by asterologists. Synonymy in the list is mostly restricted to the names used by Deam (1940) and K. Yatskievych (2000). References to these publications and the taxon number assigned to them follow the synonyms. Intraspecific classification within the accepted species is beyond the scope of the present article and is omitted except where necessary to make the synonymy clear. Within *Solidago*, only the single species and hybrid that were previously reported as *Aster* are listed.

## Special Price

### on Newly Released Asteraceae References

The three volumes of the Asteraceae in the **Flora of North America** series are now in print, and a special publication price is in effect until August 31.

Each of the volumes is priced at \$76.00 (\$95.00 after August). To take advantage of this offer, visit [www.FNA.org](http://www.FNA.org) and click on Purchase the Volumes in the list under The Flora.

The Asteraceae are the largest family in the **Flora of North America** area and the only one that will require three volumes. The family includes 2,413 species in 418 genera.

These volumes bring the total number published to twelve. Plans are to publish three volumes per year over the next six years, which will finish the thirty-volume series in 2011.

# Current Nomenclatural Status of the Indiana Asters

- Aster** L. —Ca. 180 species; North America (1 native taxon), Europe, Asia.  
**Aster tataricus** L.f. (Tatarian aster). [New record, collected by Steve Dunbar, 4 Oct 2001].
- Doellingeria** Nees —3 species; U.S., Canada.  
**Doellingeria umbellata** (Mill.) Nees (Flat-topped white aster).  
*Aster umbellatus* Mill. [Deam 1940:2063; K. Yatskievych 2000:1280]
- Eurybia** (Cass.) S.F. Gray —Ca. 28 species; U.S., Canada, Europe, Asia.  
**Eurybia furcata** (E.S. Burgess) G.L. Nesom (Forked aster)  
*Aster furcatus* E.S. Burgess [Deam 1940:2034; K. Yatskievych 2000:1283]  
**Eurybia macrophylla** (L.) Cass. (Big-leaved aster).  
*Aster macrophyllus* L. [Deam 1940:2033, plus 3 unnumbered vars.; K. Yatskievych 2000:1285]  
**Eurybia schreberi** (Nees) Nees (Schreber's aster)  
*Aster schreberi* Nees [Homoya 1995; K. Yatskievych 2000:1284]
- Ionactis** Greene —Ca. 5 species; U.S., Canada.  
**Ionactis linariifolius** (L.) Greene (Stiff-leaved aster, Flax-leaved aster)  
*Aster linariifolius* L. [Deam 1940:2056; K. Yatskievych 2000:1276]
- Sericocarpus** Nees—5 species; U.S., Canada.  
**Sericocarpus linifolius** (L.) B.S.P. (Narrow-leaved aster) [Deam 1940:2076]  
*Aster solidagineus* Michx. [K. Yatskievych 2000:1282]
- Solidago** L. —About 100 species; North America, South America, Europe, Asia.  
**Solidago xbernardii** Boivin (*S. ptarmicoides* x *S. riddellii*) [K. Yatskievych 2000:1234]  
*Aster xlutescens* (Lindl.) Torrey & A. Gray, misapplied [Swink and Wilhelm 1994]  
**Solidago ptarmicoides** (Torr. & A. Gray) B. Boivin (Prairie goldenrod) [K. Yatskievych 2000:1234]  
*Aster ptarmicoides* Torr. & A. Gray [Deam 1940:2064]
- Symphotrichum** Nees —Ca. 90 species; North America to South America.  
**Symphotrichum xamethystinum** (Nutt.) G.L. Nesom (*S. ericoides* x *S. novae-angliae*) [Deam 1940, excluded no. 625]  
*Aster xamethystinus* Nutt. [K. Yatskievych 2000:1278, 1287]  
**Symphotrichum boreale** (Torr. & Gray) Á. Löve & D. Löve (Rushlike American-aster)  
*Aster junceus* Aiton [Deam 1940:2052]  
*Aster borealis* (Torr. & A. Gray) Prov. [K. Yatskievych 2000:1281]  
**Symphotrichum ciliatum** (Ledeb.) G.L. Nesom (Rayless American-aster)  
*Aster angustus* (Lindl.) T. & G. [Deam 1940: excluded no. 626]  
*Aster brachyactis* S.F. Blake [K. Yatskievych 2000:1295]  
**Symphotrichum cordifolium** (L.) G.L. Nesom (Blue heart-leaved American-aster)  
*Aster cordifolius* L. [Deam 1940:2037; K. Yatskievych 2000:1303]  
*Aster lowrieanus* T.C. Porter [Deam 1940, excluded no. 630]  
*Aster sagittifolius* Wedem. ex Willd. [Deam 1940:2038]  
**Symphotrichum drummondii** (Lindl. ex Hook.) G.L. Nesom (Drummond's American-aster)  
*Aster drummondii* Lindl. ex Hook. [Deam 1940:2040; K. Yatskievych 2000:1304]  
**Symphotrichum dumosum** (L.) G.L. Nesom (Rice-button American-aster)  
*Aster dumosus* L. [Deam 1940:2067; K. Yatskievych 2000:1292]  
**Symphotrichum ericoides** (L.) G.L. Nesom (Heath-leaved American-aster)  
*Aster ericoides* L. [Deam 1940:2059; K. Yatskievych 2000:1287]  
*Aster exiguus* (Fernald) Rydb. [Deam 1940:2058]  
**Symphotrichum firmum** (Nees) G.L. Nesom (Glossy-leaved American-aster)  
*Aster lucidulus* (A. Gray.) Wiegand [Deam 1940:2045, plus 1 unnumbered form]  
*Aster puniceus* L. var. *firmus* (Nees) Torr. & A. Gray [K. Yatskievych 2000:1296]

**Symphotrichum laeve** (L.) Á. Löve & D. Löve (Smooth American-aster)  
*Aster laevis* L. [Deam 1940:2047, plus 1 unnumbered var.; K. Yatskievych 2000:1297]

**Symphotrichum lanceolatum** (Willd.) G.L. Nesom (Panicked American-aster)  
*Aster interior* Wieg. [Deam 1940:2055]  
*Aster paniculatus* Lam. [Deam 1940:2053, 2054]  
*Aster lanceolatus* Willd. [K. Yatskievych 2000:1293]

**Symphotrichum lateriflorum** (L.) Á. Löve & D. Löve (Calico American-aster)  
*Aster lateriflorus* (L.) Britton [Deam 1940:2065 and 2066, excluded no. 629, 635, and 636; K. Yatskievych 2000:1289]

**Symphotrichum novae-angliae** (L.) G.L. Nesom (New England American-aster)  
*Aster novae-angliae* L. [Deam 1940:2042, plus 1 unnumbered form; K. Yatskievych 2000:1278]

**Symphotrichum oblongifolium** (Nutt.) G.L. Nesom (Aromatic American-aster)  
*Aster oblongifolius* Nutt. [Deam 1940:2044, 2045; K. Yatskievych 2000:1279]

**Symphotrichum ontarionis** (Wiegand) G.L. Nesom (Ontario American-aster)  
*Aster missouriensis* Britton [Deam 1940: 2062, plus 1 unnumbered var.]  
*Aster ontarionis* Wiegand [K. Yatskievych 2000:1288]

**Symphotrichum oolentangiense** (Riddell) G.L. Nesom (Sky-blue American-aster, Azure American-aster)  
*Aster azureus* Lindl. ex Hook. [Deam 1940:2035]  
*Aster oolentangiensis* Riddell [K. Yatskievych 2000:1301]

**Symphotrichum patens** (Aiton) G.L. Nesom (Spreading American-aster)  
*Aster patens* Aiton [Deam 1940:2043; K. Yatskievych 2000:1299]

**Symphotrichum phlogifolium** (Muhl. ex Willd.) G.L. Nesom (Phlox-leaved American-aster)  
*Aster patens* var. *phlogifolius* Nees [Deam et al. 1947; K. Yatskievych 2000:1299]

**Symphotrichum pilosum** (Willd.) G.L. Nesom (Hairy American-aster)  
*Aster pilosus* Willd. [Deam 1940:2061, plus 3 unnumbered vars. and 1 unnumbered form; K. Yatskievych 2000:1286]  
*Aster polyphyllus* Willd. [Deam 1940, excluded no. 633]

**Symphotrichum praealtum** (Poir.) G.L. Nesom (Willow-leaved American-aster)  
*Aster praealtus* Poir. [Deam 1940:2050, 2051, plus 1 unnumbered var.; K. Yatskievych 2000: 1291]

**Symphotrichum prenanthoides** (Muhl. ex Willd.) G.L. Nesom (Zigzag American-aster)  
*Aster prenanthoides* Muhl. [Deam 1940:2046; K. Yatskievych 2000:1298]

**Symphotrichum puniceum** (L.) Á. Löve & D. Löve (Purple-stemmed American-aster)  
*Aster puniceus* L. [Deam 1940:2057, plus 2 unnumbered vars.; K. Yatskievych 2000:1296]  
*Aster longifolius* Lam. [Deam 1940:2048]

**Symphotrichum racemosum** (Elliott) G.L. Nesom (Small white American-aster)  
*A. vimineus* Lam., misapplied [Deam 1940:2068, plus 1 unnumbered var. and excluded no. 638]  
*Aster fragilis* Willd. [K. Yatskievych 2000:1290]

**Symphotrichum sericeum** (Vent.) G.L. Nesom (Silky American-aster)  
*Aster sericeus* Vent. [Deam 1940:2060; K. Yatskievych 2000:1277]

**Symphotrichum shortii** (Lindl. ex Hooker) G.L. Nesom (Short's American-aster)  
*Aster shortii* Lindl. [Deam 1940:2036; K. Yatskievych 2000:1300]

**Symphotrichum subulatum** (Michx.) G.L. Nesom (Expressway American-aster)  
*Aster subulatus* Michx. [Swink and Wilhelm 1994; K. Yatskievych 2000:1294]

**Symphotrichum undulatum** (L.) G.L. Nesom (Wavy-leaved American-aster)  
*Aster undulatus* L. [Deam 1940:2041; K. Yatskievych 2000:1302]

**Symphotrichum urophyllum** (Lindl. ex DC.) G.L. Nesom (Arrow-leaved American-aster)  
*Aster sagittifolius* Wedem. ex Willd., misapplied [Deam 1940:2039]  
*Aster urophyllum* Lindl. ex DC. [K. Yatskievych 2000:1305]

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## INPAWS Plant Sale & Auction a Huge Success

Which is better for a plant sale—sunny weather to draw people outside, or rainy weather so they can't work in their gardens? The answer eluded us on May 13, but rain certainly didn't dampen spirits for the 2006 INPAWS Plant Sale & Auction.

A great supply of plants and a large crowd led to a very successful sale. As usual, INPAWS volunteers brought plants dug from their gardens and from plant rescues, and nurseries and landscape contractors donated native plants, shrubs, and trees. Although revenue figures are not yet final, the sale appears to have broken all previous records for the annual event.

New this year was the inclusion of a book sale, with books devoted to wildflowers, gardening, and general nature topics. Another new wrinkle which undoubtedly added to the success was the ability to accept credit cards. Both of these initiatives were made possible by the generous help of The Game Preserve and INPAWS member Kit Newkirk.

If anyone ever doubted the importance of INPAWS volunteers to the success of the sale, one merely had to view the Saturday preparations for the 10:00 am sale. The sale room appeared to be in good shape by 9:00, but the appearance of two large nursery donations plus the arrival of additional rescue plants brought the room into apparent chaos. However, a closer look showed the volunteers busily making order of the chaos, and by 9:20 the room was again ready for the start of the sale.

With the large supply of donated plants, the bigger space that the Indiana School for the Blind offered was greatly appreciated. The biggest problem appeared to be a shortage of parking spaces, leading some customers to park at the side of the roads

and requiring sale volunteers to direct traffic to outlying parking areas. As far as problems go, this was a pleasant one to have.

One of the most impressive aspects of the plant sale was the volunteerism and hard work by so many INPAWS members and friends. The work to transplant and pot the more than 1,400 donated plants alone was amazing. Calculating that each plant takes 5 to 10 minutes to dig up and pot, this means that somewhere between 120 and 240 volunteer hours were invested before the plants even arrived at the sale! Not to mention the many hands-on-deck during the sale to assist shoppers, conduct the auction, and help with checkout. A great and dedicated team helped with setup and clean-up this year; we would have been there for quite some time were it not for the commitment of so many.

Many thanks to those who donated plants and volunteered their time, enthusiasm, and knowledge of Indiana's native plants to make the sale a success. It was truly amazing to see the many-faceted skills of INPAWS members at work!

—*Tom Hohman and Melissa Moran*  
*Co-chairs, 2006 Plant Sale & Auction*

## Plant Sale Volunteers and Donors

Sophia & Dan Anderson, Cheryl & Andy Andrews, Julie Beihold, Brenda Bodkin, Chris Brewer, Linda Bullard, Laura Corry, Hilary Cox, Lynn Dennis, Kevin Dogan, Joe Eberts, Wendy Ford, Diane Green, Janice Gustafero, Marian Harcourt, Virginia Harmon, Karen Hartlep, Mary Holland, Ruth Ann Ingraham, Ron Jackson, Cheryl Jensen, Mike Kelley, Kim Krull, Rolland Kontak, Jackie Luzar, Bill Malcolm, Marian McKittrick, Donovan Miller, Marty Miller, Dan Moran, Sue Nord Peiffer, Mark Outcalt, George

Peregrim, Amy Perry, Susan Pratt, Betty Randall, David & Jane Savage, Margaret Smith, Laura & Arne Snipes, Deb Snyder, Rosie Springer, Charles & Mary Spurgeon, Jean Stallcop, Dawn & Michael Stelts, Dianne Stippler, Doris & Bob Thomas, Kevin Tungsveick, Mona Visnius, Betsy & George Wilson, and Susan Zellers.

*If we have omitted anyone from this list, please accept our apology and let us know.*



## Participating Nurseries and Landscape Contractors

Allisonville Nursery & Landscaping,  
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Becker Landscape Contractors,  
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Beineke's Nursery, West Lafayette

Edge of the Prairie Wildflowers,  
Crawfordsville

Hobbs Nursery, Indianapolis

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Mark M. Holeman, Indianapolis

Munchkin Nursery & Garden, Depauw

Native Plants Unlimited, Fishers

Spence Restoration Nursery, Muncie

Wild Birds Unlimited, Indianapolis

Woody Warehouse, Lizton

## INPAWS Annual Conference Set for November 4

Mark your calendars for this year's INPAWS Annual Conference on Saturday, November 4, 2006, in the scenic Bradford Woods conference facility in south central Indiana.

Scott Russell Sanders is this year's keynote speaker. Scott Russell Sanders is a Distinguished Professor of English at Indiana University and author of twenty books in addition to a book co-authored with Rich Clark, titled "Wild and Scenic Indiana," a natural history pictorial guide of the state. Sanders' work is concerned with people's place in nature and the practice of community. "The longer you stay in a place out of wholehearted desire, the more likely you are to learn about its human and natural history, to help preserve what's worthy, restore what's damaged and create what's lacking," wrote Sanders in an essay for the winter 2005-06 Notre Dame Magazine. The title for Sanders's talk for the conference is "Wild and Scenic Southern Indiana."

Concurrent sessions will focus on the natural history of southern Indiana and landscaping with native plants. Speakers include Marion Jackson on shrubs, Mike Homoya on orchids, Alice Heikens on barren plant communities, Kriste Lindberg on karst geology, Carolyn Harstad on animal-resistant landscaping, and Lynn Jenkins on planting for wildlife. Dawn and Dave Bauman will also offer a plant rescue certification course.

Registration and additional information on the conference will be published in the autumn INPAWS Journal and on the INPAWS website [www.inpaws.org](http://www.inpaws.org). Bradford Woods is located on State Road 67 between Martinsville and Mooresville. A map will be included with registration information.

## Plant ID Workshops

The Institute of Botanical Training, LLC, provides comprehensive professional plant identification workshops for biologists, environmental consultants, foresters, naturalists, and anyone interested in learning to identify plants. The workshops—on such topics as wetland flora; grasses, rushes, and sedges; prairie flora; tree identification; and monitoring of rare, threatened, and endangered species—are held over several days in different cities around the Midwest. For a schedule and fees, visit [www.botanytraining.com](http://www.botanytraining.com).

## In Search of Mini-Hikes

Following Bobbi Diehl's lead, *INPAWS Journal* seeks your reports on those postage-stamp native areas embedded in cities and suburbs in your own locale.

If you discover a worthy mini-hike site, tell us when you visited the area, how you accessed it, and what you saw and heard. In the interest of encouraging more mini-hikes to refresh body and soul, we will compile a directory of such sites and publish member reports in future issues.

The deadline for the fall issue is August 23 (see submission instructions on page 2).

## INPAWS EXCURSIONS

Watch for announcements of these INPAWS field trips in the mail, via email, and at [www.inpaws.org](http://www.inpaws.org).

### July

Tour of Indiana State Museum prairie led by Dan Anderson.

### September

Exploration of two savanna restoration sites, one that has not begun and one that is pretty far along, to show what people can do to preserve natural areas in Indiana.

### November

Tamarack hike in northeast Indiana led by Lee Casebere.

## WEDNESDAYS in the WILD

Walks co-sponsored by West Central Chapter of INPAWS

### July 12 1:00–3:00 p.m.

Butterflies of Celery Bog, Lilly Nature Center, West Lafayette.

### July 19 1:45–5:00 p.m.

Prairie walk at Jasper-Pulaski Tefft Savanna.

### July 26 1:00–3:00 p.m.

Recreated prairie at Lilly Tippecanoe Labs.

### August 9 1:00–3:00 p.m.

Wildflowers of Spinn Prairie.

### August 23 1:00–3:00 p.m.

Restored prairie of NICHES' Weiler-Leopold Nature Reserve.

### August 30 1:00–3:00 p.m.

Willow identification at Martell Forest and Purdue Wildlife Area.

For more information and directions to program locations, visit the regional chapter listing at [www.inpaws.org](http://www.inpaws.org).

# Winning Proposals Selected

The Small Grants & Awards Committee received ten proposals and selected three to receive a total of \$1,130 in awards. Congratulations to our award recipients. Next year's submission deadline will be moved ahead to February 1, 2007. Watch for proposal guidelines in the fall issue of *INPAWS Journal* or visit [www.inpaws.org](http://www.inpaws.org).

## "Flying Flowers" Educational Garden

Proposal by David Welch and Lisa Weisner, Sycamore Land Trust. Awarded \$500 to purchase native seed mix from Spence Nursery to seed a half-acre at Touch the Earth Preserve in Bartholomew County.

*Committee comments:* Your project is excellent—very well thought out with a plan for first removing the invasive fescue, for future maintenance, and for the addition of plugs to this initial seed planting. It will not only add to the native plant biodiversity of SLT's Touch the Earth Preserve, but it will also provide students and other visitors with an opportunity to learn about Indiana's natural history and the use of native plants in the landscape.

With half of this area to be planted in a visible powerline right-of-way along a road, your native plant landscaping and the butterflies it will attract will hopefully entice others to follow your example. Because you will be putting up "Do Not Spray" signs and the property will be monitored by its stewards who live just across the road from the planting, the committee is assured that your planting will be protected from road crew damage.

## Native Landscaping at Three Public Libraries

Proposal by Gus Nyberg, Friends of Sands. Awarded \$200 for mulch, potting soil, and hard-to-germinate or slow growing native plants such as *Tephrosia*, *Amorpha*, *Aster*, and *Asclepias* to landscape the Roselawn, LakeVillage, and Morocco Libraries in Newton County.

*Committee comments:* This is a wonderful project—it brings native plant gardens to three different public spaces, giving them good visibility in the community.

Your volunteer group has already [shown] a lot of ingenuity in the use of placemats in local restaurants to inform people of the natural areas of Kankakee Sands and Willough Slough.

We commend your group for the time and effort it has already put into the current project in seed collection and preparation, and for its frugality and conservation ethic in reusing plant pots and seed trays from previous projects!

## Demonstration Rain Garden

Proposal by Nina Evans, Indianapolis Zoo. Awarded \$430 for native plants, rocks, and compost to create a rain garden at the southeast corner of the Dog 'n' Suds dining plaza at the Indianapolis Zoo in Marion County.

*Committee comments:* What a great project—creating a rain garden by redirecting rainwater from a restaurant downspout into the garden instead of into the storm sewer—and one with good visibility in a location where it will be a permanent, maintained feature providing educational value for years to come!

The educational component of this project is an important one—introducing the concept of rain gardens to the public, not only for their beauty but also for their contribution to cleaner water by helping to recharge the groundwater and reduce run-off pollution!

The committee is pleased that you will be removing the invasive non-native ground cover *Vinca minor*. As you are probably aware, it is very important that you get rid of all of the vinca before planting because otherwise the rhizomes will resprout through your new plants! So you may have to remove the top three inches of soil to ensure that you have no remaining rhizomes.



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