



Running Before Ice World Distribution of Temperate Hardwood Forest Species

Marion T. Jackson, Professor Emeritus of Ecology, Indiana State University

When European colonists arrived at American shores in the early 17th Century, many of the hardwood forest trees they encountered were tantalizingly familiar. They recognized oaks, beeches,

maples, elms, ashes, willows, birches, chestnuts, hawthorns, sycamores, lindens, walnuts, and other genera of trees, but not hickories—hickory is a New World genus, not native to Europe. They also noted, on closer inspection, that all the New World species were different from those “back home.” How could this be?

Likewise, when American military personnel served in China during World War II, or in Korea during the Korean War, several of the tree genera present there gave them some feeling of home. Again, they discovered oaks, maples, gums, sassafras, tulip trees, elms—and even coffee tree, yellowwood, and rhododendron, if they looked in certain select sites.

How do “sister species” of these important hardwood tree genera happen to occur at sites so widely separated about the Earth?

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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 value, beauty, diversity, and environmental importance of indigenous vegetation.

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INPAWS is a not-for-profit 501(c)(3) organization open to the public. For membership information, visit www.inpaws.org.

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Witness to the Magic

I try not to let good things go by unnoticed. In spring the foliage slowly closes in the prospects from all the windows and the porch. When the trees are in full leaf, this place, close to the road as it is, seems remote and set apart. When the leaves fall, the distances lengthen all around....

And I have known days when the temperature would not rise above zero, when snow would be deep, ice on the river, the north wind rattling the branches. Then this house is a little cell of warmth, a cold brilliance coming in at the windows, a good fire in the drumstove, a pot of bean soup simmering, the dog asleep on the floor. Nobody comes, only the birds to the suet feeders. And I have nothing to do but watch and read.

From *Jayber Crow*
by Wendell Berry

Greetings Native Plant Enthusiasts!

This quote from my favorite writer, whom I serendipitously discovered in an excerpt from *The Sunflower Family in the Upper Midwest* purchased years ago at an INPAWS conference, came to me as I reflected on these past two years during which I've had the privilege of serving as president of the Indiana Native Plant and Wildflower Society.

It's been a lot of work, as all worthwhile things seem to be, but I've gained so much in the connections and friendships I've made. Most of all, it's been rewarding to just watch and appreciate all the activities that INPAWS accomplishes, and the people who step in to make them happen throughout the seasons.

It amazes me how this organization works—it's almost magical the way complicated, extensive projects seem to materialize with just the right people taking the initiative at just the right time (okay, so occasionally it *has* seemed "in the nick of time"). Sometimes I feel as though watching our members work is like observing nature—with great appreciation and even awe!

Together we have accomplished great things for INPAWS, and it's been a joy to be a part of it. Thank you all for allowing me this opportunity, and for participating in the continued growth, outreach, and accomplishments toward fulfilling our mission of promoting our native flora.

I'm looking forward to watching—and participating in—the future of our organization under Nancy Hill's stewardship and leadership, and I wish her and all the new officers the same incredible support, talents, and energy you've given me.

Karen



Temperate Hardwood Forest, continued from page 1

To understand these widely disjunct biogeographic distributions, we need to examine the fossil record of hardwood forest communities dating back to the early Tertiary Geologic Period of some 60–70 million years ago, a time when many present-day hardwood tree genera, such as *Magnolia*, *Liriodendron*, *Sassafras*, and *Liquidambar*, had newly evolved.

At that time, the Eurasian land mass essentially encircled the northern polar region, except for the northern Atlantic Ocean, with Asia and North America being connected by a very wide land bridge across the present Bering Sea. This huge circumpolar land mass was generally low in elevation, uniformly quite moist, and exceedingly warmer than are northern North America and Eurasia today. As a result, the Arcto-Tertiary Temperate Hardwood Forest was essentially continuous from Greenland to Alaska to Siberia, and thence to Scandinavia.

Late in the Tertiary Geologic Period three major events occurred simultaneously (not literally, but over several million years—almost an eye-blink, geologically speaking):

First, as continents jostled for position via plate tectonics (continental shifting), this launched a period of very active mountain building across much of the globe. During a period of several million years, mountain ranges known today as the North American Rockies; South American Andes; European Alps, Pyrenees, and Scandinavian Ranges; and Asian Himalayas arose or greatly increased in elevation.

◀ Glacier photo on page 1 courtesy of www.mongabay.com.

Extent of all glaciations over the last three million years, superimposed on each other. The stars mark center points of different glaciations; the X marks magnetic north. Image courtesy of Jno Cook. ▶

Second, as land masses elevated, the climates of the Northern Hemisphere cooled dramatically, eventually culminating in the onset of the Ice Ages typical of the Late Pliocene and Pleistocene Epochs.

Third, the newly formed high mountains influenced wind flow and precipitation patterns, causing huge rain shadows to develop in the lee of mountain ranges, resulting in the development of (or expansion of) extensive grasslands and/or deserts.

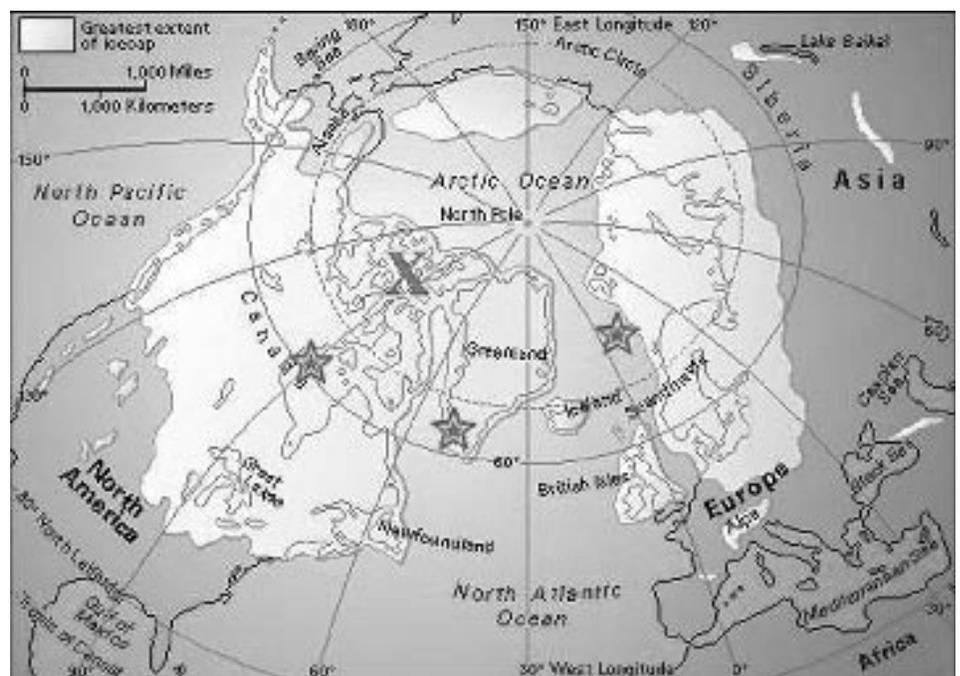
As cooling trends and drought patterns intensified and deepened, the once-vast circumpolar temperate hardwood forest became fragmented. The remnants were forced to migrate southward especially, and also eastward or westward toward refuges, each having an environment amenable to temperate hardwood forest species—namely Eastern North America, Western Europe, and Southeast Asia—where this vegetation type resides today.

As the climates continued to cool drastically at the onset of the Pleistocene Ice Age, the hardwood forests migrated southward (or attempted to do so) over a several thousand year period, moving seed by seed, during hundreds or thousands

of tree generations, to refuges in more favorable climates. Pollen profiles from bog and lake sediments trace the path of these tree migrations, and the trees we find today tell us that the outcomes of these migrations were by no means uniform.

In Eastern North America, the low-lying Appalachian Mountain Chain, oriented basically north-south, provided an essentially continuous migration corridor to refuges in the coves of the Southern Appalachians, with their environment most suitable to hardwood forest species. It was here that a multitude of deciduous hardwood tree species were able to “overwinter” the rigors of the Ice Age. As a result, Great Smoky Mountains National Park has the richest assemblage of temperate hardwood tree species anywhere in the world. (Interestingly, the Mixed Mesophytic cove forests of the Southern Appalachians today have a very similar generic composition of trees to what occurred in the Arcto-Tertiary forest of 60–70 million years ago.)

In contrast, the east-west mountain ranges of southern Europe (the Alps and Pyrenees) lay athwart the migration path of the trees attempting to “escape” the southward-moving Pleistocene ice sheets. Many of the





Maple beech forest. Photo courtesy of U.S. Park Service.

trees could not survive the rigors of the high-elevation mountain passes, especially in the taller Alps, so that many species of hardwood trees became extinct when they found themselves with their backs literally to a wall of advancing ice masses.

As a consequence, the native hardwood tree species richness of Europe today is only a fraction of that occurring in the Eastern U.S.—only around 100 in Europe versus about 400 in the Eastern U.S.—and Indiana has about the same deciduous tree floral diversity as does all of Europe!

As the climate warmed, and the ice sheets covering much of the Northern Hemisphere receded at the close of the Pleistocene, the tree migration reversed in the glaciers' wake

and moved back northward onto the newly minted soils of the de-glaciated landscape, a process that was still ongoing when the European settlers arrived at America's shores.

Now, a footnote to explain the origin of "sister species" that occur in the widely separated Temperate Deciduous Forest regions of the Northern Hemisphere:

The primary reason that species are sisters rather than identical (for example, *Liriodendron tulipifera* in the Eastern U.S. versus *L. chinensis* in China) is that the geographic range separation near the end of the Ice Age resulted in the evolution of parent species into two or more daughter species. Each new species became more precisely adapted to its new sur-

roundings during the millennia since the Pleistocene retreat, and gene flow was prevented between the isolated populations by the barrier of geographic distance.

The Power of Observation

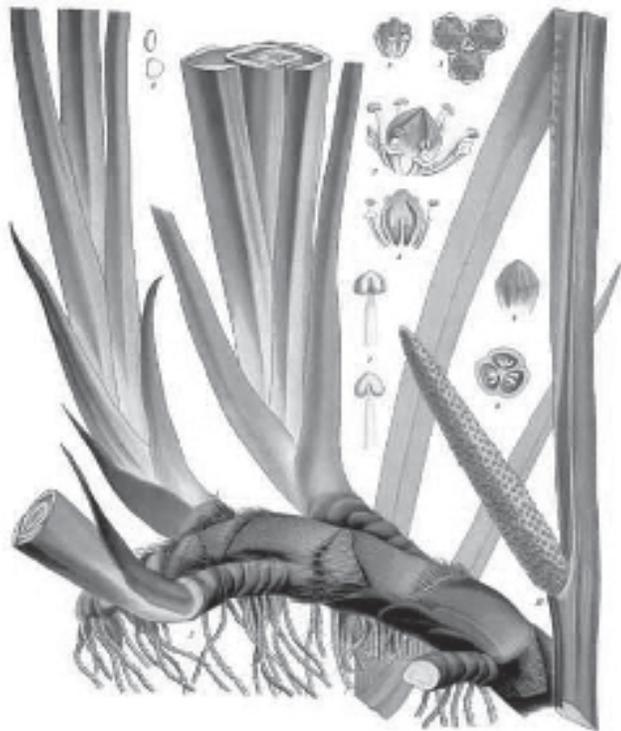
Rebecca Dolan, PhD
Friesner Herbarium, Butler University

The sine qua non of botanizing is putting correct names to the plants you find growing in the wild. Here are some things to keep in mind when you come across a plant you would like to identify.

They all involve heightening your skills of observation. Practicing these skills is one of the things I like best about botanizing, and from what I have read, exercising all the senses involved should ward off the declining mental acuity that comes with aging—I hope so anyway.

Surroundings. First, take a look at your surroundings. Habitat is a major clue. Most plants are fairly specialized in where they grow. Are you in the woods? Along a stream or creek? In a prairie or meadow? These are examples of stable plant communities.

Other kinds of habitats are referred to in manuals as “disturbed” or “waste-places.” These are habitats that share the condition of being more-or-less-frequently disturbed by plowing (farm fields), mowing (yards, roadsides), herbiciding (railroad rights-of-way), or even natural events like flooding. Certain kinds of plants are more likely to be found in each habitat type. When you gain some familiarity with what will be found where, it narrows the focus of your search for identifying clues.



Soil. Next, what is the soil like? Wet? Sandy? Soil characteristics can be clues to plant identity.

Cultivated plant? This can be tricky but is often an important clue: Could your plant have been planted and be part of old landscaping, or are you in an area where it could have recently escaped from cultivation? Wild plant identification manuals won't include cultivated plants, and you could spin your wheels thumbing through the pages for a mystery plant that is not truly wild. When I suspect a mystery plant is a cultivated plant, I use Michael Dirr's *Manual of Woody Landscape Plants* or Steven Still's *Manual of Herbaceous Ornamental Plants*.

Woody or herbaceous? Is the plant woody (a tree, shrub, or woody vine) or herbaceous? Try bending the stem. Be aware that some young trees and shrubs don't seem to have wood yet.

Leaves and stems. Look at the arrangement of the leaves on the stem or twig. Are the leaves opposite, alternate, or whorled? Are there winged extensions on the stem, or any pores or markings, thorns or prickles? Other extras on or near the leaf stalks, like stipules or tendrils? Are the leaves simple or compound? Furry or smooth? The same color on top and bottom? Pull off a leaf. Does it have milky sap? Do the crushed leaves have a scent? What is the pattern of the veins in the leaves? These features will be helpful with identification, and may allow you to tell if the plant is, for example, a monocot, which limits the possible identifications.

Flowers. Look for a specimen with flowers. Flowers are much more unique between species than leaves. Many plant families have easily recognizable distinguishing characteristics. The most common plant families in Indiana were covered in my Botany 101 series. When looking at a new mystery plant, try to discern the flower arrangement on the stem, or the inflorescence type, then examine individual flowers for numbers of parts (sepals, petals, stamens). Manuals for herbaceous plants often have plants arranged by flower color, again limiting the focus of the search for your mystery plant.

Cross-check. Have some guesses? Use Google image search to check it out. Go online to www.google.com, click on the Images link, then type in the name of the plant you think it is, and press Enter. You will be rewarded with multiple thumbnail photos and/or drawings of the plant you typed in, and you can click on any thumbnail for a larger view and further information to help you verify your find.

You are also welcome to come by the Friesner Herbarium at Butler University for help with identification (phone ahead to 317-940-9413). Mary Welch-Keeseey, Consumer Horticulture Specialist, Purdue University, Department of Horticulture and Landscape Architecture, is always glad to help, too (317-630-3257). Outside Indianapolis, call Purdue toll-free at 888-398-4636 and ask to be transferred to Mary or to the Purdue Extension office in your county.

Mary and I will also attempt to identify plants from digital photos sent via e-mail (rdolan@butler.edu, marywk@purdue.edu). It's much easier with a plant sample in hand, but we love ID challenges. We always learn something and get a chance to hone those observation skills.

◀ Franz Eugen Köhler was a keen observer and recorder of plant details. His 1887 work, *Köhler's Medizinal-Pflanzen*, contains some 300 full-page chromolithography illustrations. Pictured on the opposite page are the European *Acorus calamus* and *Fraxinus ornus*. See the full collection at http://commons.wikimedia.org/wiki/Koehler_1887_alphabetical_latin.

Welcome to Our New INPAWS Members

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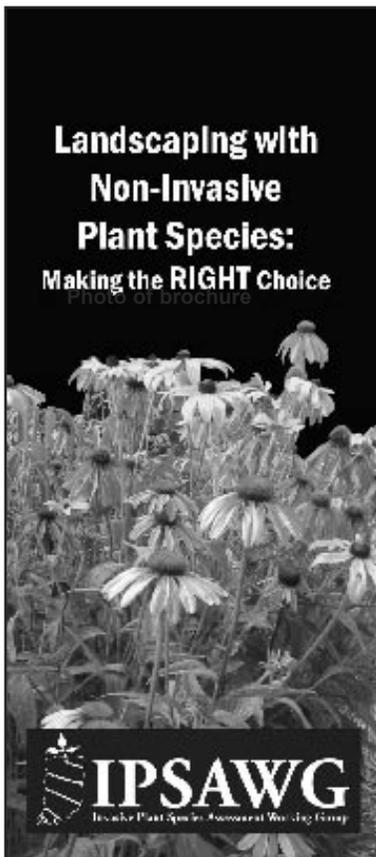
WEST CENTRAL

Keith Board

Nila & Peter Grube

To join INPAWS or renew
your membership, visit
www.inpaws.org.

All of the Beauty, Experts Recommend Non-Invasive



Landscaping with
Non-Invasive
Plant Species:
Making the RIGHT Choice

A new brochure is now available that can help gardeners make the right choice when landscaping by NOT choosing invasive plants. *Landscaping with Non-Invasive Plant Species: Making the RIGHT Choice* helps gardeners avoid the bad plants while also providing many beautiful alternatives.

Many common garden plants are not native to the United States, and most of them have little negative impact on our natural areas. However, some are categorized as invasive; that is, they move outside of cultivation and

invade undisturbed natural areas such as wetlands, prairies, and forests. The harm they do to native plant and animal species is immense, and the costs to control and/or eradicate them are enormous.

"Gardening is a fun and relaxing hobby," says Ellen Jacquart, Director of Stewardship with The Nature Conservancy and chair of IPSAWG. "And with this new brochure, IPSAWG is hoping that gardeners have an easier time making the right gardening choices."

Do Not Plant

Asian bush honeysuckle
Autumn or Russian olive
Crownvetch
Dame's rocket
Glossy or common buckthorn
Japanese barberry
Japanese honeysuckle
Japanese hops
Japanese knotweed
Kudzu*
Multiflora rose*
Norway maple
Oriental bittersweet
Phragmites
Privet
Purple loosestrife*
Reed canarygrass (ribbon grass)

*Illegal in Indiana

Plant with Caution

(see brochure for specific cautions)

Burning bush
Chinese maiden grass (*Miscanthus*)
English ivy
Periwinkle
Sawtooth oak
Siberian elm
Wintercreeper

The IPSAWG Story

Ellen Jacquart, IPSAWG Task Force Chair

In the beginning, there were a bunch of disgruntled natural area managers. We'd talked to each other for years about the frustration of killing privet that had invaded a fen, only to look up and see a new privet hedge being planted in the neighbor's yard. We grumbled about gardening articles in the Indianapolis paper that promoted Asian bush honeysuckle, another invasive woody shrub. We complained about wildlife biologists recommending autumn olive as beneficial for wildlife, then had to watch while that one species took over thousands of acres in the state, displacing all the other plant species in its rampage—and wondered how these dense, choked thickets could possibly be good for wildlife.

No matter how much we complained to each other, we noticed that nothing much changed. So in 2001 we decided to talk to OTHER people besides natural area managers—nursery owners,

landscape architects, botanists, land managers, and others—and see if we could come to an agreement on which plant species were invasive in Indiana and should not be planted. The Invasive Plant Species Assessment Working Group (IPSAWG) was born. Our task: To assess dozens of species used in landscaping to determine which were invasive or potentially invasive, and to develop recommendations for the use of each of the species.

I remember I was kind of nervous at our first assessment meeting. The assessments were to measure invasiveness of a particular species, and we had chosen to assess Asian bush honeysuckle first. We chose it because it's the most widespread of our woody invasives, and we thought we had pretty good evidence from the field that it was truly problematic. With some trepidation, we laid out the evidence for the number of habitats that were being impacted, the number of acres covered, the ecological impacts

None of the Risks

Alternatives to Popular Ornamentals

The results of 33 invasive assessments for trees, shrubs, vines, grasses, and flowers are included in the brochure with recommendations of either “Do not buy, sell, or plant” or “Plant with caution.” There are specific cautions for particular invasive plants; for instance, wintercreeper (*Euonymus fortunei*) has invaded many forests in Indiana, but can be kept under control easily by planting it only next to concrete or lawn (so it doesn’t creep outside the garden) and not letting it climb (so it doesn’t produce berries and get spread by birds).

that were occurring, and more. Assessments of invasiveness were based on hundreds of documented reports from around the state of these garden plants moving outside of gardens and into natural areas.

It wasn’t too far into the discussion that Mike Cline of Perkins Landscaping, our representative from the Indiana Nursery and Landscape Association, began adding his observations of how invasive this plant is in the landscaping business and what a problem it is for them. It shouldn’t have surprised me—those who do landscape maintenance often fight the same invasive species that we do in the woods or prairies. Ultimately, we all agreed that Asian honeysuckle was one to NOT plant in Indiana.

Six years and dozens of meetings later, IPSAWG has produced a brochure that summarizes our findings and recommendations for the use of landscaping species.

Along the way, we all learned a lot. I learned that the term “green industry”

The brochure’s real appeal may be the wide array of images of non-invasive plant alternatives. “You don’t have to make sacrifices just because you’re planting with non-invasive plants,” says David Gorden, representing the Indiana Chapter of the American Society of Landscape Architects on IPSAWG. “For every landscaping need, there is a non-invasive plant that can fill the role beautifully.”

includes a whole lot more than retail nurseries. It includes landscape design, turf management, plant growers, landscape maintenance, and more; and each facet of the green industry has a different view of this issue. We didn’t always agree with each other, but I think we always ended up with reasonable recommendations.

As we learn more about existing invaders, or find we need to address new species coming into the state, we’ll need to revise or add to our recommendations. By far the best thing that came out of this effort was the actual collaboration of IPSAWG. It’s wonderful to know that, as invasive plant issues come up in the state, we have a group of interested parties who can get together and discuss this issue in a reasoned way and provide good guidance.

IPSAWG Partners

The Invasive Plant Species Assessment Working Group is a partnership among these Indiana agencies and organizations to decrease the intentional introduction of invasive plant species into our state.

Grazing Lands Conservation Initiative

Hoosier National Forest

Indiana Academy of Science

Indiana Beekeepers’ Association

Indiana Chapter of the American Society of Landscape Architects

Indiana Department of Environmental Management

Indiana Department of Natural Resources

Indiana Department of Transportation

Indiana Dunes National Lakeshore

Indiana Forage Council

Indiana Native Plant and Wildflower Society

Indiana Nursery and Landscape Association

Indiana Seed Trade Association

Indiana State Beekeepers Association

Indiana Wildlife Federation

Natural Resource Conservation Service

Purdue Cooperative Extension Service

Seed Administrator, Office of the Indiana State Chemist

The Nature Conservancy

The Wildlife Society, Indiana Chapter

U.S. Fish and Wildlife Service

To learn more about IPSAWG or obtain a copy of the brochure, visit www.nature.org/indiana.

INPAWS Native Plant Rescue Protocol

“Native plant rescue” refers to an organized volunteer event that digs and removes native plants from natural areas that are slated to be destroyed. Native plant rescue is a great opportunity to save native plants from destruction, but this activity can also involve risks. The INPAWS Native Plant Rescue Committee has developed these protocols to assure that rescues are done in a legal, ethical, and successful way.

1. Obtain permission to visit.

Once you’ve heard about a site that will have native plants destroyed because of development, *it is most important to get the landowner’s verbal permission to visit the site.* Explain that you understand the site is going to be developed and that you are possibly interested in doing a native plant rescue on the site. Ask for permission to visit and evaluate the site and let the owner know that you are just looking—if the site is appropriate for a native plant rescue you will be back in touch for permission. If the owner says no, that is the end of the matter—you cannot visit the site without permission.

2. Evaluate the site.

Not all sites are appropriate for plant rescue. First, scout the site to assure that it is not infested with invasive plant species like garlic mustard or Japanese stilt grass. Seeds from these species could inadvertently be moved from the site and spread widely through the rescue effort. Second, make a list of the native species that are salvageable. Keep in mind that spring ephemerals need to be salvaged before the end of May or nothing will remain aboveground to indicate where to dig. Third, evaluate parking and access to find the easiest

way to get people in and out of the site—pots full of dirt get very heavy!

3. Obtain permission to do a native plant rescue.

If the site has salvageable native plants, and is not infested with invasive plants, *approach the landowner for permission to do the plant rescue.* The owner needs to sign the permission form found inside the Plant Rescue brochure or on the INPAWS website (www.inpaws.org). If they will not sign, the rescue cannot proceed. For help in approaching the landowner, contact the Plant Rescue Committee chair(s).

4. Map and verify.

After receiving permission from the landowner or their representative, map and verify the location of the development site with the landowner. Make sure there are no co-owners, tenants, or anyone else to also coordinate with. Consult with the landowner on the timing of the rescue to make sure you don’t interfere with the landowner’s plans, equipment that will be on site, etc.

5. Set a date.

Set a date for the rescue in consultation with the landowner and inform the Plant Rescue Committee chair(s), who in turn will notify committee members of the time and place of the rescue and ask them to bring shovels, trowels, plastic bags, pots, trays, and anything else they can bring to help transport plants.

6. Day of the rescue.

As volunteers arrive, be ready to direct them as to where to park. Have them gather their tools and take them on a tour of the site, emphasizing boundaries they are to stay within and which plants to focus on. Go over how to dig the

plants, keeping the dirt intact around the root ball and carefully placing in a bag or pot. Be respectful of the landowner; do not leave empty pots or bags at the site. Fill in holes and leave the site as you found it—minus some native plants.

7. Post-rescue care and maintenance.

The general policy is that rescuers take the plants home, holding one-half for the spring INPAWS Plant Sale and Auction and taking the other half for their own use. In some cases, there may be a demonstration garden or local nature center that could use the plants, and those are appropriate uses. *It is rarely, if ever, appropriate to transplant the rescued plants into another natural area.* This risks introducing new species and new genotypes into a natural area and should not be done without a thorough assessment of the risks and benefits.

Once the rescuers take the plants home, it is up to them to keep the plants alive. This is usually done by planting them in a protected spot where they receive bright indirect sunlight and good drainage. Most native plants survive the move very well if the environment they are moved to matches the one from which they were rescued.

8. Furnish plants for INPAWS Plant Sale.

The rescuers need to coordinate with the INPAWS Plant Sale planners to make sure the rescued plants show up when and where they are needed, and in good enough shape to sell. The INPAWS Plant Sale is held every May on the Saturday morning before Mother’s Day.

Protocol revised Spring 2007 and downloadable from www.inpaws.org.

The Heartbreak of *Psoralea*

Many first-time visitors to the University of North Carolina Herbarium ask, "Do you have any really rare plants?" My answer is, "Yes, hundreds!"

This is the main repository for rare plants inventoried by the North Carolina Natural Heritage Program." If that fails to impress, I show them Accession #566869: *Psoralea stipulata*—now categorized as *Orbexilum stipulatum* (Torrey & Gray) Rydberg—collected by C. W. Short in 1842.

Orbexilum stipulatum, commonly called Falls-of-the-Ohio scurfpea, is an ivory-billed woodpecker of the plant world: It was last seen in 1881 and is presumed extinct. Biologists cling to the hope that it too will be rediscovered. All known specimens of *Orbexilum stipulatum* were collected between 1835 and 1881 from a single location: Rock Island, Falls of the Ohio. Though some herbarium specimens claim this location as Indiana or Ohio, the river channel is within the Commonwealth of Kentucky (the Northwest Ordinance of 1787 defined the Indiana state line as the north bank of the Ohio River¹). The Falls of the Ohio is a 26-foot drop over a series of rapids and rock shelves in a 2-mile stretch of the Ohio River. Louisville, Kentucky, and Clarksville, Indiana, grew up at this navigational barrier. Rock Island, one of the larger islands in the cataract, "is (or was) a small Devonian limestone island of the Falls of the Ohio River and within the Louisville, Jefferson County, Kentucky corporate limits. Most of the island was destroyed in the 1920s as a con-

sequence of building U.S. Dam No. 41...and the Louisville Hydroelectric Plant."²

Charles Wilkins Short, M.D. (1794–1863) made many collections of *Orbexilum stipulatum* over a 20-year period, all from Rock Island. The UNC Herbarium specimen, collected by Short in 1842, is in perfect condition.



Falls-of-the-Ohio scurfpea (*Orbexilum stipulatum*). USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 2: 364.

Asa Gray (1810–1888) praised Short as "the first in this country to prepare on an ample scale dried specimens of uniform and superlative excellence and beauty...the vast improvement in

the character of the dried specimens now generally made by our botanists may be mainly traced to the example and influence of Dr. Short."³

Will Falls-of-the-Ohio scurfpea be rediscovered in the wild? Suitable habitats—flood-scoured riverbank bedrock, gravel bars, and limestone barrens and glades—exist nearby in Kentucky and Indiana. Happily, another Rock Island refugee was recently discovered in Indiana. *Solidago shortii*, named in honor of C. W. Short by Asa Gray, had disappeared from Rock Island by the late 1860s. It was believed extinct until a population was discovered in 1939 by Dr. E. Lucy Braun in Kentucky more than 160 km east of Rock Island. In 2001, during a botanical inventory of the Blue River in Indiana, researchers found a population of *S. shortii*. This site is "perhaps Indiana's largest and most diverse example of the brush prairie gravel wash community...situated at the base of a south-facing slope bordering the Blue River...18 km upriver from the Ohio River."⁴

Is *Orbexilum stipulatum* alive and well, lurking on some gravel island in southern Indiana or northern Kentucky, awaiting rediscovery like *Solidago shortii*?

Perhaps, but optimism must be tempered by the probable lack of a seed source: Although he observed the plant over a span of 20 years, Short never saw it in fruit, nor was he able to cultivate it.⁵ For now, all we have are herbarium specimens. While the UNC Herbarium is proud to be the conservator of such a rare specimen, we sincerely hope not to add many

Continued next page

more species to our “exist only as herbarium specimens” list. Our goal is to preserve the flora of forests, streams, dunes, and islands so we can enjoy them where they belong—in the wild.

This article originally appeared in the North Carolina Botanical Garden Newsletter 35(5): 8.

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INPAWS to the Rescue!

Is a natural site near you in imminent danger of falling to the bulldozer? Please let INPAWS know. We can organize a team to help you rescue the native plants. With advance notice, we may be able to support you in averting destructive development. Keep your eyes peeled for conservation opportunities in your area, and let us know at membership@inpaws.org.



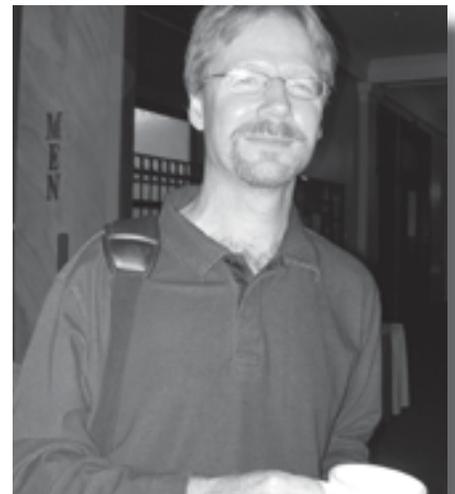
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Frederick Case, Jr., with Doris and Bob Thomas.

The Memories

Photos by Ruth Ann Ingraham
and Wendy Ford



Tasty German fare at the Rathskeller.



Visiting with friends old and new.



Tour of the Lilly ARBOR Project site at White River...

Figures are in for the 2007 INPAWS Annual Conference held November 3 at the Athenaeum.

The day-long event drew 152 attendees, including 15 walk-ins, 19 non-members and 8 new members. Sponsorship revenue was \$1,750, offsetting in part the facility and food costs of \$35 per person.

Book sale gross revenues were \$4,805 compared to \$3,095 in 2006 (profit to be determined). The new Silent Auction feature sparked competitive bidding and was enjoyed by all.

Keynote speaker Tracy DiSabato-Aust sent a thank you note following the event stating, "I was impressed with the knowledge, curiosity, community involvement and simply the kindness of your group. What you are doing will make a difference in our world."

The end-of-meeting field trips to Marian College Eco-lab and the Lilly ARBOR project proved popular (27 attended the ARBOR trip).

Thanks again to our sponsors, the auction donors, and all the volunteers who helped to make the INPAWS Annual Conference a most enjoyable and informative day—and special thanks to our indefatigable conference organizers, Kathleen Hartman and Dawn Stelts.

Look for additional candid photos at www.inpaws.org.



...led by IUPUI's Bob Barr.

Natural Heritage of Indiana on TV

We hope you had a chance to see the first episode of *The Natural Heritage of Indiana* on WFYI-TV in November. If so, please tell us how you liked it. WFYI tells us the first broadcast reached an audience of more than 13,000 households. A script of the first episode, which focused on the geological history of Indiana, will be posted soon at a Natural Heritage web page currently residing at www.wfyi.org.

A committee of expert advisors, including our own Becky Dolan, continues to review plans for the upcoming episodes. Watch for a report on her experiences, and the results of INPAWS's \$5,000 investment in this series, in the next issue of *INPAWS Journal*.

INPAWS Invites School Participation

At our November meeting, the INPAWS Board of Directors established a new membership category—one for school nature/ecology clubs with an interest in native plants. Annual dues will be \$25.

INPAWS Journal and all other mailings will be sent to the teacher or leader of the group, who will disseminate the information to club members. It is our understanding that, if the club is school-sponsored, the school will reimburse the teacher for the dues.

Members of the school group will be able to attend INPAWS events such as plantings, invasives pulls, field trips, and volunteer activities. In cases where there is limited space (such as hikes with restricted numbers of participants), arrangements will need to be made in advance with the event leader.

Slide programs and other information will be made available to the groups, and they will receive special consideration regarding grants for native plantings on their school property.

If any of our members are now working with a school group, please advise them of our new policy and contact Dan Anderson, danjand1@sbcglobal.net, for further information.



WiserEarth

INPAWS has been included in WiserEarth.org, a website "providing a system of support, communication, and collaboration for the people who are transforming the world." The site lists more than 106,000 non-governmental, social benefit organizations addressing the central issues of climate change, poverty, the environment, peace, water, hunger, social justice, conservation, and human rights.

WiserEarth.org is a searchable library of resources, events, people, and organizations, growing larger every day. There are no sponsors or advertising.

INCA Conservation Day at the Statehouse 2008

On Thursday, January 10, Indiana Conservation Alliance (INCA) invites you to join members of like-minded organizations in the task of convincing our legislators to conserve Indiana's natural heritage. Conservation Day at the Statehouse is your opportunity to learn of pending legislation and to buttonhole your own senator or representative to persuade them to cast a vote for conservation. A morning information session brings you up to speed with the latest conservation issues in the legislature.

This event is FREE to all registrants, thanks to sponsor member donations. Parking is available at White River/State Museum State Park and Circle Center Mall.

Following is an outline of the day's schedule. Details will be updated regularly at www.nature.org/indiana.

8:30–10:45 Morning Information Session, Room C, Indiana Government Center South; registration; introduction by INCA; conservation priorities discussion and Q&A

11:15–1:30 Reception with legislators, North Atrium, Indiana Statehouse; presentations and award for Conservation Legislator of the Year; light refreshments for Conservation Day registrants, legislators, and their staff

You may register the day of the event, but the planning for reception food will be easier if you register by January 3.

INCA is a state-wide network of nonprofit organizations providing a unified voice for the conservation and wise use of our natural resource to enhance our quality of life.

By attending Conservation Day at the Statehouse you show your state legislators that you are a voter who cares about the natural resources in our state. The more people that attend, the greater the impact. Coming in groups and carpooling with co-workers, friends, and family are encouraged. Can't miss work? Just come for your lunch hour. You'll be inspired by meeting other active conservationists from around the state.

Register at nature.org/indiana, or contact Angela Hughes, Conservation Day Coordinator at 317-951-8818 or ahughes@tnc.org.

Plan Now for 2008 Plant Sale and Auction

It is way too early to be thinking about the 2008 INPAWS Plant Sale and Auction, right? Wrong. Believe it or not, planning for that sale is already underway.

We have a new location for the sale in 2008: Trinity/St. Richard's Episcopal Church and School, located at 3243 N. Meridian Street in Indianapolis. The larger space available at this location will allow us to organize the sale in a different way and try some new things. The date of the sale is May 10.

One new idea that we will be trying this year is to encourage members to grow plants from seed, and donate their results to the sale. While we have had some seedlings in the past (mostly donated plants from some of our nursery friends), we would like to expand this effort. We think that it will be a nice complement to plants

donated from rescue efforts and member gardens.

To help with this effort, Dawn Bauman has volunteered to take any seeds that members collect for her and start seedlings from them for the sale. If she gets overwhelmed with seeds, she may regret this offer, but let's take that risk. If you have seeds for Dawn, you can contact her at dbauman@iupui.edu to arrange to get the seeds to her.

Look for more details about the sale in the spring issue of *INPAWS Journal*.



Bluejoint grass at Goose Lake Prairie, Illinois.

Coming Up

Thursday, January 10
INCA Conservation Day at the Statehouse 2008
 8:30 a.m. to 1:30 p.m. Free.
 Register at www.nature.org/indiana.

Thursday, February 7
Urban Greening Lecture
 Landscape architect Douglas Hoerr presents urban corridors and green roofs he has designed in the Midwest. Supported by IMA Horticultural Society. 7:30 p.m., Deer Zink Events Pavilion, Indianapolis Museum of Art.

Saturday, April 12
INPAWS Hike in Pine Hills Nature Preserve, Montgomery County.

Wednesday through Sunday, April 23–27
58th Annual Smoky Mountain Wildflower Pilgrimage
 Online registration begins March 12 and ends April 18 at www.springwildflowerpilgrimage.org.

Saturday, May 3
INPAWS Hike in Duning Woods Nature Preserve, Wayne County.

Saturday, May 10
INPAWS Plant Sale and Auction. Trinity/St. Richards Episcopal Church.

Watch for announcements of INPAWS events and field trips in the mail, via e-mail, and at www.inpaws.org.

What? Alpines in Indiana? Part 2

Barbara E. Plampin, PhD, Shirley Heinze Land Trust

We rejoin our intrepid Plant Detective on her two-week European vacation last summer, in search of alpines and other natives...

Site 3: "Seen 'em before," I silently grumbled as my hostess drove us to her treat of water lilies in a mountain lake at 2200 feet near Ruhpolding in southeastern Bavaria. But many lilies (*Nymphaea* species) turned out to be maroon, not white. Their accompanying yellow pond lilies (*Nuphar ? advena*), common in the Indiana Dunes, are protected there. Furthermore, tiny pink "little alpine violets" or cyclamen (*Cyclamen purpurascens*) dotted the rocky woods beside the lake.

Site 4: Overlooking Switzerland's Lake Lucerne, Mt. Rigi, at 5000 feet, is ascended by rack railway. The little train claws its way upward through small pastures punctuated by the bells of brown Swiss cows and frequent patches of stately gentians (*Gentiana lutea*), whorls of yellow flowers and leaves surrounding nearly six-foot stems. The descent via a second rack railway passes, on one side, close to fern-studded rock faces threaded with numerous waterfalls that one can almost touch. The amazing flower is the protected pink-purple, downward-facing martagon lily (*Lilium martagon*), here abundant. No Indiana plants, but a good place.

Site 5: Kreuzjoch, Austria, near Innsbruck, at 7000 feet, requires another cable car ride, this one colorful with paragliders sailing by and carpets of dwarf rosy rhododendrons (*Rhododendron ferrugineum*) below. Step off the narrow,



stony path at the top and fall a thousand feet, perhaps.

Look across to sheer, sterile Dolomite Mountain rock faces and far, far below to the valley. Look beside the path for intensely blue gentians (*Gentiana ? verna*), devil's claws (*Phyteuma* sp.), and forget-me-not-like herald-of-heaven (*Eritrichium nanum*); yellow spectacle pod (*Biscutella laevigata*), with seeds resembling pairs of eyeglasses, and rock rose (*Helianthemum nummularium*); orange hawk's beard (*Crepis ? aurea*), more pink rhododendrons and rosy beaked lousewort (*Pedicularis rostratospicata*), white silver plant (*Dryas octopetala*) with feathery seed heads and ever-

green bears' grapes (*Arctostaphylos uva-ursi*). The Indiana cousin, bearberry, is variety *A. uva-ursi coactilis*, state rare.

Yes, we do have alpines in Indiana. Ours also include yellow lady's slipper (*Cypripedium calceolus pubescens*), round-leaved sun dew (*Drosera rotundifolia*), bog bean (*Menyanthes trifoliata*), two state extirpated species, the American variety of twin flower (*Linnaea borealis americana*), and one-sided shinleaf (*Pyrola secunda*). Don't despise our pesky enchanter's nightshade (*Circaea lutetiana*) with its burs or our aliens, orange hawk weed (*Hieracium aurantiacum*) and lawn prunella (*Prunella vulgaris*). They are alpines, too.



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