

INDIANA

Native Plant and Wildflower Society

NEWS

Volume IV Number 2

Summer 1997

Wild Hyacinth

Wild Hyacinth (*Camassia scilloides*) has grown in my woodland garden, sited among large Hosta and deciduous shrubs, for over five years. When I first found the photo and drawing of the strap-like leaves and the tall spires of pale blue, delicate star-flowers in a wildflower guide, it made an immediate impression. My wildflower walks through the woods failed to turn up the single local species. Turning to catalogs, I located it immediately. Both wildflower nursery and bulb catalogs carried one or more of the species and cultivars. Three of the five species now grow in my garden, and I hope to add more this fall.

This spring, I was finally in the right place at the right time. In Crawford County, Indiana, I was blessed with the privilege of seeing the Wild Hyacinth in all its glory. As I stood in the middle of an old logging road, looking up a steep hill, the flowers were in bloom as far as the eye could see into the forest. They had formed dense mats, weaving in and out of the rocks, finding pockets of rich soil to multiply their bulbs. The pale blue, almost white blooms were accented by other families of flowers. The rich violet-blue of Dwarf Delphiniums, the yellows of the Wood Poppies and Merrybells, purple-red Trilliums, and the wine-colored stems and bright green lacy foliage of newly emerging ferns were companions. Mother Nature surely does design on a scale and depth beyond my comprehension.

Beside their ornamental value as flowers, species of *Camassia* have a long history as a source of food, first to the Native Americans, then to the first explorers, and finally to the people who settled this continent from abroad.

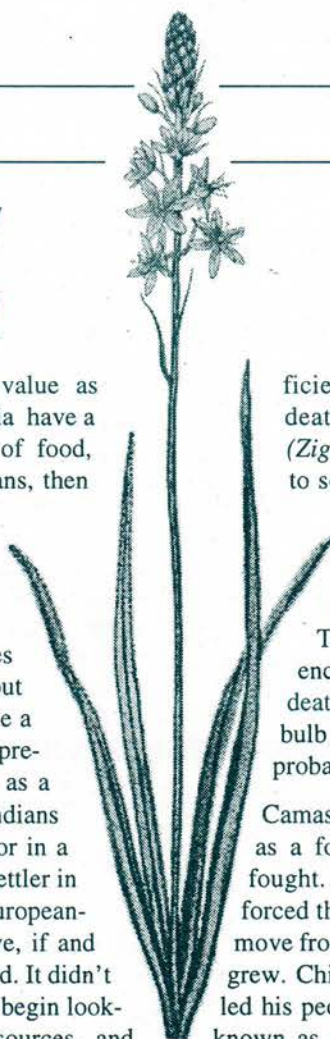
All five American species are supposed to be edible, but you would have to dig quite a few of the local species to prepare dinner for four, even as a side dish. The Native Indians used them raw, in a soup or in a kind of pie. If you were a settler in Oregon or California, European-type staples were expensive, if and when they could be obtained. It didn't take long for the settlers to begin looking for alternative food sources, and *Camassia* pie quickly became a favorite.

The outer covering was removed and the bulbs roasted, usually in a stone oven. Cooked down, they became a dark brown-black mass. The literature of the time stated that they tasted sweet and somewhat nutty. The mass could also be pressed, dried, and formed into thin cakes for storing. Before you are tempted to go out and experiment, be aware there are similar bulbs from another family that are suf-

ficiently poisonous to cause death. Death *Camass* (*Zigadenus sp.*) is easy enough to sort out when both types are in bloom. But the bulbs are gathered after blooming, so you need to know your *Camassia* bulbs. To quote, "the notable difference between a camas and a death camas is that if you eat the bulb of a death camas, you will probably die."

Camassia was important enough as a food staple for wars to be fought. In one, the Government forced the tribes of the Northwest to move from the lands where *Camassia* grew. Chief Joseph of the Nez Percé led his people to war in what became known as the Plateau Wars, and was defeated in 1877.

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The Bannock War occurred in 1878. Paiute and Bannock tribes, by terms of a treaty, were to retain their rights to dig bulbs on the Camus Prairie, Idaho. Nearby settlers brought hogs with them, who relished the bulbs even more than the Indians. Although the settlers were told to keep their hogs from the prairie, they disobeyed the order, and two hundred Indians from the two tribes went to war. The warriors were defeated, and placed in prison in September of that year.

As with most bulbs, Camassia should not be disturbed when growing actively. If the bulbs are to be divided or moved, do so after the foliage has died back, usually in June. Catalog orders are not shipped until September or October, so planting in fall is the appropriate time.

The bulbs enjoy deep, rich, well-drained soil. The three species I have grown do well in open shade resembling a wood's edge. They are on a slight incline to provide sufficient drainage. The soil can be improved by mixing sand and leaf mold with it, and I mulch generously with chopped leaves in the fall.

The Eastern Camassia or Wild Hyacinth (*C. scilloides*) is the local species. The leaves are long and linear, beginning upright and gradually arching over in a lax manner. They are about 1/2 inch wide, reaching an inch at maturity. All leaves come up resembling a small spray in a fountain. In the center of the arching spray rises a leafless stalk to about 18 inches. At the top of the stalk are closely spaced star-shaped flowers, colored a very pale blue or violet-blue approaching white, with yellow anthers. Flowers open from the bottom of the stalk upwards.

My plants have multiplied quite well, forming showy clumps. I know of no diseases or insects bothering the bulbs or foliage. I have read that field mice will eat the bulbs, but so far mine have not been on their menu.

I have also read of a variegated form that has cream-yellow striped foliage, but have not located the bulbs or seen photos. There are also vague references to "several botanical varieties."

I have successfully grown Western species including *C. cusickii*, *C. quamash* and *C. leichtlinii*. All three have white to blue flowers, and are hardy in our area. Several interesting cultivars are available as well.

Camassia may be grown in the border or in an open woodland setting. My preference is the latter, placing the bulbs among large Hosta that fill out as the Camassia becomes dormant. In the front, smaller plants such as Shooting Star (*Dodecatheon*), yellow violets, Dwarf Delphinium (*D. tricornis*), Wood Poppy or small ferns can be used. Wild Hyacinths also look great coming into bloom beneath the snow white of dogwood blossoms.

Gene Bush is the owner and operator of Munchkin Nursery, in Georgetown, Indiana, specializing in perennials, including many native plants and their cultivars. See MULTIFLORAE for more information. And, according to the membership report on page 7, Gene is a new member of INPAWS. Welcome, Gene!

Indiana Native Plant and Wildflower Society Newsletter

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

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

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President's Message

by Carolyn Harstad

Aliens are invading our state and city parks, our roadsides and even our private gardens. They are marching through areas once considered pristine and safe and causing incredible havoc as they aggressively outcompete natives for a place and a space. No, I am not referring to aliens from outer space, but alien plants and animals that we introduce with great regularity to our landscape and to our environment.

Indiana Native Plant and Wildflower Society members met at Shades State Park on Saturday, April 19, to pull garlic mustard and continued the task the next day at Turkey Run State Park. The problem was not severe in either park, not even within flood plain areas, but the campground area at Turkey Run yielded many garbage bags full of this invasive plant. About 25 INPAWS members enjoyed the weekend, the camaraderie and the satisfaction of having made a difference in these two parks. Since garlic mustard is a biennial, we need to schedule a return trip next spring to pull the little garlic mustard seedlings lurking beneath the leaf duff.

On our wildflower hike at Turkey Run on Sunday afternoon, thousands of Bluebells and False Rue Anemone created a fantastic visual treat. With diligence, we can save the wildflower populations in these two magnificent parks and keep them from being overtaken by the aliens.

In contrast, on Mother's Day weekend, I went to a conference at Pokagon State Park in northeastern Indiana and found garlic mustard stretching as far as the eye could see. In a veritable sea of this alien, only Mayapples and a few Virginia Bluebells proved that once upon a time wildflowers were present in the Pokagon woods. Fred Wooley, park naturalist, had valiantly marshalled volunteers and park staff to pull garlic mustard from around the Bluebells, but the task was overwhelming. Pokagon's wildflowers have also decreased in recent years due to the

overpopulation of deer which eat virtually everything from the ground up to their "browse height." Unfortunately garlic mustard, which overtakes and outcompetes native wildflowers, is not eaten by the deer.

Two years ago we saw an equally dismaying sight of garlic mustard at the Falls of the Ohio. If a method to curb this plant is not found, I fear we may face the extinction of wildflower woods as we now know them. Conventional methods of control are fruitless when an alien becomes this widespread. Only massive chemical or biological methods will exterminate the garlic mustard population at Pokagon—and unfortunately also at several of our other wonderful state parks.

Purple loosestrife is another alien invader. A biological experiment is underway to eradicate this strikingly beautiful plant that invades and destroys natural wetland areas. Fred Wooley has three pots containing purple loosestrife plants inside three tall wire cages. He told me that beetles will be placed on the plants, the cages will be covered with a netting to prevent the escape of the beetles and the plants will eventually be placed in the wetland area. The beetles will lay eggs on the introduced plants and then infest the entire area of purple loosestrife, hopefully eradicating this plant. These beetles defoliate the plants; others are root miners. They complete their entire life cycle feeding and surviving on a particular plant species. One can only hope that the treatment is successful and also that it does not cause unforeseen problems.

At a meeting last evening, a friend thanked me for my article on garlic mustard in our hosta newsletter. She told me she had only a small population in her woods, but without the article's description of the plant and the problems it causes, she would not have understood the necessity of getting rid of this pretty little plant.

In their own native habitats, plants and animals are generally controlled and well behaved. When they visit areas where they are not native, they sometimes overstay their welcome, multiply and become a grave threat to native wildlife and plants. In the *National Park Journal*, November/December 1996, author George Wuerthner writes: "The effect of exotics on native flora can be devastating to entire ecological communities." Lake trout, introduced to Yellowstone Lake as a game fish, is a very aggressive, fish-eating fish. Biologists fear that the introduction of this fish to Yellowstone Lake may lead to the decline and loss of cutthroat trout, which in turn would cause problems for "many of the park's cutthroat-dependent species such as white pelicans, grizzly bears, and bald eagles." The author goes on: "Exotics already have been implicated in the loss of more species than climate change or any other human-related factor except perhaps habitat alteration—to which non-native species invasions are closely linked."

The well-being of our gardens, our landscapes, our public places, our parks and natural areas is our responsibility. We need to educate ourselves, our friends and acquaintances, nursery owners, developers, landscape architects and anyone else who will listen about the value of using native plants in the landscape. Our world is a fragile place. Irresponsible use of alien species can destroy habitats, existing native plant and animal populations, and eventually lead to the demise of our environment. It is our responsibility to be responsible.

"We are what we repeatedly do. Excellence then, is not an act but a habit." Aristotle.

See related article on page 9.

Rooted in Mystery . . .

by Bill Cullina

How Does the Pink Lady's-Slipper Grow?

Few plants are at once as beloved and as enigmatic as the Pink Lady's-slipper, *Cypripedium acaule*. Its rare beauty belies the fact that it is actually one of our most common orchids, found growing in open, oak-pine forest in the company of lowbush blueberry and huckleberry.

Much has been written about the difficulties of transplanting Pink Lady's-slippers. They are indeed very difficult to transplant, and are best left to enjoy in their native haunts. Untold thousands of wild plants have been dug and sold with little or no chance of surviving more than a year or two; therefore NEWFS does not recommend any collection of these plants in the wild. In the past ten years, however, great strides have been made in research aimed at raising the plants to maturity from seed, and it is only a matter of time before nursery-propagated plants become commercially available.

THE ROOT OF THE PROBLEM

To understand why transplants usually fail, one must first look at the roots. Lady's-slippers store their vital food reserves in their root system. These roots can live for five years or more, but if the growing tip is damaged, a new tip will not be produced, and the root will stop growing. A mature, single-growth plant

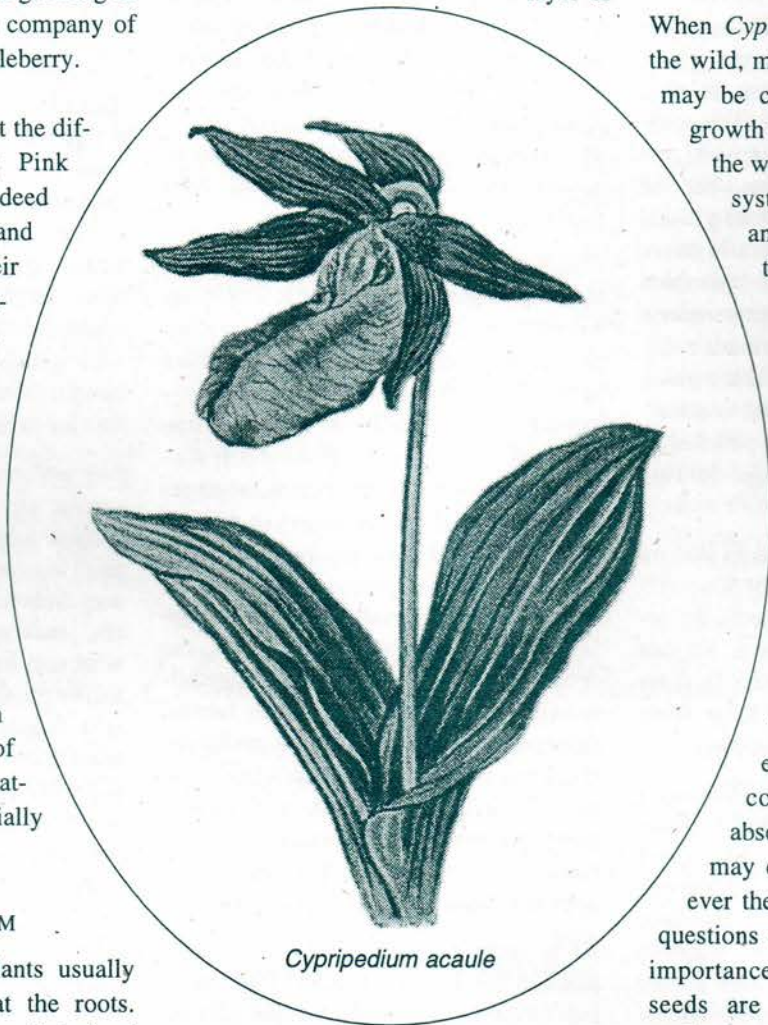
will produce only 4-10 new roots per year. These spread horizontally from the crown of the plant and, if undamaged, weave 12-18 inches through the thin layer of

(unlike most of their cousins) are very drought-resistant plants. Even in a dry year, like the summer of 1995, their leaves will persist well into the fall.

When *Cypripedium acaule* is dug from the wild, many of its long, shallow roots may be cut or broken, stopping their growth and allowing root rots to enter the wounds. Further, unless the root system is spread out horizontally and covered with nothing more than a thin layer of leaf mold, the roots will suffocate and die. With damaged roots, the plant loses much of its energy reserves, as well as its capacity to accumulate new reserves. As a result, the plant will grow progressively smaller and weaker over several seasons and eventually die.

A SPECIAL RELATIONSHIP

The slow death of transplanted Lady's-slippers has been commonly attributed to the absence of certain fungi the plants may depend on for survival; however there are still many unanswered questions about orchid fungi and their importance to mature plants. Orchid seeds are unique in that they have evolved a symbiotic (meaning "to live together") relationship with certain groups of soil fungi. The seeds are adapted to wind dispersal, which means they are very light in weight and produced in



Cypripedium acaule

spongy humus and tree roots that lies above the mineral soil. The roots rarely leave this well-aerated, organic zone for the oxygen-poor soils below. In fact, Pink Lady's-slippers

Rooted in Mystery continued on page 11

CONSERVATION OPTIONS FOR PRIVATE LANDOWNERS

by Ted Harris

Like Indiana landowners in general, private owners of natural areas (forests, meadows, wetlands) value their property for many reasons. These reasons often include sentimental, utilitarian and economic elements. Some owners also see their natural areas as an answer to the need of future generations for scenic greenspace. Other owners recognize that natural areas are vital to the future health of Indiana's biological diversity. Landowners who want to provide long-term protection for their natural areas may not be aware of options that are available. This column will briefly describe some of the choices.

DONATING LAND BY WILL:

With advance planning and receipt of an agreement to maintain and protect, an owner may be able to arrange for a donation by will to a land trust, to a government agency, or to a favorite educational institution. This approach can be used to reduce estate taxes to the balance of the estate, and it allows the owner to retain full control during the remainder of his or her life.

OUTRIGHT DONATION:

In addition to reducing future estate taxes, an outright donation can provide a substantial income tax deduction immediately. Further, it can provide great satisfaction, recognition and appreciation while the owner is able to enjoy them. If the donated property is also the site of the owners' residence, an agreement called "remainder interest" can gain the benefits of donation while allowing the owners to live out their lives on the property.

BARGAIN SALE:

A bargain sale to the protecting organization can be made at less than fair market value. This can generate income for owners who need it, while still providing many of the tax benefits.

CONSERVATION EASEMENT:

The gift or sale of an easement transfers only the rights that have been specified. For instance, donation of development rights to a land trust through a conservation easement means that only the land trust can develop the land. Since development is not what the land trust wants to

do, the easement effectively prevents the land from being developed. The owners retain basic ownership of the property, the right to live there, and the right to transfer other rights or ownership by will or by sale. For a natural area, the potential development value can be a large part of the property value. Therefore, the gift of a conservation easement can provide significant tax savings.

WHAT TO DO:

If you want to look into protection options for your land, be aware that the options described above are only some of those that are available. Expert advice is available from the Nature Conservancy and from Indiana's regional land trusts. As part of its mission, INPAWS' Conservation Committee can help you get in touch with one of these organizations. Owners who wish to pursue a protection strategy should also get professional legal and tax advice before making a commitment.

Ted Harris is chairman of INPAWS' Conservation Committee.

NATURAL AREAS AT THE DOW VENTURE CENTER SITE

The Dow Venture Center, home of DowElanco and DowBrands (and now the Future Farmers of America headquarters), is fortunate to include several high-quality natural areas which allow employees to pursue their interests in native plants, birds, and other wildlife right in the northwest corner of Marion County.

More than three acres of open field near 86th Street was converted to a Midwestern prairie in 1996, by direct seeding with a mixture of short grass and tall grass prairie species. The prairie installation, performed by Spence Nursery and Landscaping, and supervised by Kevin Tungesvick of INPAWS, included seed of forty different forbs and five species of grasses. Through Kevin's efforts at Spence, Indiana native seed became available for some of the prairie species. 1997 will be the second year for the planting, which we will monitor over the years as it develops into a native plant community that supports diverse species of insects and birds.

The Dow Venture Center also contains a fine twenty-acre mature woods in which flowering dogwood, white baneberry and nodding trillium mix with other plants in a rich native woodland flora. A variety of trees is found in these woods, including beech, cherry, maple and several oak species. Because of employee interest in access to the woods, a trail system has been developed by a team of volunteers. Especially valuable plants, such as a dozen large white nodding trillium, were moved from the trail's path to nearby locations. Soon, plant rescuers will move interesting wildflowers found on the FFA building site to safer locations.

A series of wildflower walks along the woodland trails has been organized and conducted by Jean Roberts (also of INPAWS). Participants can easily view twenty or more species of wildflowers and other plants over their lunch break. Bird walks have been held to observe the migrating warblers which take refuge in this welcoming woods. The group plans

to view butterflies in the prairie later in the summer, and to study tree identification in the fall.

Other nature-related activities at the Dow Venture Center site include building, installing and monitoring 17 bluebird houses, and stocking fish in a retention pond. All these activities are driven by the varied interests and perspectives on nature of the Dow Venture Center employees, and their desire to interact actively with nature outdoors.

Jean Roberts is involved with plant research at DowElanco, and has been a member of INPAWS since 1994. She is also a member of the band Blackberry Jam, which has appeared at our last two annual meetings.

INPAWS continues to be grateful to DowElanco for making its excellent facilities available to us for our annual meetings, and we wish them great success in their outdoor projects—Ed.

MULTIFLORAE

GARLIC MUSTARD ALERT!

About 20 INPAWS members trekked to Shades and Turkey Run State Parks in April for nature walks, and the opportunity of ridding selected areas of the parks of garlic mustard before it has a chance to become established. Apparently it has only been found in a few areas of the parks to date, but those areas yielded us about fifteen 30-gallon trash bags filled with the stuff. Besides the work, we enjoyed nature walks, great fellowship, and excellent food! Thanks to all who came, and to Kevin Tungesvick for making the arrangements.

G.M. (I hate to use dirty words) seems to be more prevalent in the Indianapolis area than I have ever seen it before. Holliday Park is heavily infested in many areas, and the well-tended Indianapolis Museum of Art grounds as well. (Although, I understand that our Treasurer Jean Viator, with grim determination, eliminated most of it during one of her IMA volunteer days). For the first time, I found plants in Ritchey Woods, the Children's Museum nature preserve, and one plant even had the nerve to come up in our garden! Please tell everyone you know about this plant, and encourage them to yank out any they find in their yards.

Orchard in Bloom

Thanks to the great efforts of Hilary Cox and associates, a lovely micro-garden display of wildflowers was set up at Orchard in Bloom, which was held the first weekend in May at Holliday Park. For the fourth straight year, the weather refused to cooperate. On Friday, it was cloudy until noon, when it started raining on and off. Saturday morning the sun was out briefly before 8 AM, when it started raining, and didn't quit until late in the afternoon. Sunday, fortunately, was a beautiful day, and many more people were out. Hilary and her helpers answered many questions about the flowers, and INPAWS, and gave out a number of applications and a lovely little brochure describing the garden, which had been prepared by Chris Carlson. Thanks to Hilary, and all who helped her!

WILDFLOWER CATALOG AVAILABLE

Gene Bush, author of the *Wild Hyacinth* article, is offering a wide variety of native plants through his Munchkin Nursery, 323 Woodside Dr. NW, Depauw, IN 47115-9039. If you would like his *Woodland Wildflowers* catalog, please write, or e-mail genebush@netpointe.com.

OASIS PROGRAM

The first INPAWS class in the OASIS program (Older Adult Service and Information Systems) was held at Glendale shopping center on May 19th, with about 35 in attendance. Dan Anderson spoke and showed slides on wild edibles and using native plants in the garden, assisted by his wife Sophia and Lynn Jenkins. With the exception of one *senior* senior gentleman, who kept nodding off, there seemed to be a great deal of interest in the presentation and the handouts (prepared by Anne Wilson) which were gobbled up quickly.

Lynn gave the second talk at Greenwood mall, Dan the third, at Washington Square, and Colletta Kosiba will complete the cycle, at Eagle Highlands on Indianapolis' northwest side. We hope that the series will result in more new INPAWS members and new plant auction buyers as well as wider knowledge of native plants!

HOLLIDAY PARK NATURE CENTER

More than \$2.3 million dollars have been raised for the new Nature Center at Holliday Park in Indianapolis, and the three fund-raising committees are working hard to get commitments for the remaining \$2 million needed. The building will be located in the northeast corner of the park, and the present Holliday House will be torn down. The northwest corner of the park will become a prairie landscape edged with pine and hardwood trees, with a large open space covered with long-stemmed Indiana native grasses. Site preparation will begin later this year, with formal groundbreaking scheduled for the spring of 1998. Your help in publicizing the project is needed, but if you would like to make a financial contribution, you are invited to purchase a brick or paving stone for the entryway of the Nature Center, inscribed with your name or anyone else's you choose. Bricks 4"x8" are \$50, and 8"x8" paving stones \$100. If you are interested, or would like additional information, call Susan Sperry at 317-475-9482.

❖ NATURE WALKS AT BUTLER UNIVERSITY ❖

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

July 8
August 12
September 9

Meet behind Gallahue Hall, near the greenhouse. Tours will last about an hour. There is no charge, and all are welcome.

For information, please call Dr. Dolan at 317-940-9413.

Report of Membership Chairperson, Ruth Ann Ingraham

The Indiana Native Plant and Wildflower Society now has 463 members, representing fifty-five Indiana counties, plus the states of Illinois, Missouri, Ohio and the District of Columbia. That's 463, up from zero four years ago. Requests for membership information arrive almost daily in my mailbox; several have arrived recently from people who are joining through our newest chapter, Michiana, along our northern border.

INPAWS extends a cheery welcome to you new members:

Bedford: Mary and Lamar Peterson,
Carmel: Shirley Schaub,

Connersville: Donna Handby-Lynch, Charlene Witt,
Depauw: Gene Bush,

Fishers: Esther Linenberger,

Fort Wayne: Shannon Goings,

Geneva: Chris Newlund,

Granger: Harry and Joyce Kevorkian,

Greenfield: Lora Hawkins,

Greenwood: Carol Mavity,

Indianapolis: Marvin Brethauer, Patricia Cochran,

Evans Dallas, Liz Day, Link Krimendahl,

Sally McKnight, Ethel Ranck, Betty and Parke Randall,

Antony Veena, Mary Ann Zoeller,

Kewanna: Alan McPherson,

New Castle: Helen Steussy,

Rochester: Bob Kern, Laura Snipes,

St. Paul: Brenda Kolker,

Spencer: Richard Fields,

Syracuse: Tami Mohler,

Tipton: Michael Kendall,

Vincennes: Christine Thomas,

West Lafayette: James Klatch,

Wheaton, IL: Mary Ann Sweeney.

To all members: Please let me know if you have a change of address or comments and suggestions about INPAWS. Or if you would like to write an article for INPAWS News, contact Editor Dan Anderson or e-mail wilson@hsonline.net.

The need for INPAWS volunteers is growing exponentially – from manning booths to installing demonstration gardens to advising landscape designers about native plants to pulling garlic mustard to being a speaker. We need help. Please let me or another board member know if you have some time to share.

Ruth Ann Ingraham, 317-253-3863 or rai38@aol.com

NATIVE PLANT BOOK OF INTEREST

Fred Wooley, Interpreter at Pokagon State Park, has called to our attention a reissue of *American Plants for American Gardens*, by Edith Roberts and Elsa Rehmann. The book deals with the use of native wildflowers and grasses as specimen plants and attractors of butterflies and birds. It's available from the University of Georgia Press, and sells for \$27.95 cloth-bound. ISBN is 0-82003-1851-5.

Education is one of INAWS' primary goals. We are excited about Indiana's First Lady Judy O'Bannon's implementation of a mentoring program at the Governor's residence this summer. She has made a garden space available for neighborhood children in a Butler Tarkington/Extension Daycamp to help children learn gardening basics with the help of experienced gardeners. The time will be from 9-10:30 AM once a week for six weeks. If you are interested in participating as a garden mentor for this six-week series from June 23-August 1, please contact Mary Peters, Extension Educator, at (317) 848-7351 extension 109 for the appropriate application forms.

FIRST PLANT RESCUE CERTIFICATION WORKSHOP HELD

The first Plant Rescue training session, hosted by Co-Chairmen Don Miller and Sue Dillon, was held in the Horticultural Society meeting room at the rear of the Lilly Mansion on the grounds of the Indianapolis Museum of Art. The room was packed with about 60 people who received their certification at the end of the interesting and informative program. At last report, several sites were being investigated.

On Sunday, May 11th, the first official plant rescue was held at Cross and Crown Lutheran Church, 79th Street and Allisonville Road, Indianapolis. The church has approved an expansion program which will take the better part of a small unkempt area between the church and the church-owned house directly in back. Although it was overgrown with garlic mustard, poison ivy and honeysuckle, your sharp-eyed editor spotted a number of green dragons (*Arisaema dracontium*) poking up through the tangled mess. As a result of an announcement at both services, about fifteen folks from the congregation appeared and, led by Dan and Sophia Anderson, removed about 40-50 Dragons, 6 Jack-in-the-Pulpits, a like number of Solomon's Seals (*Polygonatum biflorum*) and a few Waterleaf (*Hydrophyllum sp.*). At the same time, the folks got a short course on taking care of native plants, and each helped make inroads on the large patch of garlic mustard that was in the same area. I hope that many of you will have the satisfaction this year of helping save some of our desirable native plants and enjoying the activity at the same time!

Indy Parks Eco-Tours

Saturday, July 12 – Sunday, July 13

Trip to Lincoln Boyhood Historic Site, Lincoln State Park, Col. Jones Historic Site, and surprises. Transportation, lodging, lunches, admissions, snacks and guides included. Cost \$150.

Thursday, August 21

Visit to Gene Stratton Porter's country and Indiana's Amish country. Transportation, lunch, snacks, guides, admission included. Cost \$40.

If you are interested in either or both of the above tours, call Vicki at Holliday Park, 317-327-7180.

If you would like to enjoy nature right here in Indy, join Holliday Park naturalists for a Saturday morning stroll, beginning at 10AM.

June 21–Wild Edibles

July 5–Folklore of Trees

July 19–Summer Bloomers

August 2–Arboretum Tour

For more info call Vicki at above number.

"Lettuce and Tomatoes"

Among the less well-known salad and cooked greens are relatives of our commercial head and leaf lettuces (*Lactuca*). These plants of the sunflower family bear many small white, blue or yellow flowers resembling those of a dandelion or hawkweed, and when going to seed will form downy heads similar to those of dandelion, but flatter and less spherical.

Three of the species of *Lactuca* which can be found in Indiana are wild lettuce (*L. canadensis*) prickly lettuce (*L. scariola*) and hairy lettuce (*L. hirsuta*). Leaves may range from deeply-lobed to lance-head-shaped, and can be very variable among individuals of the same species. As the names indicate, the prickly lettuce has numerous small spines on the leaves and lower stem, while the hairy lettuce usually has numerous small bristles in those areas, and a reddish stem. All three species can be tall (up to ten feet) and have flower clusters which are widely spread out.

I have found the basal leaves of these plants, before the flower stalk begins to form, to be edible raw, with no more bitterness than young dandelion leaves. As the plants become older, a bitter milky sap gives the leaves a bitter taste, most of which can be removed by boiling for a total of fifteen minutes with one change of water. The cooked greens can then be served with a dash of vinegar and a butter sauce. As with mustard greens, there may be some bitter taste remaining, and some prefer mixing the greens with blander varieties.

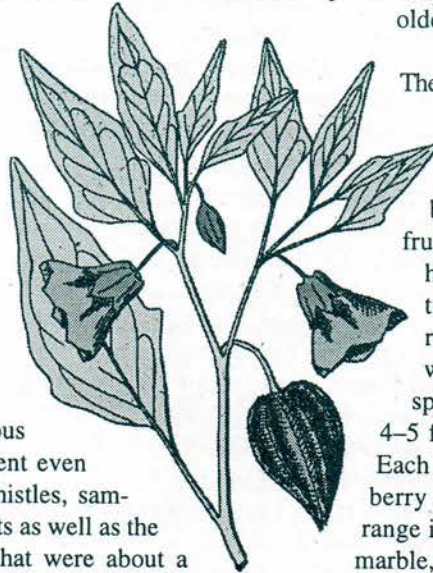
The sow-thistles (*Sonchus*) are a closely-related group of plants, with flowers and growth habits similar to the above. They, however, have the added disadvantage of

possessing numerous prickly spines along the edges of the leaves. It is recommended in the case of both the spiny-leaved sow-thistle (*S. asper*) and the common sow-thistle (*S. oleraceus*) that the spines be trimmed off (presumably with a pair of scissors). Young leaves may be mixed cautiously into salads, but cooking similar to the procedure for wild lettuce is recommended.

Euell Gibbons, the famous wild edibles author, went even further with the sow thistles, sampling the stalks and roots as well as the leaves. He cut stalks that were about a foot high, removed the small cluster of leaves at the end for boiling, and peeled them. After washing, he sliced them crosswise and boiled them for about twenty minutes, seasoning with salt, butter and herbs. He stated that both the stalks and cooked roots had a pleasant, artichoke-like flavor. The leaves were reported to be slightly bitter, like dandelion greens.

The so-called ground cherries (*Physalis*) comprise a small group of similar-appearing species which are widely distributed throughout eastern North America from Canada to the Gulf of Mexico. They are in the same family as the tomato and the potato, and a close rel-

ative is often found in larger supermarkets under the name "tomatillo" or "husk tomato." Another relative is the "Chinese lantern" plant which is often found in older gardens.



Smooth Ground Cherry
(*Physalis subglabrata*)

The flowers are pale yellow, somewhat trumpet-shaped, with a darker purplish or brownish center. The fruit forms inside a green husk which gradually turns brown as it ripens. The plants have weak stems, and may sprawl for as much as 4-5 feet along the ground. Each husk will have one berry inside, which may range in size from a pea to a marble, becoming first yellow, then reddish, as it ripens. It has been reported that the leaves and the unripe fruit are

toxic. In the yellow stage, the fruit is sweet and tasty, with a few very small seeds. Although it can be cooked and made into pies or preserves, I don't find that many, and add them instead to salads for a colorful and tasty touch.

I wouldn't recommend ground cherry as a garden show plant, but if you have an untended or fallow area, you might spare it, in hopes of getting at least a few tasty morsels in the fall. On the other hand, I have been battling sow thistles in our yard for the last twenty years, and no matter how many I dig, there seems to be an inexhaustible supply of new ones. They're not rare or native, so go ahead and pull or dig away!

Dan Anderson is our newsletter editor and a wild-foods enthusiast. E-mail him at danand@netdirect.net.



Spiny-Leaved Sow Thistle
(*Sonchus asper*)

BIOLOGICAL CONTROL OF PURPLE LOOSESTRIFE

by Carolyn Harstad

Purple loosestrife is listed as a noxious weed in many states and the sale of this plant and even of its cultivars is banned in many states, including Indiana. Purple loosestrife "is an exotic wetland perennial responsible for the degradation of many prime wetland habitats throughout the temperate regions of the United States and Canada," according to a November 1993 article printed in *BioScience*, Vol. 43, No. 10, pp. 680-686. The article reports: "Large, monotypic stands reduce the biotic diversity of wetland systems by replacing native plant species...thereby eliminating the natural foods and cover essential to many wetland wildlife inhabitants, including waterfowl...and jeopardizing various threatened and endangered native wetland plants and wildlife." It has also caused agricultural losses since livestock prefer native sedges and grasses to purple loosestrife. "In North America this plant is a classic example of an introduced species whose distribution and spread has been enhanced by the absence of natural enemies and the disturbance of natural systems, primarily by human activity."

Purple loosestrife came to North America in the early nineteenth century, "both as a contaminant of European ship ballast and as a valued medicinal herb for treatment of diarrhea, dysentery, bleeding, wounds, ulcers, and sores (Stuckey 1980)." The spread of the plant was facilitated by construction of roads, inland waterways and canals and of course through horticultural distribution. An aggressive, invasive exotic, each plant is capable of producing more than 2.5 million seeds annually. Loosestrife seeds are viable for many years and are easily dispersed in wetland environments as well as on animals and humans moving through the area. Although diligent, regular removal of plants by hand can control loosestrife in small young stands, this method is impractical when the plant is widespread. Conventional herbicides, cutting or burning control methods have not proved effective on large stands since the plants have strong rootstocks serving as a storage organæ to help plants resprout.

Scientific advisory groups from the United States, Canada and Europe studied the possibility of using natural enemies of *L. salicaria* in Europe as control agents, "a practice applied in North America since the late 1880's (Dahlsten, 1986)." The *BioScience* report states: "Of 120 species of phytophagous insects associated with purple loosestrife in Europe, 14 species were considered host-specific to the target plant. From this group, six species were selected as the most promising for biological control." After several years of detailed and intensive screening studies by scientific experts in the United States and Canada, the US Department of Agriculture's Animal and Plant Health Inspection Service (USDA-APHIS) approved three species for introduction in June, 1992. The species included a "root-mining weevil, *Hylobius transversovittatus* Goeze (Figure 1), which attacks the main storage tissue of *L. salicaria*; two leaf-eating beetles, *Galerucella californiensis* L. and *Galerucella pusilla* Duftschmid (Figure 1) which are capable of completely defoliating the plant." Stringent methods were employed before release of the insects, including screening under laboratory conditions in Europe to be sure all insects were free of parasitoids and disease. "Insects were released in New York, Pennsylvania, Maryland, Virginia, Minnesota, Oregon, and Washington state. Stocks of the three beetles were also sent to Canada, where their release was also approved." Predictions for the effectiveness of the experiment include a "reduction of purple loosestrife abundance to approximately 10% of its current level over approximately 90% of its range."

"Biological control of weeds is the human manipulation of a plant's natural enemies to reduce populations of the plant pest to an acceptable level...No introduced insect agents has ever exterminated either the target weed or a desirable plant (Harris 1988), nor have they ever switched hosts to become serious pests of crop plants (Crawley 1989)."



Swamp loosestrife *Decodon verticillatus* L. Ell. and Winged loosestrife *Lythrum alatum*, both native to North America and closely related to *L. salicaria*, were avoided by the three insect species. Large numbers of eggs of the three insect species were consumed at the field site by ladybird beetles, *Coleomegilla maculata* (M. Tauber and C. Tauber) and "predation of the *Galerucella* species by spiders was evident at all field sites in Europe."

The authors conclude: "...biological control of purple loosestrife focuses on an international environmental weed problem that cannot be controlled by conventional means. With support from federal and state agencies, we have brought together an international scientific advisory staff whose goal not only is to participate in and oversee the selection, screening, and introduction of an insect predator community to provide a long-lasting biological control mechanism for loosestrife, but also to develop a corresponding program of research and evaluation useful to the enhancement of future programs in this area. Only through increased visibility and credibility as a predictive science with proven implementation procedures based on rigorous experimental tests can we hope to integrate more successfully the practice of biological weed control into national and international efforts aimed at integrated pest management."

Article: *Biological Control of Purple Loosestrife—A case for using insects as control agents, after rigorous screening, and for integrating release strategies with research.*

Authors: Richard A. Malecki, Bernd Blossey, Stephen D. Hight, Dieter Schroeder, Loke T. Kok, and Jack R. Coulson.

Source: *BioScience*, November 1993, Vol. 43, No.10, pages 680-686.

Compiled by Carolyn Harstad from original article given to her by Fred Wooley, Naturalist at Pokagon State Park.

Wildflowers Poppin' Up for 4-H

"Oh, that's a pretty one!" exclaimed a young 4-Her rounding the trail in a local woods. What she had found was one of the over 300 varieties of local wildflowers that have started to pop up throughout the Owen County woods. Some of these are fantastic. Owen County 4-Hers who try this new project this year are in for a real treat. Collecting wildflowers is new for Owen County 4-H this year, but some Indiana counties have had successful wildflower projects done annually by 4-Hers for years.

Kendra Hart is a great wildflower hunter. Kendra is a member of the Willing Workers 4-H Club led by Teena Jennings. This is Kendra's second year in 4-H. Kendra takes bookmarks, foods and rabbits in 4-H, and additionally took the collections project last year. Kendra is the daughter of Ken and Lori Hart of Patricksburg.

Parents will find it very relaxing to walk through the woods with their children on wildflower hunts. Just about every 20-50 yards or so in a local woods you will find some kind of wildflower growing. On a sunny spring day you can stretch out with a book of wildflowers at every "find." By the time you help identify all the wildflowers your child will find, you will have a relaxing time where you can real-

ly unwind. Kids love finding these wildflowers—they are easy to find, but sporadic enough to make it interesting. Most of all they will love the time you spend with them as a parent doing something together.

Besides dandelions, the most common wildflower you will find now is the common blue violet or meadow violet. These are everywhere. If acid conditions are present, it can also invade lawns. Rumor has it that violet leaves can be cooked as spring greens or used in salads. The flowers are sometimes made into candies or jellies. Blue phlox will be found now on wooded banks along roadsides or along creek banks.

A plant that has a long mottled leaf and a fancy yellow flower is known as the fawn lily or trout lily. It has also been called adder's-tongue or dogtooth violet. One of the neatest wildflowers up now is called squirrel corn and its cousin Dutchman's breeches. Both of these are related to the cultivated old-fashioned bleeding heart. They look like bleeding heart, but are white with faint light blue or yellow at the bottom of a heart-shaped flower.

The new 4-H wildflower project lets 4-Hers find and collect 15 varieties. They can choose to draw these flowers if they

are artistic or easier still take pictures of the 15 flowers they find. This keeps the flowers in the woods where everyone can enjoy them. Of course another method of collection can be the old-fashioned pressing and drying method. The camera method might be the best one for the woods and for the 4-Her, but use the method you prefer. If you have questions about the 4-H wildflower project call me at 829-5020. You have until May 15 to join 4-H; contact us today.

The above article, written by 4-H coordinator Dave Schenck, appeared in the Spencer Evening World on the front page of the April 22nd issue. The 4-H wildflower project was originally written by President Carolyn Harstad several years ago, and was updated and promoted by Sophia and Dan Anderson. Information was given to Owen County 4-H last year, and it is encouraging to learn of increasing interest in this INPAWS program. It is now a three-year activity, with new sections added this spring. If you would like to get the project started in your county, please call Dan or Sophia Anderson at 317-849-3105, and we will see that you get the latest manual. We are hoping to make this a state-wide project in the next two years—Ed.

Top Ten Reasons Why I Am An INPAWS Member

by Diane Stippler

10. Sharing a common bond with members of other state plant and wildflower organizations.
9. Getting to meet some of the nicest and most knowledgeable "plant persons" in the state of Indiana, including other members of the Mike Homoya Fan Club.
8. Participating in hikes, trips and tours to gardens, fields, woods, bogs and dunes all over Indiana.
7. Receiving the extraordinary, professionally prepared, and informative newsletter.
6. Buying unusual and often hard-to-locate native plants at the World's Most Famous Plant Auction (my opinion) "commandeered" by our own Rolland Kontak.
5. Getting to sample Sophia Anderson's excellent wild edible delights at INPAWS functions.
4. Being privileged to educate other groups about activities impacting Indiana in areas of plant rescue and conservation, and being one member in a large organization which can make a difference when one alone cannot.
3. Attending the outstanding annual meeting in November, featuring nationally recognized plant and wildflower specialists and artists.
2. Going to the December Christmas Party at the home of gracious Carolyn and Peter Harstad.

And the No. 1 reason I continue to be an INPAWS member:

1. I can wear blue jeans to the meetings!

Diane Stippler, as you can see, is a very active INPAWS member, and her ten reasons listed above contain an excellent summary of our activities. Incidentally, Mr. Green Jeans would be welcome also.

huge numbers. The typical Lady's-slipper seed pod contains between 10,000 and 20,000 seeds! Orchid seeds are light because they lack the endosperm or food reserves that most seeds rely on for initial growth, much as the egg yolk nurtures developing bird embryos. Without endosperm, orchid seeds cannot germinate unless they become "infected" by certain soil fungi, which the seedlings actually digest to obtain the sugars, hormones, and other nutrients necessary for growth. Once a seedling is old enough to have leaves and roots, it can begin providing those substances for itself, and gradually becomes less dependent on the fungus for survival. Research on mature Yellow and Showy Lady's-slipper roots reveals very little fungus infection, so it appears that, for these species at least, the fungus becomes much less important as the plant grows older. It seems likely that root damage, not a lack of fungal partners, is primarily responsible for the decline of Pink Lady's-slippers under cultivation.

This summer we began an experiment along the lines of one described by Don Jacobs in *The Rock Garden Quarterly*, the bulletin of the North American Rock Garden Society. *C. acaule* plants rescued from a development site were carefully excavated—roots intact, and moved to several locations at Garden in the Woods. We receive many requests to rescue Pink Lady's-slippers from construction sites, but usually decline due to the expense and high failure rate. This time, however, volunteers actually removed the plants barerooted and carefully replanted them by laying them out on a bed of rotted leaves and lightly covering them with more leaves.

We are always hesitant to publicize such a project because we do not want to encourage wild-collecting. For this reason, and because it will be five years before we will know for sure if this method was successful, we have avoided going into too much detail, but we will

keep you posted. Once we are more confident that it will work, we may be more detailed about our methods. We hope that this knowledge will make long-term cultivation of Pink Lady's-slippers feasible when seed-grown, nursery-raised plants start to become available in a few years. (Part two of this article, describing the unusual reproduction and growth of the Pink Lady's-slipper, will appear in a subsequent issue of *New England Wild Flower*.)

Bill Cullina is propagator for the New England Wild Flower Society's Garden in the Woods in Framingham, Massachusetts. The article with references can be found in the Spring/summer issue of their journal/catalog. INPAWS thanks the author and NEWFS for permission to reprint. The second part of the article will be reprinted in INPAWS News after it becomes available—Ed.



MEMBERSHIP APPLICATION/RENEWAL

Annual dues pertain to the fiscal year January 1 through December 31. Dues paid after September 1 are applied to the following fiscal year.

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

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How did you hear about us?

6/97

Gifts do help. INPAWS donors at the *Patron, Sponsor* and *Corporate* levels will receive special recognition. All donations above *Student, Individual* and *Family* dues are most appreciated and can aid our mission. Donations are tax-deductible to the extent provided by law.

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

- Annual Meeting Auction Communications
 Conservation Fund Raising Governance
 Historian Hospitality Membership
 Native Plant Education Native Plant Rescue
 Newsletter Programs/Field Trips
 Publications Publicity Special Projects
 Speakers Bureau Volunteers Coordinator
 Other

Please complete this form and mail, along with your check made payable to:
Indiana Native Plant and Wildflower Society, or INPAWS
c/o Ruth Ann Ingraham • 6106 Kingsley Drive, Indianapolis, IN 46220.

still to come in 1997. . .

SUNDAY, JUNE 29, 1 PM

See the gardens that allowed the Indianapolis Zoo to become an accredited *Habitat Botanical Garden*. Tour will be led by Katie Booth of the Zoo's Horticulture Staff.

SATURDAY, JULY 26, 11 AM

Spring Mill State Park, lunch in the Oak Room and a hike, led by a park naturalist, to a glade above Donaldson Cave, and old-growth forest at Donaldson Woods.

SATURDAY, AUGUST 23, 2 PM

Tour of Spence Nursery in Muncie, followed by a pitch-in picnic at Mounds State Park in Anderson. Activities will be led by Kevin Tungesvick.

SATURDAY, SEPTEMBER 13, 10 AM-1PM

Plant and seed sale and slide presentation of plants offered for sale, at Holcomb Gardens on the Butler University campus, followed by a tour of the gardens and the prairie planting.

SATURDAY, OCTOBER 4, 7:30 AM

A one-day bus trip to three Indiana Dunes sites, Ivanhoe Dune and Swale, Miller's Woods, and West Beach. Hikes led by Paul Labus with The Nature Conservancy and INPAWS member Barbara Plampin of the Shirley Heinze Environmental Fund. We will stop on the way home at Jasper Pulaski State Fish and Wildlife Area about sunset to see sandhill crane migration, and then have dinner at a West Lafayette restaurant.

SATURDAY, NOVEMBER 8

Fourth Annual Meeting at DowElanco, time to be announced.

FRIDAY, DECEMBER 5, 5-10PM

Annual holiday party at the home of Carolyn and Peter Harstad.

Notices will be sent in advance • Kevin Tungesvick, program chairman • 317-354-2775



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