NOTES FROM THE ORGANIZERS

Hello again! We would again like to express our appreciation for all the interest shown in the Iowa Native Plant Society. Thanks to all the people who have attended INPS field trips/discussions, sent us ideas, and contributed money to cover printing and mailing costs of this Newsletter! Our Newsletter mailing list has grown to nearly 300 individuals and organizations!

Two INPS-sponsored events remain for 1995 - first, the informational meeting and field trip in northeast Iowa on September 9th at Backbone State Park. Also, the organizational meeting in Fort Dodge on October 21st is rapidly approaching. Further details and maps for these two events can be found elsewhere in the Newsletter.

The future success of INPS will be determined in large part by participation in the organizational meeting. WE WOULD LIKE TO REEMPHASIZE OUR DESIRE THAT BOTH AMATEUR AND PROFESSIONAL BOTANISTS TAKE ACTIVE ROLES IN THE LEADERSHIP OF INPS. We do not want to see this organization become "top-heavy" with professionals. Our #1 objective for the Society is to provide a forum for communication between all plant enthusiasts, amateur and professional alike. Please be ready to volunteer to fill leadership and committee positions.

ANNUAL DNR NATURAL HISTORY FORAY AND INPS FIELD TRIP

Plan to attend the annual DNR Natural History Foray on Saturday, September 9 in NE Iowa. INPS will sponsor a field trip/informational meeting in conjunction with the foray this year, which will begin at 10 AM at Backbone State Park (meet at the picnic shelter next to the camp store and overlooking the swimming beach at the south end of the park). After a brief introduction to new members about the Iowa Native Plant Society and discussion of INPS structure, we will move on to several botanically interesting sites to explore and look for unusual plants.

The first stop will be at the Backbone itself in Backbone State Park. A portion of the backbone is a narrow, exposed, rocky "hogsback" where a number of interesting prairie plants, fern and moss species can be found. Furthermore, this hogsback provides a spectacular vista overlooking the Maquoketa River many dozens of feet below.

After lunch (please bring a sack lunch and drink), we will carpool to one of the most botanically rich sites in all of Iowa: Bixby State Preserve. The dolomite and limestone rock outcrops here provide a cool microenvironment for many northern plant species; the rocks are literally dripping with ferns, mosses and liverworts. We will start our tour of Bixby in the vicinity of the ice cave, where we will see such plants as sullivantia, golden saxifrage, walking fern, rockbrake fern, twisted stalk, bulbet fern ... the list goes on and on. Then, a walk along the trail above and behind the ice cave will allow us to look down upon (but of course not walk upon) an algific talus slope. Many other unusual, northern plant species (e.g. Canada mayflower, nodding onion, nodding Trillium, wild sarsaparilla) will probably be encountered along this trail.

ORGANIZATIONAL MEETING AND FIELD TRIP

An afternoon and evening of events will take place on October 21st at Dolliver State Park and Fort Dodge to mark the official organization of the Iowa Native Plant Society. Afternoon field trips will highlight the ferns of Boneyard Hollow in Dolliver State Park and, depending on group size, of Woodman Hollow State Preserve. The moist, sandstone canyons in these two areas provide a haven for at least fifteen fern species. Don Farrar, author of several papers on the ferns of Woodman Hollow, will be on hand to help us with identification. Some fall color may also remain as a backdrop in these spectacular canyons. Boneyard Hollow will be an easy hike; Woodman Hollow is a bit more strenuous.

The evening meeting will begin with dinner at the Colonial Inn in Fort Dodge. Following dinner, and before we get to INPS business, we can all share in a slide show interlude. Bring your favorite Iowa plant or habitat slides or your "whatzits?" - someone may be able to identify those unknowns.

Also bring your suggestions, ideas, and input for the organizational business meeting. Discussion will focus on structure of the Society, committees, dues, and the future of INPS. Please don't be bashful about volunteering for leadership or committee positions - as the old saying goes, "Many hands make light work!" Let us know if you cannot attend the organizational meeting but would like to participate in the Society's leadership.

Schedule of activities:

Field trip, 1:00 - meet at Boneyard Hollow toward the north end of Dolliver State Park (see park map on last page). Dolliver is in Webster County, near Fort Dodge.

Dinner and meeting, 5:00 - Colonial Inn, 1306 A Street, on the west side of Fort Dodge, just north of the junction of US 169 and US 20 on the west side of the road (next to a Casey's store). The buffet dinner cost is $9.66, including tax and gratuities, payable that evening. Dress is casual.
Cryptogramma stelleri, slender rockbrake fern, courtesy of Denise Friedrick. Drawn at Bixby State Park - see it on September 9th.

ROCHESTER PRAIRIE FIELD TRIP

At least 25 people attended an INPS field trip led by Dr. Paul Christiansen to Rochester Prairie on Saturday, July 29. The day was exceptionally hot and humid, but no one was detered from venturing out onto this wonderfully diverse prairie to enjoy the mid-summer flower display.

Two colors were dominant on the prairie: yellow and white. Dr. Christiansen pointed out yellow flowering heads of such prairie forb species as rosinweed, grey-headed coneflower, cupplant, western sunflower, several types of goldenrod and black-eyed susan. In contrast, the tall white sprays of Culver's root flowers seemed to be everywhere, covering entire slopes. At least one other prairie forb with showy white flowering heads was found: wild quinine. Not to be ignored, several purple-flowered species were also spotted and pointed out by Dr. Christiansen to the group: horsemint, Canada and Illinois tick-trefoil, prairie petunia and leadplant.

After a relaxing lunch in the shade, many people in attendance reentered the prairie to look for more plants. Jim Scott, who helped compile a comprehensive list of plant species known to occur on Rochester Prairie, showed us several unusual species off the beaten path such as Indian plantain, sand milkweed and Tiger lily. At least two plants not previously known to occur at Rochester Prairie were found by the group: frostweed and cowbane. Bill recorded the plants we saw on the field trip, this list is included on the last page.

Thanks to Dr. Paul Christiansen and Jim Scott for sharing their knowledge of prairie plants with members of INPS!!

UPCOMING ACTMTIES SPONSORED BY OTHER ORGANIZATIONS

The Iowa Prairie Network and the Iowa Field Office of The Nature Conservancy sponsor many field trips through the year. To get information about these, contact the Iowa Prairie Network at 515/858-3878 (Shirley Shirley) and the Iowa Field Office of The Nature Conservancy at 515/244-5044. Some of the major, statewide or regional meetings include:

-- Hayden Prairie Rededication, September 8, 2 p.m., north entrance to Hayden Prairie (Howard Co. northwest of Cresco), sponsored by the Iowa Department of Natural Resources. For more information contact Daryl Howell at 515/281-8524.

-- Annual Natural History Foray, September 8-10, headquarters at Backbone State Park, with emphasis also on Bixby State Park and Mossy Glen State Preserve. Note our special meeting and field trip above in conjunction with the foray! The foray is sponsored by the Iowa Department of Natural Resources. Contact Daryl Howell at 515/281-8524 for information and maps.
Cryptogramma stelleri, slender rockbreak fern, courtesy of Denise Friedrick. Drawn at Bixby State Park - see it on September 9th.

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- The Nature Conservancy Annual Meeting, September 16, 9-5 pm., Loess Hills, Broken Kettle Grasslands Preserve in NW Iowa. For more information contact the Iowa Field Office of The Nature Conservancy at 515/244-5044. Information about INPS will be available at The Nature Conservancy Annual Meeting.

- Midwest Oak Savanna Ecosystem Conference, September 27-29, Springfield, MO. This conference is sponsored by the Missouri Department of Natural Resources, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, and others. Contact Ken McCarty, Missouri DNR, at 314/751-8660 for a registration packet or more information.
Common name: Cardinal-flower
Scientific name: *Lobelia cardinalis* L. - the genus commemorates Flemish herbalist Mathias de rObel (1538-1616), physician to James I of England; the specific epithet refers to the resemblance of the flower in color and shape to the miter worn by Roman Catholic high clergy.

Family: Bluebell family (Campanulaceae), Lobelia subfamily (Lobelioideae)

Cardinal-flower is surely one of the most conspicuous and visually stunning elements of our summer wetlands. Nothing in our native flora or in our gardens can begin to compare with its scarlet flowers for sheer brilliance. On a sunny day, the flowers glow dazzlingly, presenting a real challenge to nature photographers intent on a good photograph. The corolla is two-lipped, with two narrow lobes pointing up and three slightly broader ones pointing down. As in all members of the Lobelia subfamily, the stamens are fused into a column that emerges from between the two upper corolla lobes. The flowers are borne in a long raceme at the top of the (usually) unbranched stem, which may be anywhere from a foot to four feet or more tall. The plants perennate by producing several small offset rosettes at the base of the stem late in the fall; from these rosettes the next year's flowering plants grow.

Cardinal-flower has one of the widest distributions of any of our native wildflowers: from southern New Brunswick to central Florida, west to southern California and south through Mexico and Central America to northern Colombia. It may be found in a wide variety of shaded or sunny wetland habitats, including streambanks, wet ditches, pond and lake margins, floodplain forests, marshes, bogs, and wet prairie. In Iowa, it is confined to the eastern half of the state, and most commonly encountered along the major rivers. I have seen it not infrequently in open wetlands on the floodplain of the Mississippi and Iowa Rivers in southeastern Iowa, and on margins of forests along the upper Wapsipinicon River in Black Hawk and Bremer counties. Flowering generally commences during the last half of July, and continues through the end of September or early October. The plant is scarce enough throughout its range that encountering it in the field is always cause for at least a small celebration.

Cardinal-flower has been grown in gardens since the early 1600’s, when Samuel de Champlain sent seeds from Quebec to Jean Robin, herbalist to Henry IV of France. Though obviously well-suited to any sort of water garden, it also does surprisingly well under ordinary conditions in perennial beds and borders. It will be especially useful to those trying to attract the ruby-throated hummingbird (*Arellivocllls ecubris*) to their yard, as this bird is cardinal-flower’s sole pollinator. Both plants and seeds are widely available from both mainstream and specialty nurseries and seed companies. However, Midwestern gardeners should be aware that much of this commercially available material is derived from narrow-leaved tropical and subtropical populations (often called *L. spendens* or *L. ju/gens* in garden literature); the commonly available cultivars “Bee's Flame”, "Illumination", and "Queen Victoria" are all of this type. Such plants are often not reliably cold hardy in Iowa, though the catalogs may indicate hardiness to USDA Zone 3. Recently, several cultivars derived from hardier broad-leaved northern populations have been introduced, including "Angel Song", "Arabella’s Vision", and "Twilight Zone". Perhaps the best advice for Iowa gardeners is to collect seed (which is generally produced abundantly) from local populations late in the fall for immediate or mid-winter indoor sowing. Once established in the garden, it is advisable to propagate new plants every few years, as even under the best conditions in nature, cardinal-flower plants tend to be relatively rare.

Cardinal-flower was used medicinally by various native peoples, particularly for problems affecting the urinary tract. The Tzotzil of Mexico cure flatulence by drinking boiled cardinal-flower roots mixed with sugar. Among the Mesquakie, the plant was regarded as a love potion, particularly for quarreling couples. Friends would clandestinely mix the finely chopped roots into the couple's food, in hopes of bringing about reconciliation. Similarly, the Pawnee used the roots and flowers as one ingredient of a charm designed to render the bearer irresistibly attractive to others. In Nebraska, near the limits of the species range, medicine men planted cardinal-flowers to ensure an adequate supply.

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Also available to gardeners are hybrids of cardinal-flower with its blue-flowered sister-species, Great Blue Lobelia (L. siphilitica), another North American native. As every child knows, when you mix red and blue you get purple, and that is exactly the case here: the hybrids (at least the first generation) feature velvety deep royal purple flowers. In gardening books, you will find these hybrids called L. xgerardi, L. xhybrida, L. x milleri, and L. xvedrariensis, but the correct name is L. xspeciosa. Numerous cultivars are available, including "Pink Flamingo", "Pink Elephant", "Brightness", "Dark Crusader", and "Will Scarlet". This cross also has occurred spontaneously in nature, in Illinois, Missouri, and Ontario, and should be sought in Iowa wherever the two species cohabit.

(The illustration on this page and of purple loosestrife on the following page are taken from The New Britton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada, by Henry A. Gleason, 1952.)
It is easy to understand why people want purple loosestrife (*Lythrum salicaria*) for their gardens. Its beautiful, persistent purple blooms, its full shape, and its tall stature create a striking backdrop for a garden or landscape. It is also hardy, tolerant of a wide variety of moisture conditions, and virtually free of insect pests and disease. Beekeepers value purple loosestrife for its long blooming season (July through September) and numerous flowers.

However, this popular perennial has a dark side. Those same attributes that make this plant so desirable are also the very ones that make it such a formidable invader of wetlands. It is a non-native species whose distribution and spread has been aided by the absence of natural enemies and by the disturbance of natural wetland habitats, primarily by human activity. Loosestrife is responsible for the degradation of many prime wetland areas throughout the eastern half of the United States and Canada. In Iowa, it now occurs “wild” along many waterways, streams, ponds, and lakes. Large stands of *Lythrum* alter both the structure and function of wetland systems by replacing native plant species, thereby eliminating the natural foods and cover essential to many wetland wildlife habitats. Consequently, the animals that rely on the native vegetation for food, shelter, and breeding areas cannot survive in these heavily infested areas.

Waterfowl cannot feed on loosestrife, muskrats and other species dependent on cattail are affected, fish species lose spawning habitat and food sources, and zooplankton may not thrive on loosestrife as well as native vegetation.

Loosestrife’s main mode of invasion is through seed dispersal. A single, mature plant can produce more than 2.5 million seeds annually, so the seed bank beneath a well-established stand of purple loosestrife can be immense. These seeds (the size of ground pepper) are long-lived and easily dispersed. Animals can transport seed in their fur, feathers, or in mud adhering to their feet, and people can transport seed on their clothing, muddy boots, or vehicles. Bees and wasps are effective pollinators of loosestrife, and are also possible agents of dispersal.

No effective method is available to control *L. salicaria*, except where it occurs in small, localized stands that can be intensively managed. Physical removal must include all vegetative parts, as stem and root pieces can establish new plants. The tips of defoliated stems are capable of forming a rosette of new leaves and roots that may break off as a “plantlet” and float away. Disturbances or control efforts that cut up the plant are therefore conducive to its spread rather than destruction. Other control techniques used include water-level manipulation, mowing or cutting, burning, and herbicide application. Although these methods can eliminate small and young stands, they have proven ineffective against large infestations. In addition, they are costly, labor intensive, require long-term maintenance, and can be environmentally degrading.

Like most introduced species, purple loosestrife is impossible to eliminate once it becomes established. Therefore, efforts are being made to develop effective long-term methods to limit the number of small infestations, where the potential for control is higher, and to reduce large infestations, allowing native vegetation to reestablish itself. Biological control methods may offer some hope. For the past 5 years, Dr. Richard Malecki of the U.S. Fish and Wildlife Service and participants in the Department of Natural Resources have been investigating biological control methods. Six herbivorous insects from Europe have shown potential: two leaf-feeding beetles, one root-feeding weevil, and three flower-feeding insects. If biological controls prove effective, labor costs and herbicide use will be reduced and negative impacts can be minimized.

Loosestrife is now listed as a noxious weed in 13 states, where its importation and distribution is prohibited. In Iowa, *L. salicaria* is considered a secondary noxious weed. Several varieties are allowed, to be grown only in ornamental gardens. Unfortunately, *Lythrum salicaria* cannot be distinguished from the non-aggressive *Lythrum virginatum*, now commonly sold in garden centers. For this reason, many states have broadened their restrictions to include all cultivars and non-native species of *Lythrum* so that their restrictions on purple loosestrife can be enforced. Well-meaning nurserymen and commercial growers currently sell several cultivars claimed to be sterile. However, it is now proven by scientific evidence that no purple loosestrife cultivar is sterile. Seed germination studies have shown that after several generations, reversion to the fertile state of the parent commonly results. These offspring, therefore, could be capable of aggressively invading wetland habitat.

Because of its appeal as a perennial garden plant, intentional introduction of the plant has continued. But the negative impacts on aquatic ecosystems resulting from invasion of purple loosestrife far outweigh its attributes as an attractive ornamental and honey producing plant. Other resources will be at risk if purple loosestrife continues to spread. For example, millions of dollars invested in wetland restorations by the state, federal government, and private organizations such as Ducks Unlimited will be wasted. There will be fewer opportunities for waterfowl hunters, licensed trappers and wildlife observers, and local economies will lose income from these activities. Fishing opportunities will be affected as well, especially for certain game species. There will be increased costs for roadside and agricultural ditch maintenance. Lowland pastures and hayfields will degrade in forage value.

Public awareness is one of the most important components in the control of purple loosestrife. Gardeners can be extremely helpful by reporting infestations, discontinuing plantings, removing or controlling plants, and promoting legislation. There are plants that can be used in the garden in lieu of loosestrife, such as liatris, physostegia (obedient plant), phlox, or monarda. While these plants do not look exactly like loosestrife, they come in similar colors and are less aggressive invaders.
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REGISTRATION FORM FOR ORGANIZATIONAL MEETING, OCTOBER 21st

Name: ____________________________

Address: __________________________

Phone No.: _________________________