

# Iowa Native Plant Society

## Newsletter

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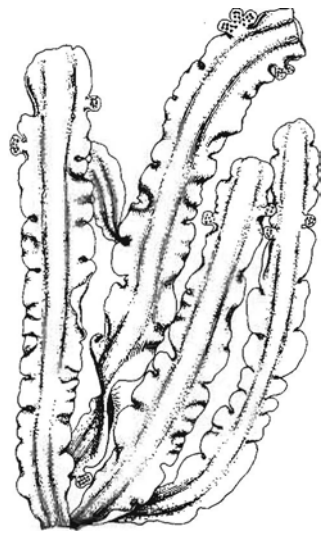
### Controversy Amongst the Dunes

by Charlie Butterworth

They say that there are two seasons in Iowa - winter and "road-building". Yet there is one road building project that is on-hold during this road-building season. The construction of a new bypass around the town of Eddyville in Wapello County in southeast Iowa was intended to alleviate downtown traffic problems that would be caused by upgrading of Highway 63. The original route for the bypass, to the east of Eddyville would have resulted in a sixty foot cutting through an area of the Eddyville sand-dune/wetland complex. But why is this area so important?

The complex of dunes, wetlands and prairies, unique in Iowa that run for just under five miles to the east of Eddyville is home to a bewildering array of plants and animals. Amongst the animal life found in the area are the Southern Bog lemming; Blanding's turtle and possibly Ornate Box turtle; snakes and lizards; insects such as dragonflies and damselflies, and numerous amphibians. The list of plant species so far documented has around 600 names and includes some of Iowa's rarest plants. Some of these rarities are the state endangered Pale Green orchid (*Platanthera flava* var. *herbiola*); the Northern Adder's-tongue fern (*Ophioglossum pusillum*) and Three-seeded Mercury (*Acalypha gracilens*), both 'state special concerns' and the presumed orchid hybrid of Nodding Ladies'-tresses X Great Plains Ladies'-tresses (*Spiranthes cernua* X *S. magnicamporum*).

In early June this year, Diana Horton, botanist at the University of Iowa added another rarity to the list of threatened species living in the Eddyville Dune complex. The innocuous Appalachian liverwort (*Aneura maxima*), found on the west side of the sand dune area is a find indeed. Found in only a few localities in the hills of North Carolina, Tennessee, West Virginia, Pennsylvania, New York and Vermont the population happily living here in Iowa can definitely be described as 'disjunct' (growing outside the usual distributional area). Diana Horton ranks the amazing find as one of the best in her scientific career and reckons that the population is a relict dating back to a time when the species was much more widely distributed throughout all of southeastern North America.



*Aneura maxima*

So, what will become of the Iowa Department of Transportation's plans to construct a bypass around Eddyville? Will the birds, animals and plants of the dunes continue to have a merry existence in the area? Will the relictual population of *Aneura maxima* remain undisturbed in its disjunct isolation? Time will tell, but at least whilst committees, public inquiries, and environmental risk assessments plot their future, the biological residents of the Eddyville Dunes can sleep these summer nights. Let us hope that their future in this unique area of dunes is a long one. Stay tuned to this channel for more information.

Illustration from Schuster, Rudolf M. 1992. *The Hepaticae and Anthocerotae of North America. vol 5. Field Museum of Natural History, Chicago*

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## Leaves from the President's Notebook...

President: Ed Freese  
120 Sixth Ave. S.W.  
Waverly, IA 50677

Vice-President: Fred Crane  
7660 Harbach Blvd.  
Des Moines, IA 50325-1236  
515-279-8440  
fc0861r@acad.drake.edu

Secretary:

Treasurer: Mary Brown  
330 Windsor Dr.  
Iowa City, IA 52245  
(319) 338-3875  
mlbrown@blue.weeg.  
uiowa.edu

Issues/Action Committee:  
Jane Clark  
9871 Lincoln Ave.  
Clive, IA 50325  
(515) 223-5047  
jrclark@radiks.net

Program Committee:  
Mary Brown (see above)

Judy Felder  
335 Beldon Ave.  
Iowa City, IA 52246  
(319) 351-7718  
rfelder@blue.weeg.uiowa.edu

Mark Leoschke  
2212 East Rose Ave. #13  
Des Moines, IA 50320-2613  
mleosch@max.state.ia.us

William Norris  
Dept. of Botany, ISU  
Ames, IA 50011-1020  
(515) 432-0673  
wrnorris@iastate.edu

Tom Rosburg  
P.O. Box 234  
Colo, IA 50056  
(515) 377-2930  
thomas.rosburg@drake.edu

William C. Watson  
P.O. Box 281  
Cedar Falls, IA 50613

Historian: Deborah Q. Lewis  
Dept. of Botany, ISU  
Ames, IA 50011-1020  
(515) 294-9499  
dlewis@iastate.edu

Editor: Charlie Butterworth  
Dept. of Botany  
ISU, Ames, IA 50011  
(515) 294-4035  
cbutter@iastate.edu



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Enjoying this Iowa summer weather? If you've been blown away, flooded out, or suffered from the heat and humidity you are experiencing the weather that makes this Iowa - land of prairies, savannas, marshes....

The weather has done a lot of damage or "natural disturbance" to our parks as well as our backyards. In the long-run, new open areas in our woodlands will provide habitat in which many species can get a start. The diversity of the area can be maintained or improved by the new successional sequence in the clearing. Such "natural disturbances" may be the only means of survival for a rare plant or community type. Sometimes conservation protection measures can remove or alter a "natural disturbance" that may eventually squeeze out the plant or animal we intended to maintain. So, the correct procedure, initially may be to study the requirements of species niche then implementing the appropriate management.

The Fall meeting of November 7<sup>th</sup> seems distant, but time has a habit of flying-by. Everyone is invited to the University of Northern Iowa to hear a presentation on Iowan orchids by Dr. Paul Whitson. Later there will be a business meeting to cover society matters. There will also be an election of officers for 1998-1999. If you are interested in being an officer or serving on the committee, contact the society. Also this Fall, we will begin planning activities for next year, so send us ideas on field-trips or speakers.

*Ed Freese*

## Editor's Messages:

I am sure that many of you will have noticed a few changes in the newsletter since the last issue. Apart from different articles, the style and layout has changed slightly. In part this is due to the change in editorship and changes in software used to produce the finished product. Whereas Suzanne used Microsoft Word for the newsletter, I am using Adobe Pagemaker which gives more control over layout and styles than Word. Some of these changes include: font change for articles from Times Roman to Minion (reputed to have better readability) and justified columns. It is also hoped that the print quality of the finished newsletter will be improved without additional costs, by processing images digitally and using original high-quality printouts for all copies of the newsletters rather than xeroxes taken from a master-copy.

As far as the submission of articles is concerned, there are very few changes in format required. Articles produced on a computer are preferred and should be in a common text format such as Microsoft Word or Word-perfect. Please don't indent paragraphs or put an extra carriage-return between them (it might not look too good, but it all gets sorted out in Pagemaker). For those without access to computers, typed manuscripts are preferable to hand-written as they can be scanned and taken through an 'optical character recognition system' to give good digital copy. But, if you have to send in articles that are hand-written, don't worry as my typing skills will certainly welcome the practice!

Suzanne, although busy with the completion of her Ph.D. here at Iowa State University, will remain active with the INPS over the next few months; expect some new art-work from her for regular newsletter columns. Remember, without articles, your newsletter would be nothing but blank-pages, so keep the material coming in. Please submit any articles, letters and notes to me at Iowa State University.

## Joint Field Trip with the Missouri Native Plant Society

by William Norris

A joint field trip with the MONPS, on Saturday, June 21 was attended by about 25 participants, most of whom hailed from south of the border (Missouri, of course). The morning included a trip to the Helton Prairie Natural Area in Harrison County, MO, where a wonderful display of wildflowers greeted us. This is a historic site for the federally endangered Mead's milkweed (*Asclepias meadii*), but we were unsuccessful in locating it. We saw a small number of federally endangered western prairie fringed orchids (*Platanthera praeclara*) in full blossom; a rare sight here and in Iowa.

From there we drove to a wetland/wet prairie at the Chloe Lowry Marsh Conservation Area in nearby Mercer County, MO. This site reminded me of several sites in Iowa, notably Doolittle Prairie in Story County. We encountered lots of sedges, blue-joint grass and associated wet prairie plants such as skullcap (*Scutellaria galericulata*), marsh bedstraw (*Galium obtusum*) and western ironweed (*Verno-*

*niafasciculata*). Although the flora was rather familiar to me, I was startled to learn that this site was a "one of a kind" for Missouri, where a number of plant species find their only occurrence in the "Show-Me" state. Therefore, many of the Missouri folks had a wide-eyed "that's the first time I've seen that" look on their faces during our visit to this wetland, much like the one I wore at the Helton Prairie earlier in the day.

In the afternoon, we crossed the border to a prairie in the Ringgold Wildlife Area in Ringgold County, Iowa. Here, we walked-in for about a mile across open, rolling hills to enjoy a colorful display of prairie wildflowers. The wide, open landscape was as much a star here as the plants, where we watched occasional clouds march from one horizon to horizon against a brilliant (and radiant) blue sky.

This was a wonderful opportunity to meet with fellow plant enthusiasts from another state and hear them talk about their own native plant society, how it began, how it's evolved over 20 years, and where it's going. Many thanks to Sibylla Brown of Leon for graciously presiding over the Iowa portion of this joint field trip.

## The Eddyville Dunes Field Trip

by Deb Lewis

The July 11<sup>th</sup> field trip to the Eddyville Dune/Swale complex may have set a new record for attendance, as at least sixty folk of all ages wanted to see the significance of the dunes area. Recent publicity of the dunes in the *Des Moines Register* and local newspapers, and the co-sponsoring of the trip by the INPS, the Iowa Prairie Network and the Central Iowa group of the Sierra Club helped boost the participation. Glenda Buenger and Pat McAdams handled large crowds and many questions with ease; our thanks to them for all their work in organizing and leading the field trip.

First stop was a site where Pat and Glenda had found pale green or tuberclad orchids (*Platanthera flava* var. *herbiola*), on Iowa's list of endangered species. Last year, these orchids were in bloom during early to mid-July, prompting the timing of this field trip. This year, the plants had bloomed in early June. Still, it was great to see this rare species doing well on the site, even if we didn't see the distinctive flowers. The site also had a surprising abundance of soft rush (*Juncus effusus*), a state "special concern" species. Diana Horton's exciting find of the disjunct liverwort *Aneura maxima* (reported in the *Des Moines Register*, 6/19/98) was made nearby on the other side of the road. On this trip, Mark Widrlechner found *Rubus missouricus*, another species to add to the growing list of plants known from the dunes, in the same area as the liverwort.

After lunch we visited the Teno Farm, a drier site on the dunes. Buttonweed (*Diodea teres*), another "Iowa special concern" species was an interesting find, but the photographers in the group were even more thrilled by the showier prickly-pear cactus (*Opuntia humifusa*) in bloom just a few feet away. The dry sand starkly contrasted with a shallow pond, filled with a wonderful array of floating-leaved and emergent wetland plants.

A special treat for me was the pleasure of both getting to see some INPS friends and meeting for the first time some of you who were there. Good weather, neat plants in an interesting habitat, glimpses of other wildlife (six-lined racerunner lizards, numerous dragonflies and damselflies, reports of a regal fritillary and an unidentified snake), knowledgeable leaders and enthusiastic participants - who could ask for anything more?

Glenda and Pat have been closely monitoring the proposed highway re-routing project that may impact the dunes area, and have been sharing this information with others who are concerned about the potential habitat loss that may occur. If you are interested in getting updates about the project and new findings on the dunes, send them a note: 2282 Teller Avenue, Rose Hill, IA 52586.

## A Tale of Two Sedges

by William Norris

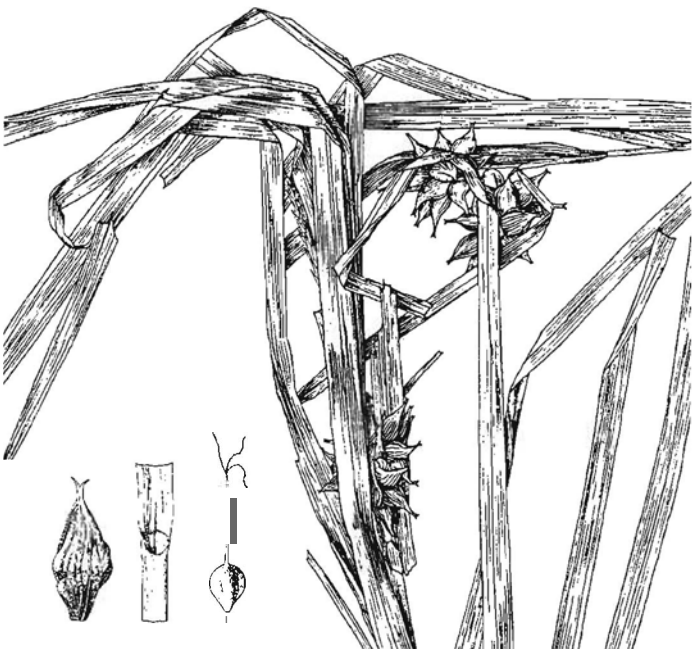
A floodplain forest during an Iowa mid-summer can be a hellish place. Mosquitoes, nettles as tall as your chest, unseen downed logs, unforeseen and impassable water channels. These are all encountered in such habitats with little effort. I have heard more people use bad language while stumbling through...

But wait! There are rewards for those brave enough to visit an Iowa bottomland in June or July (though from what I've seen after spending most of the past seven summers working in the woods, such courage is in very short supply). For instance, the floodplain forest is the preferred habitat of such Iowa beauties as the cardinal flower (*Lobelia cardinalis*) and poppy mallow (*Callirhoe* spp.). And, I am always thankful to find pastures of orange-blossomed jewelweed (*Impatiens* spp.) because the juices in their stems offer soothing relief to the pain inflicted by the nettles.

About six years ago I chose to spend part of one June day in a floodplain forest in an Ames city park, before the nettles were particularly high or vicious. After walking about for a little while, I found a large population of a showy, grass-like plant whose identity was foreign to me. It had a round fruiting head much like a bur-reed, which it most certainly was not. Like any curious botanist, I plucked one healthy plant and brought it back to the herbarium in Bessey Hall at ISU to search for its name.

The rules of the herbarium are "Do Not Bring Live Material Inside". So, I carefully propped this plant up against the wall in the hallway just outside the herbarium before

entering. I called several friends, including herbarium curator Deb Lewis, into the hallway to look at the plant before we plunged into the plant books to search for its identity. At least one passerby stopped in his tracks to look at this specimen and exclaimed: "Bill that's a neat plant! What is it?"



*Carex grayii* - Gray's sedge

The strong triangular stems of this plant were a dead give-away: we had a sedge on our hands. We leafed through the classic treatment of the genus *Carex*, "North American Carices" by Kenneth Kent Mackenzie (long out of print) and quickly descended upon *Carex grayii* - Gray's sedge. At least, that's what I'll call it because the majority of sedges have no common names. This is probably one of the reasons why the many botanists (amateur and professionals alike) tend to overlook sedges (conveniently) when conducting botanical inventories or leading wildflower hikes.

Back out to the hallway, I encountered the same friend who had recently asked about the identity of this attractive plant.

"It's a sedge" I announced,

"WHHATT!?!?" My friend almost choked! "It can't be!!"

The thought that a sedge, a *Carex*, could be the subject of admiration, for even a minute, was impossible to fathom.

I was reminded of this incident in June when, looking for plants in another Ames floodplain, I found a large, healthy population of Gray's sedge. And I have to say, at the time, it was the most attractive plant in blossom - no apologies!

As a footnote, I have to add that *Carex grayi* has a first cousin in the sedge world. Its name is *Carex lupulina*. This sedge is so conspicuous and distinctive that it deserves a common name: how about "large-fruited sedge"? *Carex lupulina* has a much more elongate fruiting head than *C. grayi*; the two species are hard to confuse even for those who haven't the time of day to give to sedge identification. I have encountered this species primarily in eastern Iowa, exclusively in floodplain forests.

Never had I seen the two together in the same location until June last year, when Ed Freese approached me with both species in hand during an INPS field trip at the Swamp White

Oak Preserve in Muscatine County. Although there are six records of *C. lupulina*'s occurrence in Story County in central Iowa, mostly from the turn of the century, I had not seen this plant here. That is, until today. A local plant enthusiast, Jimmie Thompson, collected it along the Skunk River near Gilbert. He gave the specimen to Deb Lewis for identification who, in turn showed it to me.

So, in a few days Deb and I will muster up courage to brave the nettles and the mosquitoes to go out and see this sedge for ourselves. WISH US LUCK!

*Illustrations from Mackenzie, Kenneth K. 1940. North American Cariceae. New York Botanical Garden, New York.*

## Fen - a Special Kind of Wetland

by Mark Leoschke & John Pearson

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**W**hat the heck is a fen? is a common response on hearing this term for the first time. Despite their obscure name, fens are a distinctive part of Iowa's natural heritage. Fens are a special kind of wetland characterized by quaking organic soils infiltrated by cold groundwater seepages. Typically, they are cloaked by sedges and other water-tolerant herbs, and dotted with such wildflowers as blue lobelia, sneezeweed and flat-top aster. Shrubs and trees are generally uncommon on fens.

Fens are sometimes called "hanging bogs" because they are frequently found on hillsides in association with springs and seeps. Some fens and fen-like areas also occur on low stream terraces and in small basins. Like bogs, fens are composed of highly organic soils constantly saturated with water. But the soil of a fen is muck, dead plants so thoroughly rotted the soil looks like lakebottom silt. In contrast, crumbling a handful of bog soil, or true peat, shows recognizable bits of plant stems. Bogs have very acidic water, but the groundwater in fens is alkaline, neutral or only slightly acidic. Fen plants get most of their nutrients from groundwater, but bog plants must scrape by with the nutrients in rain and snow.

Iowa has three types of fens. Nutrient-poor fens, or poor fens, are very bog-like because they are permeated with slightly acidic water. Dead Man's Lake, a state preserve in Pilot Knob State Park, is the only example of this type in Iowa. Nutrient-rich fens, or rich fens, are permeated by water that is circumneutral (neither particularly acid or alkaline). This type occurs mostly in eastern Iowa, but only a few examples are in parks or preserves. The Rowley Wildlife Area, owned by the Buchanan County Conservation

Board and the Cedar Hills Sand Prairie State Preserve, owned by The Nature Conservancy contain nutrient-rich fens. Very nutrient-rich fens, or very rich fens, are permeated by alkaline water and occur primarily in the Great Lakes region of northwestern Iowa. The most famous example, known throughout the Midwest, is the Silver Lake Fen State Preserve, a portion of a large wildlife management area owned by the DNR. Iowa naturalists have long known these very nutrient rich fens with their distinctive calcium carbonate ("tufa" or tiny bits of limestone) deposits. Only in recent years have scientists recognized the presence of the other two types in the state.

Aside from the values attributed to wetlands in general - wildlife habitat, scenery, watershed protection - fens are home to more than 200 species of wildflowers; some live only in fens. Considering that there are only about 1,500 native plant species in Iowa, conservation of fens alone could mean preserving about 13 percent of our state's heritage of wildflowers. Fens are also home to animals, ranging from game birds such as the common snipe to rare butterflies such as the Baltimore checkerspot.

Iowa fens have over 20 species of plants considered rare in the state. Some of these are totally restricted to fens, while others can also be found in wet-mesic prairies and sedge meadows. Several of these rare species that are restricted to fens in Iowa are more common further north and find that only the cool, circumneutral muck of fens mimics their northern habitats.

*continued on inside back cover.*

## Iowa's Very Own III. Iowa Hybrid Squirrel-tail *xElyhordeum iowense* R. W. Pohl

by Thomas G. Lammers

It was the summer of 1964 and Ames High School student Charles Crane had found something odd. Like many farm youths in Iowa, Charlie was interested in nature. He had collected rocks and fossils since grade school, and more recently started looking at trees and wildflowers. Now, at 15, he plunged headlong into the often intimidating world of the grass family. His high school biology teacher had loaned Charlie a copy of "How to Know the Grasses" (1954), an identification guide by Iowa State University botany professor and grass specialist Richard Walter Pohl (1916-1993). With its clear, well-written keys, Charlie could identify most grasses growing around his family's farm west of Ames. But in the ditches along County Line Road, just south of the drive-in theater on US Hwy 30, there was one grass that Charlie couldn't find in Dr. Pohl's book.

The odd grass certainly wasn't scarce. There were more than 75 clumps of it, growing on both sides of the gravel road for a distance of nearly two-tenths of a mile. The mystery grass resembled squirrel-tail barley (*Hordeum jubatum* L.), a species common on roadsides and overgrazed pastures throughout the Midwest. In particular, the bushy-looking inflorescence broke up into segments at each joint, a characteristic of squirrel-tail. However, this disarticulation did not occur till rather late in the season compared to squirrel-tail. Even more odd was the fact that these segments bore three spikelets of equal size, each containing two tiny flowers. In squirrel-tail, each segment of the spike bore one large central floret flanked by two reduced ones, with a single floret in each.

Not long after finding the odd grass, PoW came to the high school to lead a tour of the campus prairie remnant (named in Pohl's honor in 1997). Charlie deliberately missed the school bus that afternoon so that he would have an excuse to join the tour. Out on the prairie, he showed PoW a sprig of the mystery grass, asking if it was possibly streambank wild-rye (*Elymus riparius* Wieg.). Pohl replied "no:" and asked where he had found it. A few days later, Charlie directed him to the population and PoW gathered additional specimens.

Examination of floral spikes and leaves suggested that Charlie's mystery grass was a hybrid, the result of one grass species pollinating another. Seed formed in this way would grow into plants that combined, in various ways, physical characteristics of the two parental species. Turning to the microscope, Pohl confirmed this hypothesis. First, the pollen was examined. Every grain was shrunken, collapsed, and unable to effect fertilization. Increased magnification revealed the cause of this male sterility. The cells that give rise

to pollen grains showed the same number of chromosomes as squirrel-tail barley, 28. However, in squirrel-tail as in most normal organisms, the chromosomes pair up: one member of each pair from the maternal (seed) and paternal (pollen) parent. In the mystery grass, however, many of the chromosomes would not pair, or if they did, they did so in highly erratic ways. This confirmed that the genetic material from the pollen parent had been quite different from that of the seed parent. In other words, Charlie's mystery grass was indeed a hybrid, combining genetic material from two disparate grasses.

But which two grasses? Obviously, squirrel-tail was one parent; overall, it looked very much like the hybrid and occurred in the same roadside ditch, usually very near the hybrids. But the other parent? Several other grasses grew in the ditch, but after careful comparison of physical traits, Pohl eliminated all candidates but one: downy wild-rye, *Elymus villosus* MuW., a species of moist woodland and floodplains, which also has 28 chromosomes. In downy wild-rye, the spike does not disarticulate at all (accounting for the tardiness in the hybrid), while the spikelets at each node are paired and of equal size, containing two florets (accounting for the presence of three equal, biflowered spikelets in the hybrid). Other features of the hybrid's leaves and flowers were found to be intermediate.

This was the very first time that a hybrid involving these two species had been discovered, despite the fact that their ranges overlap extensively in eastern and central North America. Yet, the cross seemed to have occurred repeatedly along County Line Road. Since the hybrid was sterile, each of the 75 clumps was the result of a separate hybridization event. What was so special about this spot? Why had these two species hybridized here on 75 or more separate occasions, but nowhere else on earth? Dr. Pohl liked to suggest, with a twinkle in his eye, that the "passion pit" (drive-in theater) half-a-mile up the road was somehow to blame for these plants' promiscuity. A more prosaic answer is that ordinarily, downy wild-rye and squirrel-tail barley occupy very different habitats and thus are denied the opportunity for miscegenation. The former is a species of moist woodlands; its presence in the prairie-like roadside habitat of squirrel-tail was highly anomalous and largely inexplicable.

One way to denote hybrids is with a pseudomathematic formula, utilizing the multiplication sign: *Elymus villosus* x *Hordeum jubatum*. But one is also permitted to give hybrids a binomial, in a manner parallel to ordinary species, but again employing the multiplication sign. If the hybrid involves two species of the same genus, the multiplication sign

precedes the specific epithet, e.g., *Quercus marilandica* Muenchh. x *Q. velutina* Lam. = *Q. xbushii* Sarg. But if the hybrid involves species of different genera (a far rarer occurrence), a hybrid generic name is coined, with the multiplication sign preceding it. The "genus" name *xElyhordeum* Mansf. had been created earlier to accommodate hybrids involving species of *Elymus* 1. and *Hordeum* 1. For example, the hybrid of squirrel-tail with Virginia wild-rye (*Elymus virginicus* 1.) is called *xElyhordeum montanense* (Scribn.) Bowden, while that with Canada wild-rye (*Elymus canadensis* 1.) is *xElyhordeum dakotense* (Bowden) Bowden. Pohl patriotically christened the new hybrid *xElyhordeum iowense*. The formal description appeared in the July-September 1966 issue of the botanical journal *Brittonia*. The type specimen, PoW 9743 from the Story County side of the road, is deposited in the Ada Hayden Herbarium at Iowa State University.

Some botanists believe squirrel-tail and its relatives should be placed in a genus distinct from the true barley (*Hordeum vulgare* 1.) grown as a cereal crop. In this case,

squirrel-tail becomes *Critesion jubatum* (1.) Nevski, and its hybrid with downy wild-rye becomes *xElytesion iowense* (R. W. Pohl) Barkworth & D. R. Dewey. Either name is correct, depending on your opinion regarding the relationship of squirrel-tail barley to the cultivated cereal.

*xElyhordeum iowense* is truly Iowa's very own, as it has not been found anywhere else. Sadly, this botanical mule is extinct in nature. When the Department of Transportation relocated US Hwy 30 so as to bypass Ames on the south, the new route ran right through the hybrid population, destroying it. But while "extinction is forever" as regards true species, interspecific hybrids may be created anew, wherever the parent species come together in a suitable habitat. So it is possible that *xElyhordeum iowense* may appear again someday, wherever downy wild-rye strays onto roadsides from its accustomed haunts. Even if this resurrection occurs at some locale beyond the Mississippi or Missouri, the hybrid's name will mark it as one of Iowa's very own!

## Rescue Mission:

### *Lomatium foeniculaceum* (biscuit root)

by Tom Rosburg

**B**iscuit root, a member of the parsley family is found throughout the Great Plains from North Dakota to southern Oklahoma on dry prairies. In Iowa it is listed as endangered due to the few populations found in extreme northwest and southwest portions of the state. Typically, biscuit root is an acaulescent (basal leaves, no stem) perennial to 50 cm tall. The lace like leaves are several times compound, the ultimate leaflets 1-3 mm long and about 1 mm wide. In appearance, biscuit root is reminiscent of wild carrot (*Daucus carota*). In fact, of the two subspecies of *Lomatium foeniculaceum* found in the Great Plains, the southern variety is named subsp. *daucifolium* due to its carrot-like appearance.

From early to mid-May umbels of yellow flowers are produced. Pubescence (hairiness) of the ovaries allows the two subspecies to be differentiated. Subspecies *daucifolium* has hairless ovaries and is more common than subsp. *foeniculaceum* in the southern Great Plains from southeast Nebraska to southern Oklahoma. *L. foeniculaceum* subsp. *foeniculaceum* has hairy ovaries. It occurs throughout the Great Plains but is more common in the northern states. In Iowa, it has been recorded in the northwest, in the counties of Lyon and Sioux.

In May of 1994, a population that had last been documented during the Loess Hills foray in 1986 was found in Fremont County. It occurs on private land on the lower slopes of some steep Loess bluffs. Sadly, this population of around a hundred plants was severely degraded by encroach-

ing eastern red cedars, dogwoods and other woody species. Many of the plants were weak and clearly unable to flower. This population is the focus of our October fieldtrip. By clearing this section of prairie, the growth and survival of this population of biscuit root should be enhanced. It will require some heavy duty cutting and hauling to clear the red cedars so all help will be greatly appreciated.

We will meet on 24<sup>th</sup> October in the little town of Thurman, situated at the junction of highways 145 and L44. You can reach Thurman on highway 145 from either the west off Interstate 29 or from the east off highway 275. Bring a chainsaw if you can or other tools such as pruning saws and loppers. Be sure to wear durable clothing and gloves, and to wear sturdy shoes.



*Lomatium foeniculaceum*

Illustration from Gleason, Henry A. 1968. *The new Britton & Brown illustrated flora of the Northeastern United States & adjacent Canada*. New York Botanical Garden, New York.

# Field Trip to Fallen Rock State Preserve

by Ed Freese

On 16<sup>th</sup> May, a small group of nature lovers met south of Steamboat Rock to explore Fallen Rock State Preserve and Sandstone Palisades County Park. The sky was blue and bright, and cooling winds sent maple samaras twirling. Orioles called in the canopy and the mating trills of the American toad surrounded us. We walked through the floodplain forest of the Iowa River Greenbelt to reach our destination.

What makes these two areas special is a combination of several things. The 250 million year old Pennsylvanian Sandstone and north-facing slopes create a special habitat where many plants form remnant populations of species nowadays found on the Paleozoic plateau of northeast Iowa. The geologic features of the Southern Iowa Drift Plain, Iowa Surface and the Des Moines Glacial Lobe meet in the vicinity of the preserve, and the special habitat of the area has probably been home to certain plant species since the retreat of the ice-sheet.

Our group carefully walked on moss and fern covered slopes and rocky piles of sandstone. The most common moss was probably broom or fork moss (*Dicranum* spp.) forming hundreds of cushion-like humps. The rare marginal shield fern (*Dryopteris marginalis*) was the most common fern in the area. Other ferns encountered in the state preserve included the bulblet fern (*Cystopteris bulbifera*), slender rockbrake (*Cryptogramma stelleri*), polypody (*Polypodium virginianum*). The shining clubmoss (*Lycopodium lucidulum*) formed a dense carpet over one large area.

Blooming at Fallen Rock was a carpet of Canada mayflower (*Maianthemum canadense*). We also found a native vining honeysuckle in flower (*Lonicera dioica*). The serviceberry (*Amelanchier arborea*) and the rare yellow birch (*Betula alleghaniensis*) were common. Many of the birch showed signs of having survived severe weather, balancing on sandstone piles or clinging to the rockface using every root and crevice. White pines were also represented, but only on the bluff edges.

While walking the path in one area of the preserve, a group member found a flowering orchid. We quickly gathered around to see the greenish flowers and look for more plants, which we found along with morels and a few showy orchis (*Galearis spectabilis*). The green-flowered orchid was determined to be a bracted orchid (*Coeloglossum viride* var. *virescens*; also referred to as *Habenaria bracteata* or *H. viridis*).

The 122 acre Fallen Rock preserve became a state preserve in 1978 and is owned by the Iowa Department of Natural Resources. Sandstone Palisades was purchased by the Iowa Natural Heritage Foundation in 1988. It covers 82 acres and was turned over to the Hardin County Conservation

Board in 1993. There is also a narrow strip of private land between the two preserves. Recently both preserves were renamed as one common preserve - Fallen Rock.

We should be thankful for the foresight and dedication of the late Homer D. Calkins. While he served as Executive Officer of the Hardin County Conservation Board between 1958 and 1976, he purchased approximately 2,000 acres of land in the greenbelt to protect them from development. It is as a direct result of his actions that we can hike in these wild areas and see rare native plants.

## On the Horizon...

### Schedule of INPS Activities - 1998

**ALL FIELD TRIPS BEGIN AT 10 am  
UNLESS OTHERWISE NOTED  
BRING A SACK LUNCH**

**For more information, call 515-294-9499**

August 21-23 - CHEEVER LAKE and ANDERSON PRAIRIE STATE PRESERVES (Emmet County - co-sponsored with the Iowa State Preserves Board). Plant inventory and wildflower hikes. Cheever Lake is a "prairie pothole" with year-round water cover that is home to a diversity of wetland and aquatic plants. These include white and yellow water lilies, coontail, wild rice, water milfoil, bulrush, burreed, arrowhead and whitetop grass. Anderson Prairie contains plant communities ranging from dry prairie, wetland, oak savanna and floodplain. The dry prairie is dominated by sideoats grama and little bluestem; mesic prairie by big bluestem and Indian grass; and wet areas by slough grass, bluejoint and numerous sedges. Forbs are abundant and showy, especially in prairie areas. A number of rare plants have been found at Anderson Prairie, including kittentails, biscuit root and yellow monkeyflower.

Leaders: Gary Phillips and Bob Moats.

Directions: Meet at the Estherville City Park, located south of Highway 9 on the west side of the West Fork of the Des Moines River. The parking lot is just south of the swimming pool. **BOATS WILL BE PROVIDED FOR THE USE OF PARTICIPANTS AT CHEEVER LAKE!!**



September 12 - BRAYTON-HORSLEY FEN PRESERVE (Bremer County), KAUTEN FEN (Fayette County - both field trips co-sponsored with The Nature Conservancy). Brayton-Horsley Prairie features high quality wet-mesic prairie and fen communities. Rare plants include dwarf bog birch, tall cottongrass, sage willow, fringed gentian, Riddell's goldenrod and hairy valerian. Kauten Fen is another diverse fen community which itself is home to many rare plant species. Participants will have the opportunity to see the effects of two different management strategies, passive (no fire - Brayton-Horsley Fen) and active (burning - Kauten Fen) on this field trip.

Leaders: John Pearson, Jerry Selby, Jon Steege

Directions: Meet at Brayton-Horsley Fen. From the junction of Highway 93 and V56, go south for 2 miles on V56, then east on a gravel road for 1.7 miles to a point just west of the Little Wapsipinicon River.

Kauten Fen is located on "J" Avenue between 100 and 110th Streets. Travel four miles east of Maynard on Highway 150, then one mile north, one mile east, and 1/4 mile back south to empty farm site. Fen is southwest of old farm site.

October 24 - PRAIRIE RESTORATION on privately owned Lomatium (biscuit-root) site (Fremont County).

Leader: Tom Rosburg.

Directions: Meet at Thurman; junction of Hwy 145 and L44. Go to Thurman by taking 145 east from 129 or west from Hwy 275. Thurman is in Fremont County - 10 miles north of Waubonsie State Park.

November 7 - FALL MEETING. Cedar Falls (Black Hawk County), UNI campus. Morning program on Iowa orchids by Dr. Paul Whitson; afternoon field trip to a local prairie led by Dr. Daryl Smith. Other activities to be announced in the next newsletter.

*Fen - a special kind of wetland, from page 5.*

Most of Iowa's fens are on farmland and are often adversely affected by some agricultural practices, such as overgrazing, drainage and indirect effects such as pesticide drift. Typically, these fens are located in pastures and sometimes serve as a source of water to cattle. Severe trampling is common in pastured fens, resulting in a very hummocky terrain and the disappearance of rare species. Fens are often the target of drainage improvements to expand cropland or to remove impediments to the movement of farm machinery. Pesticides applied to cropland may inadvertently kill wildflower species in nearby fens. Many fens are endangered by several of these threats.

Despite these problems, there are many opportunities for the conservation of fens in Iowa, ranging from the continued maintenance and monitoring of existing protected fens to acquisition of new areas by conservation agencies and improved stewardship. Fens are an important part of Iowa's natural heritage. We encourage you to enjoy their intrigue, learn more about their natural history and support their conservation.

**Membership/Change of Address Form and Survey:**

Your input and support of the Iowa Native Plant Society are important:

Please complete and send with your 1998 dues of \$10 to Mary Brown, 330 Windsor Dr., Iowa City, IA 52245.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone # (\_\_\_\_) \_\_\_\_\_ email address/web site: \_\_\_\_\_

Additional information or special interests for member directory entry: \_\_\_\_\_

**O** Mark this box if you DO NOT wish this information published in the INPS member directory. The INPS mail list is never distributed to other organizations or companies. Dues are payable on a calendar year basis, from January 1st to December 31st. Use this form for change of address.

INPS form: Nov. 1997

# Roots and Shoots

For prairie enthusiasts visiting the Dolittle prairie, my prairie restoration project of a country roadside would be of interest to all, I am sure. It is just 3/4 of a mile south and 1 3/4 miles east of the Dolittle prairie near the home of Ron and Nancy Olson.

I have spent hundreds of hours of weeding, and planting local ecotype forbs on my own, even though it is the county right-of-way. Originally, I planted some alien species, which I have since found out, through trial and error should never have been planted with the local ecotype forbs. However, there are approximately 150 species of local ecotype forbs now successfully growing.

The roadside prairie restoration was begun some ten years, after ditch and road work on the county road had been replanted with brome and alfalfa. I have used several gallons of round-up, sprayed in late March, before emergence of the native species. This treatment has successfully eliminated most of the brome.

Seeds were originally sown over the surface of the unworked soil during the very late fall and the abundance of species and color has been growing with each passing year. Please put this letter in the INPS newsletter for those interested in seeing a unique project.

Jimmie D. Thompson

*Iowa Native Plant Society  
clo Deb Lewis  
Department of Botany  
Iowa State University  
Ames, IA 50011-1020*

## ***In a Nutshell...***

### **related events of interest to INPS members**

TNC: The Nature Conservancy  
CIPN: Central Iowa Prairie Network  
IPN: Iowa Prairie Network  
PSMC: Prairie States Mushroom Club

- August 11 PoW Memorial Preserve at Ames High School Prairie. Ames, Story County. TNC. (515) 244-5044.
- August 14-16 Adult Nature Weekend, Iowa Lakeside Laboratory. Adult courses offered in a field trip/lecture format. (515) 294-2488.
- August 20 Doolittle Prairie State Preserve, Story County. CIPN (515) 432-5026.
- September 8 Pohl Memorial Preserve at Ames High School Prairie. Ames. Story County. TNC (515) 244-5044.
- September 11-13 IPN Prairie Celebration and Annual Meeting. Wapsi River Environmental Center, Dixon. (319) 324-8897.
- September 19 Cedar Hills Sand Prairie (with TNC annual meeting), Black Hawk County. TNC (515) 244-5044.
- September 20 White Pine Hollow, near Luxemburg, Dubuque County. PSMC (515) 446-7358.
- October 3 Swamp White Oak Preserve, Muscatine County. TNC. (515) 244-5044.