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MISSOURI NATIVE PLANT SOCIETY**

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*Missouriensis* is the official publication of the Missouri Native Plant Society. Founded in 1979 as a non-profit corporation, the Society is devoted to the conservation and study of the plants growing wild in Missouri, to the education of the public about the significance of the native flora and its habitat, and to the publication of related information.

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## LOOKING BACK - THE FIRST TEN YEARS

Virginia K. Wallace

Missouri Department of Conservation

P. O. Box 180, Jefferson City, MO 65102

I cannot begin to address the true beginnings of the Missouri Native Plant Society (MoNPS) because I believe that the Society, or at least the climate that made the Society possible, dates back to the time of George Engelmann, long before any of us were born. A long list of botanists, amateur and professional, contributed to this climate over the years: B. F. Bush, Ernest J. Palmer, Julian Steyermark, Bill Bauer, Lou Bottenberg, Dr. Alice Nightingale, Erna Eisendrath, Edgar Denison, Art Christ, members of the Webster Groves Nature Study Society and many, many more. (There is a danger in mentioning names because someone invariably gets left out; this is by no means meant to be an all-inclusive list.)

Nor can I really address the events of recent history that led to the formation of the Society, because I wasn't here then. If John Wylie were here tonight, he would probably say that the catalyst for the formation of MoNPS was the passage of the Design for Conservation and subsequent formation of the Natural History Section with its charge to protect, among other things, the state's rare and endangered flora. I am sure those events did contribute to the society's formation. I suspect, however, that other factors also played a role, though I can only speculate what they might have been. Many of you who were involved in the process know better than I.

What I do feel qualified to talk about is the actual formation of the Society ten years ago, because that is where my experience merges with MoNPS; I started my job as botanist with the Department of Conservation just a few weeks before MoNPS' organizational meeting here in Fulton June 2, 1979.

I remember being somewhat overwhelmed at that meeting; what an assemblage of botanists for the new "state botanist" to meet all at once. I do remember being struck by the diversity of interests represented in the group that day. But we had come together united by our common concern for Missouri's native plants which is reflected in Article I of our bylaws: "The purpose of the Native Plant Society of Missouri is to promote the preservation, conservation and study of the wild plants and vegetation of Missouri, the education of the public to the value of its habitat, and the publication of related material."

That day, we heard from Dr. Robert Mohlenbrock from Southern Illinois University, who offered us some challenges. Later, in our first newsletter, our newly elected President, Jon Hawker, reflected on the nature of our fledgling organization and offered some thoughts on directions we might take. Let's look

back at their words.

Jon pointed out that because of our diversity, MoNPS had the potential for high productivity and high stability. He said we had the opportunity to begin any number of vital and long overdue activities, and that our scope should be broad to reflect the broad diversity of interests of our members and potential members. He then cautioned, however, that the very diversity that could make a strong organization, could also be our undoing, at least in the beginning. Diversity can lead to splintering into special interest groups, "each marching to its own drummer." As a result, he urged us, in our infancy, to begin with a few main goals and work together to accomplish them, thus establishing a group consciousness and a strong Society identity. Our first two tasks, he suggested, should be to develop a system for determining the status of Missouri's plants, and to educate Missourians as to the importance of knowledge about our native plants.

In his remarks, Dr. Mohlenbrock challenged us with three questions: 1) Why should one be interested in native plants?, 2) How can each of us contribute to the organization?, and 3) What can MoNPS do as an organization?. His answers, combined with Jon's suggestions for our beginnings, provide us with a way to evaluate the past ten years.

Why should we be interested in native plants? As Dr. Mohlenbrock suggested, the reasons are largely personal. Some of us are interested in them because of the possibilities they offer for gardening or landscaping, others of us may be interested in the medicinal or edible species. For many it's the excitement of discovery, either of a plant new to us or of one new to the state or county. The reasons are as diverse as our membership. One thing I have discovered is that we are not just interested in native plants, we get down right excited about them. This is no more evident than on any field trip where you can hear excited voices shouting "I found it", or "look what I found!"

It is this excitement that resulted in the formation of the Society, and that has spurred our activities over the years. Which leads to Dr. Mohlenbrock's second question of how can each of us contribute to the organization. He stressed that one need NOT be a professional botanist to contribute; individuals can contribute by exploring unknown areas, making plant lists, doing life history studies, or donating time and energy for lectures, slide shows and field trips. Our members have done all that and more. Individual members as well as chapters have explored areas, and in doing so have often found new populations of rare or unusual species. We have made plant lists and organized and participated in plant salvages.

One of our major projects, the *Missouri Botanical Record*, is an outgrowth of our first President's recommendation to develop a system for determining the status of plants in the state. By documenting new county occurrences for



all Missouri species, members are contributing a great deal to our knowledge of the flora of the state. And the ultimate publication of an *Atlas of the Flora of Missouri*, updating the county distribution maps found in Steyermark's *Flora* and including species found since his book was published, will be a major contribution of the Society to the field of botany.

Jon Hawker also stressed educating the public to the values of our native plants. And Dr. Mohlenbrock emphasized education and communication in answer to his third question, "What can MoNPS do as an organization." I believe we have accomplished a great deal in both education and communication. We distribute two publications to our members: our journal, *Missouriensis*, and *The Petal Pusher* newsletter. Members and others have published a wide variety of articles in these publications on such wide-ranging topics as rare plants, introduced plants, glades, new state records, field trip summaries, plant lists, and many more. These publications also document the life of the society; all of our Board meeting minutes are contained within their pages.

We have learned about new places and plants by taking field trips as Chapters, in conjunction with state Board meetings, or as individuals. We have been to every corner of the state, from Big Oak Tree State Park in the bootheel (I think it snowed that day), to the loess hill prairies in Atchison County, from Steyermark Woods in Hannibal to Diamond Grove Prairie near Joplin. Each trip is a learning experience and you can always hear the excitement of finding something new "--I found it!"

We have expanded our knowledge through many programs and workshops over the years. As I reviewed the list of these I was astounded by their number and diversity. At statewide meetings we have had programs on topics such as chert glades, rare plants, Missouri's flora, wildflower photography, and commercial trade of native plants. Workshop topics have included plant collecting, poisonous and edible plants, and a lot on identification of things: ferns, winter trees, grasses and sedges and composites. The many Chapter programs and workshops further extend our educational experiences.

In the past few years the Missouri Native Plant Society has moved out of infancy and into adolescence. We have grown and expanded our efforts with the formation of six Chapters around the state: St. Louis, Kansas City, Kirksville, Springfield, Jefferson City and Columbia. (I find it interesting that our first Chapter, the Southern Illinois Chapter, became the nucleus of an Illinois Native Plant Society.) Chapters hold regular meetings, invite speakers on a variety of plant related subjects, conduct workshops, and lead field trips, all reaching people who might not otherwise attend state-sponsored functions. Not only do Chapters provide us with more contact with the public, they also provide important contact for MoNPS members.

In order to encourage and recognize members who are active in working toward the Society's goals of conservation, education and research, MoNPS instituted an awards system. Three of these awards, the Erna R. Eisendrath Education Award, the MoNPS Stewardship Award and the MoNPS Research Award, have been given annually since 1985. The Society's highest award, the Julian Steyermark Award, is reserved for those making outstanding contributions to Missouri botany, and has been given only twice so far.

The past ten years have not been without controversy. From the very beginning, because of the diverse interests of our members, there has been conflict. Scientific collecting is important to document plant occurrences, but some are concerned that over collecting has led to the decline of some species. Propagation is an important way to preserve native plants, but planting them back into the wild can disrupt ecosystems. It has sometimes been difficult to maintain a balance between the interests of our amateur members and members who are professional botanists, or to make sure that members of each region of the state are adequately represented on the Board. As we grow and mature, some of these conflicts move toward resolution; others, however, remain as much in conflict now as they did nine or ten years ago.

I believe there is room for conflict; it keeps us from becoming complacent. It is important for us to agree to disagree, for in the end we are united by our common concern for the conservation and preservation of Missouri's flora.

We have accomplished a great deal in the past ten years, but there remains much for us to do. We could be working with schools to teach the young people of our state the values of native plants. We could develop a speakers bureau to provide talks on all aspects of native plants to civic organizations, youth groups, women's clubs and many other organizations. We could contribute to the preservation of the state's rare and endangered species, either through active efforts such as propagation or through donations to organizations such as the Center for Plant Conservation. Each of us can continue to learn and share our knowledge, and the appreciation that knowledge brings, with others. The list is limited only by our own interests and visions.

The Missouri Native Plant Society is a volunteer organization. All that we have accomplished has been through the dedication and hard work of our members. If we are to continue to grow and expand our horizons, each of us must continue to contribute in whatever way we can.

In addition to preservation, education and research, our brochure lists a fourth purpose of the Society: *enjoyment*. "Coming together to communicate with and learn from each other against the background of the Missouri wilderness promotes lasting friendships...Join in our purpose and share our enthusiasm for Missouri's floral wonders." As a botanist new to the state and unfamiliar with the

flora, I have learned a great deal from the people in this organization over the past ten years. I have also made many friends. I have enjoyed working with you over the past ten years and I look forward to furthering both our causes and our relationships during the next decade.

Thank you.

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Participants of the pre-MoNPS organizational meeting held in Jefferson City, MO, in 1978.

***EQUISETUM PRATENSE* EHRH.  
(EQUISETACEAE), A NEW SPECIES TO MISSOURI**

Brad Jacobs  
Missouri Department of Conservation  
P. O. Box 180, Jefferson City, MO 65102

On May 18, 1989, while searching for nesting marsh birds in Clark County, Missouri, I discovered a population of *Equisetum pratense* Ehrh., (Figure 1) the Meadow Horsetail, a new species to the state's flora. This Clark County site occurs about 1.5 km southeast of Wayland around a spring outlet at the base of a sandy slope above an oxbow lake. The spring outlet is a circular sandy area, seven meters in diameter and covered by *Nasturtium officinale* R. Br., Watercress. A dense band of *E. pratense*, one to three meters wide, circumscribes the spring area and extends down the spring branch for several meters. The slope around the spring is shaded by large trees throughout most of the day.

*Equisetum pratense* is a delicate, shade inhabiting plant with whorls of simple branches extending from the central nodes to the apex of the sterile stems. The annual stems are slender, 1-3 mm in diameter and greenish with bicolorous sheath teeth (Lellinger 1985). Several characteristics distinguish this species from the more sun-tolerant, weedy *E. arvense* or Field Horsetail. The fertile stems of *E. pratense* develop branches after sporogenesis occurs and resemble flat-topped sterile stems, while the fertile stems of *E. arvense* wither (Cobb 1956). The sterile branches *E. pratense* are slightly rough and spreading; those of *E. arvense* are rough and usually ascending (Lellinger l.c.). The teeth of the branch sheaths of *E. pratense* are as wide as they are long, whereas those of *E. arvense* are much longer than wide (Lellinger l.c.). The first internode of the branching part of the stem is slightly shorter than the second internode in *E. pratense* and regularly equal in *E. arvense* (Cobb l.c.)

*E. pratense* is a boreal species with a North American range extending from Alaska to New Brunswick south to New Jersey, Iowa, South Dakota and British Columbia (Lellinger l.c.). Peck (1982) documents a Muscatine County, Iowa, population as the most southerly in the Midwest, about 80 km south of the normal range. The Clark County, Missouri, population is about 125 km south of the Muscatine population.

A voucher specimen collected on May 18, 1989 is deposited at the Herbarium of the Missouri Botanical Garden (MO).

MISSOURI  
BOTANICAL GARDEN  
HERBARIUM

No 3644889



MISSOURI DEPARTMENT OF CONSERVATION  
FLORA OF MISSOURI PROJECT

*Equisetum pratense* Ehrh.

CLARK COUNTY: T65N R6W S32 NW1/4 of NE1/4 of  
SE1/4; elev. 500 ft; ca. 1/2 mi SE of Wayland;  
ca. 1000-5000 stems around spring at base  
100 ft, E-facing slope at outback edge of  
oxbow marsh called Goose Pond, on McMolly  
Farm; spring is 8-10 m circle of hard sand  
with water cress covering it; canopy of t:  
is closed except directly over spring;  
*Equisetum auriculatum* rules; banks of spring  
is down spring branches toward marsh. No  
fertile stems seen. Lateral branches  
ascending from the erect vertical stems.  
18 May 1989  
Brad Jacobs s.n.

MISSOURI BOTANICAL GARDEN HERBARIUM (MO)

Figure 1. Xerograph of the voucher specimen of *Equisetum pratense* deposited at the Missouri Botanical Garden (MO).

## LITERATURE CITED

- Cobb, B. 1956. *A field guide to the ferns*. The Riverside Press. Cambridge, MA. pp. 281.
- Lellinger, D. B. 1985. *A field manual of the ferns and fern-Allies of the United States and Canada*. Smithsonian Institution Press. Washington, D.C. pp. 389.
- Peck, J. H. 1982. *Ferns and fern allies of the driftless area of Illinois, Iowa, Minnesota and Wisconsin*. Milwaukee Public Mus. Contr. Biol. Geol. 53: 1-140.

## A NEW GRASS FOR MISSOURI

William W. Dierker

Extension Associate - IPM, University of Missouri Extension (Ret.)  
Room 45 Agriculture Building, Columbia, MO 65211

A grass new to Missouri, *Eriochloa villosa* (Thunb.) Kunth, was collected July 26, 1987, by Edward Bullard in field of grain sorghum in Audrain County. The plants were small seedlings and were identified by Dr. C. L. Kucera only after being grown to maturity in a flower bed. One specimen, 159030 is deposited in the herbarium of the University of Missouri at Columbia (UMO); a second specimen, 01802, is deposited in the UMO/IPM branch herbarium on the University of Missouri Columbia campus.

The inflorescence of *Eriochloa villosa* resembles that of some paspalums, especially *Paspalum pubiflorum*. Spikelets consist of one perfect floret, and one sterile or staminate floret. Spikelets are 4-5 mm long, 2-3 mm broad and ovate in outline. Each spikelet is subtended by a cup or cushion-like swelling at its base. The pedicels and rachis are villous. The entire plant is more or less covered with a velvety pubescence.

This grass, commonly called the Woolly Cupgrass, has a limited distribution in the United States. It is a native annual grass of the Far East including Japan, China, Taiwan, and eastern USSR. Mohlenbrock (1972) cites two locations for it in two northeastern counties of Illinois. A specimen from Wisconsin is present in the UMO herbarium. It is apparently also found in Iowa. Mohlenbrock (l.c.) indicates that it is adventive or introduced in Colorado and Oregon. This grass is of concern to the agricultural community because of its association with grain crops. It will undoubtedly be found in additional locations in northern and central Missouri, probably in association with grain crops.

### LITERATURE CITED

- Mohlenbrock, R. H. 1972. *The Illustrated Flora of Illinois: Grasses Bromus to Paspalum*. Southern Illinois University Press. Carbondale.

## FEDERALLY LISTED PLANTS IN MISSOURI AN UPDATE

Virginia K. Wallace  
Missouri Department of Conservation  
P.O. Box 180, Jefferson City, MO 65102

In 1984, Sherry Morgan, then a botanist for the Missouri Department of conservation (MDC), wrote an article for *Missouriensis* entitled *Making a List and Checking it Twice* [Vol. 5(3)]. The subject of the article was Missouri plants proposed for federal listing by the U.S. Fish and Wildlife Service (USFWS). At the time the article was written, only one Missouri species was listed: *Isotria medeoloides* (Pursh) Raf., the Small Whorled Pogonia.

Now nine species occurring in Missouri are on the federal list of threatened or endangered species. The Missouri Department of Conservation is charged with conserving these species. Below is a brief description of protection activities undertaken for each species in recent years.

*Isotria medeoloides* (Pursh) Raf.  
Small Whorled Pogonia

The Small Whorled Pogonia orchid became the first plant occurring in Missouri added to the endangered species list when it was listed as endangered in the *Federal Register* on September 10, 1982 (47 *Federal Register* 39827). This small orchid, which blooms in May, is known only from an 1897 collection made by Colton Russell near Glen Allen in Bollinger County (Steyermark, 1963). Despite repeated searches by Julian Steyermark and other botanists, including many MoNPS members, this species has not been found again. It does, however, remain extant in several eastern states and in Canada.

*Lindera melissifolium* (Walt.) Blume  
Pondberry

Julian Steyermark in his *Flora of Missouri* (1963) described Pondberry as one of the rarest shrubs in the United States. He found the single Missouri population growing in swampy, forested depressions on a farm in Ripley County in October 1948. He visited the site again in late March of 1949 when the plants were in bloom, but the population was "lost" until it was rediscovered by a botanist from Arkansas in 1979. That farm was purchased by the Department of Conservation in 1980 to protect a portion of the Pondberry population. The remainder of the population was purchased in 1984 by The Nature Conservancy, and later transferred to MDC as the Nancy B. Altwater Pondberry Preserve addition to Sand Ponds Natural History Area.



Pondberry is at the northwestern edge of its range in Missouri. When it was listed on July 31, 1986, nineteen populations were known from Arkansas (9), Georgia (2), Mississippi (2), Missouri (1), North Carolina (1) and South Carolina (4) (51 *Federal Register* 27497). Six additional populations have been found since its listing in Arkansas (3) and Mississippi (3).

*Lesquerella filiformis* Rollins  
Missouri Bladderpod

Missouri Bladderpod is a member of the mustard family that occurs only in Missouri on limestone glades in Greene, Dade, Lawrence and Christian counties. It is a winter annual, forming a basal rosette of leaves in the fall and blooming in April and early May. It was listed as endangered by the USFWS on January 8, 1987. Nine populations were known when the species was listed (52 *Federal Register* 879). MDC biologists conducted surveys for this plant in all available habitat in the historic counties of occurrence during 1988 and 1989, with funding from USFWS. Approximately 55 new sites have been located during these surveys in Greene, Dade, Lawrence and Christian counties and all are restricted to the fossiliferous layers of Burlington Keokuk and Warsaw limestone outcrops.

MDC purchased 25 acres in Greene County in 1988 to protect a population of Missouri Bladderpod. The Nature Conservancy has also purchased land to protect this species, and several populations occur at Wilson's Creek National battlefield.

*Trifolium stoloniferum* Eat.  
Running Buffalo Clover

Running Buffalo Clover was once abundant in the Ohio River Valley and was known from Illinois, Indiana, Kansas, Kentucky, Missouri, Ohio and West Virginia (52 *Federal Register* 21478). Only one extant population was known at the time of listing (in West Virginia), although additional populations have since been located in Ohio, Kentucky and Indiana.

Running Buffalo Clover was known from Wayne, Jasper, St. Louis and Boone Counties in Missouri (Steyermark, 1963) but all records are very old. In 1988, MDC biologists conducted a search of all historical localities as well as appropriate habitat in counties along the Missouri and Mississippi rivers. The search was conducted from May through August, the reported blooming time for the species in Missouri. No populations were found during the search, but this species may still occur in the state.

*Geocarpon minimum* Mackenzie  
Geocarpon

Geocarpon is known only from Missouri and Arkansas and was listed as Threatened by the USFWS on June 16, 1987 (52 *Federal Register* 22930). In Missouri, it occupies Channel sandstone glades and behaves as a winter annual, forming a basal rosette in the fall and blooming in March or April. In Arkansas it is a strict annual and occurs on barren areas with high magnesium soils. Geocarpon is currently known from five sites in Arkansas and 22 sites in Missouri. Seven of the Missouri sites were found in Dade and Cedar counties during a 1989 MDC survey of potential habitat. Geocarpon also occurs in Greene, Lawrence and Polk Counties.

*Asclepias meadii* Torr.  
Mead's Milkweed

Once ranging across the tallgrass prairie region, Mead's Milkweed is now known only from Iowa, Illinois, Kansas and Missouri. While Kansas and Missouri have numerous populations, Iowa has only two remaining sites and Illinois only four (53 *Federal Register* 33982). As a result, Mead's Milkweed was listed as threatened on September 1, 1988.

MDC biologists conducted a survey of prairies in Pettis and Benton counties in 1989 to locate additional Mead's Milkweed populations (25 sites were previously known). Though Mead's Milkweed blooms in early June and is difficult to locate in a vegetative state, the search was conducted in June and July. Fortunately, the search was successful (although few flowering or fruiting plants were found); ten new populations were found in Benton County and seven were located in Pettis County.

A Recovery Team, consisting of representatives from Illinois, Missouri and Kansas, was formed by the USFWS this year to plan recovery efforts for this species.

*Boltonia decurrens* (Torr. & Gray) Wood  
Decurrent False Aster

Decurrent False Aster is a perennial plant of open wetlands along the Illinois River in Illinois and St. Charles County in Missouri. It was listed as threatened on November 11, 1988 (53 *Federal Register* 45858). Reported by Steyermark (1963) (as *B. asteroides* var. *decurrens*) from Lincoln, St. Charles and St. Louis Counties, it was considered extirpated from the state until botanists from the Missouri Botanical Garden discovered a population in bloom near West Alton in St. Charles County in August, 1987. (MoNPS members helped transplant a portion of that population to another known site in October, 1987). MDC bota-

nists conducted a search for the species in Lincoln, St. Louis, St. Charles and Pike Counties in 1988. Of 227 sites searched, only 10 additional sites were found, all in St. Charles County and all in close proximity to the known populations.

The USFWS formed a Recovery Team for this species this year with representatives from Illinois and Missouri.

*Platanthera leucophaea* (Nutt.) Lindl.  
*Platanthera praeclara* Sheviak & Bowles  
Eastern and Western Prairie Fringed Orchids

These two species have been proposed for federal listing as threatened, with the final rule expected to be published October 30, 1989. Both occurred in Missouri at one time and are treated in the Flora of Missouri (Steyermark, (1963) as *Habenaria leucophaea*. They were separated by Bowles and Sheviak (1986) based on pollination mechanisms, morphology and geographic distributions. According to Summers (1987), *P. leucophaea* was found in the eastern counties of Missouri, while *P. praeclara* is restricted to western Counties. The Eastern Prairie Fringed Orchid is considered extirpated from Missouri, though it is known from 51 sites in seven States and two Canadian Provinces (53 *Federal Register* 39621). The Western species does occur at two sites (in Holt and Atchison Counties) in Missouri, as well as at about 40 sites in six other states and one Canadian Province. Tarkio Prairie Natural History Area was purchased by MDC in 1985 to protect one of the Missouri populations.

MDC botanists conducted a survey for the Western Prairie Fringed Orchid in June, 1989, when plants should have been in flower and relatively easy to spot. No populations were found. However, the early spring drought affected flowering of this species--plants at known sites did not bloom this year. Suitable habitat occurs in Missouri and the plant may still be found.

While we know much about these species in Missouri, there is still much we do not know. We will continue to conduct surveys for many of these plants in future years. We will also initiate research to answer other questions about their survival. The goal for all listed species is to secure and manage enough populations that the species are no longer in danger of extinction.

As MoNPS members, you can help by continuing to keep your eyes open for these plants. Many of the known populations of these species were discovered by MoNPS members. More importantly, you have reported those populations to MDC so that we can help ensure their protection. If you do find a population of the above species, or any other rare plant, please report it to the Heritage Botanist, Missouri Department of Conservation, P. O. Box 180, Jefferson City, MO 65102.

## SUMMARY OF FEDERALLY LISTED SPECIES

| SPECIES                       | COMMON NAME                    | STATUS | DATE LISTED |
|-------------------------------|--------------------------------|--------|-------------|
| <i>Isotria medeoloides</i>    | Small Whorled Pogonia          | E      | 9/10/82     |
| <i>Lindera melissifolium</i>  | Pondberry                      | E      | 7/31/86     |
| <i>Lesquerella filiformis</i> | Missouri Bladderpod            | E      | 1/08/87     |
| <i>Trifolium stoloniferum</i> | Running Buffalo Clover         | E      | 6/05/87     |
| <i>Geocarpon minimum</i>      | Geocarpon                      | T      | 6/16/87     |
| <i>Asclepias meadii</i>       | Mead's Milkweed                | T      | 9/01/88     |
| <i>Boltonia decurrens</i>     | Decurrent False Aster          | T      | 11/14/88    |
| <i>Platanthera leucophaea</i> | Eastern Prairie Fringed Orchid | T      | 10/30/89    |
| <i>Platanthera praeclara</i>  | Western Prairie Fringed Orchid | T      | 10/30/89    |

## LITERATURE CITED

- Sheviak, C. J. and M. L. Bowles. 1986. The prairie fringed orchids: A pollinator isolated species pair. *Rhodora* 88: 267-290.
- Steyermark, J. A. 1963. *Flora of Missouri*. Iowa State University Press, Ames. lxxxiii + 1728 pp.
- Summers, B. 1987. *Missouri Orchids*, revised ed. Missouri Department of Conservation, Jefferson City. ix + 92 pp.

## ORCHID SPECIES NEW TO MISSOURI

Mark Pelton

Missouri Department of Conservation

P. O. Box 631, Poplar Bluff, MO 63901

Although Carlisle Luer, in his book *The Native Orchids of the United States and Canada* (1975), mapped the Crane-fly Orchid, *Tipularia discolor* (Pursh) Nutt., as occurring in extreme southeast Missouri, no voucher specimens have ever been found to verify its occurrence in this region. George Yatskievych considers this listing by Luer an error (Personal communication).

I had been advised by Don Kurz, Missouri Department of Conservation, that the Crane-fly Orchid occurred on a site in Clay County, Arkansas, adjacent to Sand Ponds Natural History Area (Missouri Department of Conservation) in Ripley County, Missouri, and that its occurrence in nearby Missouri was a good possibility. On November 11, 1988, I found a small population of *Tipularia discolor* on Corkwoods Natural History Area (Missouri Department of Conservation), one mile west of Neelyville, Missouri and four miles north of Arkansas.

Corkwood Natural History Area is located at the western edge of the Bootheel Region. Part of area contains several large, rounded, sand dunes (approximately 50 feet in diameter) that rise 3-4 feet above the surrounding lowland forest. Cherrybark Oak, *Quercus falcata* var. *pagodaefolia* Ell., White Oak, *Quercus alba* L., Sassafras, *Sassafras albidum* (Nutt.) Nees., Black Cherry, *Prunus serotina* Ehrh., and Devils-walking Stick, *Aralia spinosa* L., are some of the dominant plants on the tops of these dunes. The surrounding bottomland forest includes Willow Oak, *Quercus phellos* L., Pin Oak, *Quercus palustris* Muenchh., Green Ash, *Fraxinus pennsylvanica* Marsh., and American Elm, *Ulmus americana* L.). The *Tipularia* population (six plants seen) occurs on the top of one of these dunes in association with *Sassafras albidum*, *Asimina triloba* (L.) Dunal, *Quercus michauxii* Nutt., *Podophyllum peltatum* L., *Parthenocissus quinquefolia* (L.) Planch., *Aralia spinosa*, and *Brunnichia cirrhosa* Gaertn.

Luer (1975) describes the flowering stem of *Tipularia* as "amazingly difficult to see" because their tiny, purplish green blossoms blend into the forest floor background. The loose raceme of 20-40 small blossoms occupy about two-thirds of the slender scape. The plants have a series of underground oval tubers that produce alternately a solitary leaf and the inflorescence.

In the fall, a single leaf appears on the ground and lasts through the winter until about mid-May, when it withers and disappears. The upper surface of the leaf is dark green; the under surface is a satiny purple. Shortly before the leaf withers in the spring, it turns a

dull red color.

Not all plants will produce a flowering stem. Where hundreds of the leaves can be seen in the winter only a few flowering stems may be seen the following summer (Figure 1).

*Tipularia discolor* occurs from southern New York to southern Indiana and southeastern Missouri and south through Louisiana and Northern Florida.

Photographs of these plants, substituting for voucher specimens, have been deposited in the herbarium of the Missouri Botanical Garden.

#### LITERATURE CITED

Luer, C.A. 1975. *The Native Orchids of the United States and Canada*.  
The New York Botanical Garden, W. S. Cowell Ltd. Ipswich.



Figure 1. Leaves of *Tipularia discolor*.

**Wildflower Handbook.** edited by Annie Paulson, copyright 1989, Texas Monthly Press, Austin, TX, 337 pp., paperbound (ISBN 0-87719-167-0), \$9.95.

The Texas Wildflower Research Center should be well known to MONPS members and shares many of our society's goals. In the past few years the Texas Center has expanded its research and interpretive programs, and the Wildflower Handbook is one of the most ambitious projects it has undertaken to promote wildflowers. And what a handbook it is! This attractive volume contains contributions by staff members at the Center, as well as the efforts of volunteers and two nonstaff contributors. The book takes two approaches to informing the reader about planting and maintaining wildflowers. The first is to provide basic information on the "how to" aspects of planting and maintaining everything from a garden to a meadow. Of particular interest to MONPS members may be chapters on recreating a prairie and roadside plantings. Other chapters contain useful, practical information on buying bulk seed, propagating plants from seed, and establishing a buffalo grass lawn (such as the one at the Missouri Department of Conservation Headquarters in Jefferson City). Although there is a chapter on collecting wildflower seeds in the field, there is a strong plant conservation message throughout the text.

Many readers, including MONPS members, may already know the basics of many of the topics included in the "how to" parts of the Wildflower Handbook and the editor and contributors apparently understand that they are serving an audience of mixed backgrounds. The second approach to promoting wildflowers included in the book is to provide readers with technical information on various other, available resources. For example, the book discusses commercially available wildflower seed mixes and includes a lengthy table with information on the names, native distributions, and habitat requirements of most of the plants commonly included in such mixes, including identification of non-native species in some mixes. The table also contains practical information on number of seeds per pound and suggested seeding density for each species. Including this table, the text part of the book occupies only the first 88 pages. The rest of the book contains extensive bibliographies on wildflowers of different parts of the United States and two lengthy appendices.

The first appendix contains the names, addresses, and telephone numbers of various organizations in each state that can provide further information on wildflowers. For Missouri there are eight entries, including our own Missouri Native Plant Society. The entries include brief descriptions of each organization's scope, purpose, research programs, publications, and programs. This appendix should prove very useful to anyone planning to travel to other states and wanting information on the native plants there.

The second appendix, also sorted by state, is a list of commercial

sources for wildflower seed and native plants. For each seller, information is included on the type of business, scope, propagation methods used, primary plant types for sale (trees, shrubs, grasses, wildflowers), and an indication of the percentage of that seller's business that concerns native species. There are three listings for Missouri and several others for surrounding states.

Whether you want to establish a wildflower meadow, establish a prairie, learn about roadside plantings, or simply want to have the wealth of names and references at hand (which is what first caught my eye), there is something in the Wildflower Handbook for every lover of native plants. The Texas Wildflower Research Center should be congratulated for having assembled this useful and interesting body of information, and Texas Monthly Press should be thanked for putting together such an attractive, easily read, and inexpensive book. Hopefully, this publication will stimulate readers to submit further information on the wildflower resources of each state, so that future editions will be even more comprehensive. G. Yatskievych, *Flora of Missouri Project*.

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Jon Paul Rebman has recently completed his Master's Thesis at Southwest Missouri State University. It's title is *The Vascular Flora of Piney Creek Wilderness, Barry/Stone Counties, Missouri*.



## MISSOURI BOTANICAL RECORD 11

Wallace R. Weber, Department of Biology  
William Corcoran, Department of Geosciences,  
Southwest Missouri State University  
Springfield, MO 65804-0095

The *Missouri Botanical Record* is the official register for new county records of all vascular plant taxa in Missouri. To qualify for inclusion in this record, a voucher specimen of the record taxon must be deposited in a recognized herbarium and verified by the curator. Following the format used below, please submit all records to Dr. Wallace R. Weber, Department of Biology, Southwest Missouri State University, Springfield, MO 65804-0095.

In the *Flora of Missouri*, Steyermark used only a single map number to refer to each species, even though several subspecific taxa were listed. In these instances, various symbols were used to represent each taxon on a single Missouri map with counties. In the *Missouri Botanical Record* a decimal system is used, with .1 assigned to the second taxon listed by Steyermark under each map, .2 for the third, and so on. Point (.99) is used to designate a species in which Steyermark included one or more subspecific taxa, but which was not specified by the collector. Point zero nine (.09) identifies a taxon not included by Steyermark. The letters "v" and "f" refer to variety and form respectively, while "nv" indicates that no subspecific category has been recognized.

Contributors for this issue include: W. C. Royal, 408 Jane Street, Fayette, MO 65248, Jay Raveill, Department of Botany, Vanderbilt University, Nashville, TN, William Dierker, Extension Associate (Retired), University Extension, 45 Agriculture Building, University of Missouri Columbia, Columbia, MO 65211, and Melvin Conrad, Science Division, Nottingham Missouri State University, Kirksville, MO 63501.

Two new herbarium designations appear in this list: UNO/IPM for the Integrated Pest Management Branch Herbarium of the Herbarium of the University of Missouri at Columbia, and REIS for the herbarium at the Reis Biological Station.

| MAP #         | TAXON                                                                | COUNTY   | DATE     | COLLECTOR                   | HERB    |
|---------------|----------------------------------------------------------------------|----------|----------|-----------------------------|---------|
| -----         |                                                                      |          |          |                             |         |
| EQUISETACEAE  |                                                                      |          |          |                             |         |
| 12            | <i>Equisetum laevigatum</i>                                          | Schuyler | 06/08/87 | Conrad 11000                | NEMO    |
| 13.1          | <i>Equisetum hyemale</i><br>v. <i>pseudohyemale</i>                  | Shannon  | 05/26/88 | Conrad 11773                | NEMO    |
| POLYPODIACEAE |                                                                      |          |          |                             |         |
| 29            | <i>Pellaea glabella</i><br>v. <i>glabella</i>                        | Pike     | 04/27/88 | Tainter 1811                | UMO/IPM |
| 54.3          | <i>Cystopteris fragilis</i><br>v. <i>fragilis</i> f. <i>simulans</i> | Shannon  | 09/17/88 | Conrad<br>& Ross 11968      | NEMO    |
| NAJADACEAE    |                                                                      |          |          |                             |         |
| 79            | <i>Potamogeton diversifolius</i>                                     | Macon    | 09/10/83 | Hein 38                     | NEMO    |
| ALISMATACEAE  |                                                                      |          |          |                             |         |
| 94            | <i>Sagittaria montevidensis</i><br>ssp. <i>calycina</i>              | Lewis    | 09/05/81 | Hopkins 105                 | NEMO    |
|               | ssp. <i>calycina</i>                                                 | Sullivan | 09/11/88 | Gleason 344                 | NEMO    |
| 95.1          | <i>Sagittaria rigida</i><br>f. <i>elliptica</i>                      | Randolph | 05/28/85 | Conrad &<br>Utterback 10226 | NEMO    |
| GRAMINEAE     |                                                                      |          |          |                             |         |
| 104           | <i>Arundinaria gigantea</i>                                          | Dallas   | 07/28/88 | DeBellis 1906               | UMO/IPM |
| 106           | <i>Bromus inermis</i>                                                | Perry    | 07/15/88 | Stevens 1843                | UMO/IPM |
| 110           | <i>Bromus mollis</i>                                                 | Cole     | 06/16/84 | Raveill 2082                | MO      |
| 111           | <i>Bromus racemosus</i>                                              | Howard   | 06/19/85 | Royall 210                  | UMO     |
| 111           | <i>Bromus racemosus</i>                                              | Saline   | 05/31/83 | Dierker 1220                | UMO/IPM |
| 113           | <i>Bromus japonicus</i>                                              | Cole     | 06/16/85 | Raveill 2073                | MO      |
| 113           | <i>Bromus japonicus</i>                                              | Shelby   | 06/12/85 | Quarles 1468                | UMO/IPM |
| 115           | <i>Bromus sterilis</i>                                               | Cole     | 06/16/85 | Raveill 2085                | MO      |
| 120           | <i>Festuca elatior</i><br>v. & f. <i>elatior</i>                     | Cole     | 06/16/84 | Raveill 2066                | MO      |

|        |                                                                |                |                          |         |
|--------|----------------------------------------------------------------|----------------|--------------------------|---------|
| 120.1  | <i>Festuca elatior</i><br>v. <i>elatior</i> f. <i>aristata</i> | Iron           | 05/23/88 Conrad 11736    | NEMO    |
| 121    | <i>Festuca obtusa</i>                                          | Cole           | 06/16/84 Raveill 2067    | MO      |
| 123.99 | <i>Festuca rubra</i>                                           | Howell         | 08/21/86 Dierker 1649    | UMO/IPM |
| 129    | <i>Glyceria striata</i><br>v. <i>striata</i>                   | Cole           | 06/16/84 Raveill 2055    | MO      |
| 133    | <i>Poa compressa</i>                                           | Crawford       | 06/03/88 Conrad 11876    | NEMO    |
| 133    | <i>Poa compressa</i>                                           | Texas          | 08/02/88 USDA, SCS 1907  | UMO/IPM |
| 138    | <i>Poa wolfii</i>                                              | Adair          | 05/14/81 Walker 96       | NEMO    |
| 138    | <i>Poa wolfii</i>                                              | Macon          | 05/28/83 Hein 36         | NEMO    |
| 139    | <i>Poa bulbosa</i>                                             | Cole           | 04/27/84 Raveill SN      | MO      |
| 139    | <i>Poa bulbosa</i>                                             | Newton         | 04/03/86 Pherigo 1600    | UMO/IPM |
| 144    | <i>Eragrostis capillaris</i>                                   | Cole           | 10/06/84 Raveill 2182    | MO      |
| 147    | <i>Eragrostis pectinacea</i>                                   | Cole           | 06/09/84 Raveill 2040    | MO      |
| 154.99 | <i>Eragrostis spectabilis</i>                                  | Howard         | 10/01/85 Royall 212      | UMO     |
| 156    | <i>Diplachne fascicularis</i>                                  | Cole           | 08/20/84 Raveill 2160    | MO      |
| 162    | <i>Uniola latifolia</i>                                        | Putnam         | 02/13/86 Killpack 1708   | UMO/IPM |
| 164.99 | <i>Dactylis glomerata</i>                                      | Schuyler       | 06/08/87 Conrad 10988    | NEMO    |
| 166    | <i>Phragmites communis</i>                                     |                |                          |         |
| 166    | v. <i>berlandieri</i>                                          | Clark          | 07/15/85 Jackson 1540    | UMO/IPM |
| 166    | v. <i>berlandieri</i>                                          | Knox           | 09/02/86 Dierker 1790    | UMO/IPM |
| 166    | v. <i>berlandieri</i>                                          | Monroe         | 11/04/86 Infield 1844    | UMO/IPM |
| 168    | <i>Tridens flavus</i>                                          | Cole           | 08/20/84 Raveill 2163    | MO      |
| 171    | <i>Tridens strictus</i>                                        | Cole           | 10/06/84 Raveill 2173    | MO      |
| 171    | <i>Tridens strictus</i>                                        | Oregon         | 08/03/87 Jennings 1815   | UMO/IPM |
| 171    | <i>Tridens strictus</i>                                        | Webster        | 10/15/87 Ingram 1827     | UMO/IPM |
| 174.99 | <i>Agropyron repens</i>                                        | Cape Girardeau | 03/27/87 Seabaugh 1846   | UMO/IPM |
| 174.99 | <i>Agropyron repens</i>                                        | Howell         | 06/16/86 Jennings 1834   | UMO/IPM |
| 174.99 | <i>Agropyron repens</i>                                        | Knox           | 06/20/88 Redelfs 1836    | UMO/IPM |
| 174.99 | <i>Agropyron repens</i>                                        | Monroe         | 06/08/88 Rosenkranz 1807 | UMO/IPM |
| 174.99 | <i>Agropyron repens</i>                                        | Ralls          | 06/20/88 Kennett 1835    | UMO/IPM |
| 175    | <i>Agropyron smithii</i>                                       | Holt           | 07/29/83 Dierker 1216    | UMO/IPM |
| 178    | <i>Aegilops cylindrica</i>                                     | Clinton        | 05/20/88 Schreiber 1902  | UMO/IPM |
| 178    | <i>Aegilops cylindrica</i>                                     | Cole           | 06/09/84 Raveill 2043    | MO      |
| 178    | <i>Aegilops cylindrica</i>                                     | Franklin       | 06/03/85 Steffens 1455   | UMO/IPM |
| 178    | <i>Aegilops cylindrica</i>                                     | Howell         | 05/18/87 Dierker 1821    | UMO/IPM |
| 181    | <i>Elymus villosus</i>                                         | Cole           | 06/16/84 Raveill 2065    | MO      |
| 185.2  | <i>Elymus virginicus</i><br>v. <i>jejunus</i>                  | Crawford       | 05/30/88 Conrad 11819    | NEMO    |
| 185.99 | <i>Elymus virginicus</i>                                       | Cole           | 06/16/84 Raveill 2064    | MO      |

|        |                                                                             |                      |                                                              |                 |
|--------|-----------------------------------------------------------------------------|----------------------|--------------------------------------------------------------|-----------------|
| 188.99 | <i>Hordeum jubatum</i>                                                      | Callaway             | 06/16/83 Dierker 1137                                        | UMO/IPM         |
| 189    | <i>Hordeum pusillum</i>                                                     | Cole                 | 06/16/84 Raveill 2054                                        | MO              |
| 189    | <i>Hordeum pusillum</i>                                                     | Howard               | 05/27/85 Royall 157                                          | UMO             |
| 192.99 | <i>Lolium multiflorum</i>                                                   | Cole                 | 07/09/85 Smedley 1721                                        | UMO/IPM         |
| 192.99 | <i>Lolium multiflorum</i>                                                   | Lewis                | 06/03/87 Dierker 1818                                        | UMO/IPM         |
| 192.99 | <i>Lolium multiflorum</i>                                                   | Webster              | 06/03/85 Ingram 1456                                         | UMO/IPM         |
| 204    | <i>Holcus lanatus</i>                                                       | Madison              | 06/02/85 Zielinski 1458                                      | UMO/IPM         |
| 218    | <i>Alopecurus pratensis</i>                                                 | Adair                | 05/21/86 Dierker 1656                                        | UMO/IPM         |
| 218    | <i>Alopecurus pratensis</i>                                                 | Callaway             | 04/30/87 Lehenbauer<br>1883                                  | UMO/IPM         |
| 218    | <i>Alopecurus pratensis</i>                                                 | Johnson              | 06/07/88 Bennett 1803                                        | UMO/IPM         |
| 218    | <i>Alopecurus pratensis</i>                                                 | Vernon               | 05/05/87 Wojcik 1814                                         | UMO/IPM         |
| 219    | <i>Alopecurus aequalis</i>                                                  | Clay                 | 06/23/85 Raveill 2318                                        | MO              |
| 220    | <i>Alopecurus carolinianus</i>                                              | Butler               | 05/07/86 DeFelice 1589                                       | UMO/IPM         |
| 220    | <i>Alopecurus carolinianus</i>                                              | Cole                 | 06/09/84 Raveill 2042                                        | MO              |
| 220    | <i>Alopecurus carolinianus</i>                                              | Knox                 | 05/10/85 Dierker 1503                                        | UMO/IPM         |
| 221    | <i>Phleum pratense</i>                                                      | Cole                 | 06/16/84 Raveill 2060                                        | MO              |
| 228.1  | <i>Muhlenbergia frondosa</i><br>f. <i>commutata</i>                         | Adair                | 09/07/80 Walker 57A                                          | NEMO            |
| 231    | <i>Muhlenbergia schreberi</i><br>v. <i>schreberi</i><br>v. <i>schreberi</i> | Buchanan<br>Sullivan | 04/29/88 Turner 1810<br>09/12/87 Conrad &<br>Gronefeld 11322 | UMO/IPM<br>NEMO |
| 233    | <i>Sporobolus vaginiflorus</i><br>v. <i>vaginiflorus</i>                    | Cole                 | 10/06/84 Raveill 2183                                        | MO              |
| 233.1  | <i>Sporobolus vaginiflorus</i><br>v. <i>inaequalis</i>                      | Adair                | 09/09/80 Walker 60                                           | NEMO            |
| 235.99 | <i>Sporobolus asper</i>                                                     | Callaway             | 10/19/88 Smart 1917                                          | UMO/IPM         |
| 248    | <i>Aristida oligantha</i>                                                   | Howard               | 09/21/85 Royall 206                                          | UMO             |
| 252    | <i>Aristida intermedia</i>                                                  | Schuyler             | 09/19/87 Conrad &<br>Millett 11372                           | NEMO            |
| 255.09 | <i>Leptochloa dubia</i>                                                     | Crawford             | 09/25/88 Pickle 171231                                       | UMO/IPM         |
| 255.09 | <i>Leptochloa dubia</i>                                                     | Gasconade            | 09/26/88 Wright 1912                                         | UMO/IPM         |
| 257    | <i>Cynodon dactylon</i>                                                     | Audrain              | 08/28/87 Hoer 1823                                           | UMO/IPM         |
| 257    | <i>Cynodon dactylon</i>                                                     | Callaway             | 10/07/85 Brown 1791                                          | UMO/IPM         |
| 257    | <i>Cynodon dactylon</i>                                                     | Cole                 | 10/06/84 Raveill 2185                                        | MO              |
| 262    | <i>Chloris virgata</i>                                                      | Oregon               | 09/11/87 Jennings 1829                                       | UMO/IPM         |
| 263    | <i>Chloris verticillata</i>                                                 | Buchanan             | 08/21/87 Burr 1824                                           | UMO/IPM         |
| 263    | <i>Chloris verticillata</i>                                                 | Cedar                | 07/09/86 Dierker 1573                                        | UMO/IPM         |
| 263    | <i>Chloris verticillata</i>                                                 | Cole                 | 08/20/84 Raveill 2164                                        | MO              |
| 263    | <i>Chloris verticillata</i>                                                 | Holt                 | 08/27/85 Williams 1720                                       | UMO/IPM         |
| 263    | <i>Chloris verticillata</i>                                                 | Lawrence             | 07/09/86 Dierker 1569                                        | UMO/IPM         |

|        |                                                                                      |              |          |                           |         |
|--------|--------------------------------------------------------------------------------------|--------------|----------|---------------------------|---------|
| 263    | <i>Chloris verticillata</i>                                                          | St. Francois | 08/03/88 | Gamble 1910               | UMO/IPM |
| 271    | <i>Phalaris arundinacea</i>                                                          | Audrain      | 07/09/88 | Schnarre 1838             | UMO/IPM |
| 271    | <i>Phalaris arundinacea</i>                                                          | Callaway     | 07/15/88 | Zerr 1840                 | UMO/IPM |
| 271    | <i>Phalaris arundinacea</i>                                                          | Cole         | 06/16/84 | Raveill 2056              | MO      |
| 271    | <i>Phalaris arundinacea</i>                                                          | Howard       | 07/22/84 | Royall 123                | UMO     |
| 271    | <i>Phalaris arundinacea</i>                                                          | Nodaway      | 06/02/86 | Wright 1764               | UMO/IPM |
| 279    | <i>Digitaria ischaemum</i><br>v. <i>ischaemum</i>                                    | Schuyler     | 09/19/87 | Conrad &<br>Millett 11418 | NEMO    |
| 279.99 | <i>Digitaria ischaemum</i>                                                           | Howard       | 09/25/85 | Royall 208                | UMO     |
| 281    | <i>Leptoloma cognatum</i>                                                            | Howard       | 09/26/82 | Royall 38                 | UMO     |
| 282    | <i>Eriochloa contracta</i>                                                           | Carroll      | 08/17/82 | Dierker 828               | UMO/IPM |
| 282    | <i>Eriochloa contracta</i>                                                           | Cole         | 10/06/84 | Raveill 2184              | MO      |
| 282    | <i>Eriochloa contracta</i>                                                           | Osage        | 08/02/85 | Gentry 1623               | UMO/IPM |
| 289    | <i>Paspalum pubiflorum</i><br>v. <i>glabrum</i>                                      | Cole         | 10/06/84 | Raveill 2178              | MO      |
| 289    | v. <i>glabrum</i>                                                                    | Saline       | 07/27/84 | Dierker 1713              | UMO/IPM |
| 291.2  | <i>Paspalum ciliatifolium</i><br>v. <i>stramineum</i>                                | Clark        | 07/01/87 | Conrad 11111              | NEMO    |
| 291.99 | <i>Paspalum ciliatifolium</i>                                                        | Howard       | 09/06/85 | Royall 198                | UMO     |
| 295.99 | <i>Paspalum floridanum</i>                                                           | Crawford     | 10/05/84 | Pickle 171230             | UMO/IPM |
| 295.99 | <i>Paspalum floridanum</i>                                                           | Dent         | 08/20/86 | Dierker 1776              | UMO/IPM |
| 309    | <i>Panicum praecocius</i>                                                            | Howard       | 06/25/83 | Royall 66                 | UMO     |
| 315.2  | <i>Panicum oligosanthos</i><br>v. <i>scribnerianum</i>                               | Iron         | 05/23/88 | Conrad 11731              | NEMO    |
| 325    | <i>Panicum dichotomiflorum</i>                                                       | Schuyler     | 09/19/87 | Conrad &<br>Millett 11417 | NEMO    |
| 327    | <i>Panicum gattengeri</i>                                                            | Adair        | 10/15/82 | Walker 219                | NEMO    |
| 329    | <i>Panicum capillare</i><br>v. <i>capillare</i>                                      | Schuyler     | 09/19/87 | Conrad &<br>Millett 11416 | NEMO    |
| 338    | <i>Echinochloa crusgalli</i><br>v. & f. <i>crusgalli</i>                             | Laclede      | 08/12/88 | Prosser &<br>Fauche 1905  | UMO/IPM |
| 338.99 | <i>Echinochloa crusgalli</i>                                                         | Cole         | 10/06/84 | Raveill 2188              | MO      |
| 338.99 | <i>Echinochloa crusgalli</i><br><i>Echinochloa muricata</i><br>v. <i>ludoviciana</i> | Howard       | 08/09/83 | Royall 78                 | UMO     |
| 339.1  | v. <i>ludoviciana</i>                                                                | Schuyler     | 10/05/87 | Millett 13                | NEMO    |
| 339.3  | <i>Echinochloa muricata</i><br>v. <i>microstachya</i>                                | Schuyler     | 10/05/87 | Millett 5                 | NEMO    |
| 340    | <i>Setaria glauca</i>                                                                | Cole         | 08/20/84 | Raveill 2159              | MO      |
| 340    | <i>Setaria glauca</i>                                                                | Schuyler     | 09/22/86 | Conrad 10759              | NEMO    |

|        |                                |          |                                      |         |
|--------|--------------------------------|----------|--------------------------------------|---------|
| 341    | <i>Setaria geniculata</i>      | Howell   | 08/21/86 Dierker 1704                | UMO/IPM |
| 341    | <i>Setaria geniculata</i>      | Lawrence | 09/03/87 Slusher 1825                | UMO/IPM |
| 341    | <i>Setaria geniculata</i>      | Sullivan | 09/12/87 Conrad &<br>Gronefeld 11305 |         |
| 343.99 | <i>Setaria viridis</i>         | Atchison | 06/27/85 Dierker 1495                | UMO/IPM |
| 343.99 | <i>Setaria viridis</i>         | Cole     | 08/20/84 Raveill 2156                | MO      |
| 344    | <i>Setaria faberi</i>          | Cole     | 08/20/84 Raveill 2157                | MO      |
| 346    | <i>Cenchrus longispinus</i>    | Cole     | 08/20/84 Raveill 2153                | MO      |
| 355    | <i>Andropogon virginicus</i>   | Caldwell | 05/18/88 Motsinger 1792              | UMO/IPM |
| 357    | <i>Andropogon saccharoides</i> | Cedar    | 10/02/87 West 1826                   | UMO/IPM |
| 358    | <i>Sorghum halepense</i>       | Cole     | 08/20/84 Raveill 2150                | MO      |
| 362    | <i>Tripsacum dactyloides</i>   | Moniteau | 07/31/87 Yocky 1820                  | UMO/IPM |
| 362    | <i>Tripsacum dactyloides</i>   | Scott    | 08/06/86 Garrett 173546              | UMO/IPM |

## CYPERACEAE

|        |                            |          |                                      |         |
|--------|----------------------------|----------|--------------------------------------|---------|
| 378    | <i>Cyperus esculentus</i>  |          |                                      |         |
|        | v. & f. <i>esculentus</i>  | Schuyler | 10/05/87 Millett 29                  | NEMO    |
| 378.99 | <i>Cyperus esculentus</i>  | Bates    | 06/07/83 Dierker 1098                | UMO/IPM |
| 387    | <i>Cyperus ovularis</i>    |          |                                      |         |
|        | v. <i>ovularis</i>         | Monroe   | 07/14/84 Raveill 2113                | DNR     |
| 387.1  | v. <i>sphaericus</i>       | Carroll  | 07/29/86 Dierker 1563                | UMO/IPM |
| 413    | <i>Scirpus americanus</i>  |          |                                      |         |
|        | v. <i>americanus</i>       | Crawford | 06/02/88 Conrad<br>& Aspinwall 11865 | NEMO    |
| 415    | <i>Scirpus validus</i>     |          |                                      |         |
|        | v. <i>creber</i>           | Cole     | 06/16/84 Raveill 2086                | MO      |
|        | <i>Scirpus atrovirens</i>  |          |                                      |         |
| 421.2  | v. <i>georgianus</i>       | Audrain  | 07/12/84 Dierker 1270                | UMO/IPM |
|        | v. <i>georgianus</i>       | Vernon   | 06/11/84 Bruffy 1333                 | UMO/IPM |
| 421.99 | <i>Scirpus atrovirens</i>  | Cole     | 06/16/84 Raveill 2057                | MO      |
| 424    | <i>Scirpus lineatus</i>    | Cole     | 06/16/84 Raveill 2076                | MO      |
| 450    | <i>Carex leavenworthii</i> | Crawford | 05/30/88 Conrad 11821                | NEMO    |
|        | <i>Carex muhlenbergii</i>  |          |                                      |         |
| 452.1  | v. <i>enervis</i>          | Crawford | 06/01/88 Conrad 11850                | NEMO    |
| 452.2  | v. <i>australis</i>        | Saline   | 05/30/84 Dierker 1410                | UMO/IPM |
| 464    | <i>Carex conjuncta</i>     | Crawford | 05/30/88 Conrad 11842                | NEMO    |
| 475    | <i>Carex suberecta</i>     | Iron     | 05/23/88 Conrad 11743                | NEMO    |
| 476    | <i>Carex brevior</i>       | Adair    | 06/17/82 Welton                      | NEMO    |
| 500    | <i>Carex blanda</i>        | Crawford | 05/30/88 Conrad 11822                | NEMO    |



|     |                                                    |          |                       |      |
|-----|----------------------------------------------------|----------|-----------------------|------|
| 747 | <i>Carya tomentosa</i><br>v. & f. <i>tomentosa</i> | Crawford | 06/01/88 Conrad 11852 | NEMO |
|-----|----------------------------------------------------|----------|-----------------------|------|

## FAGACEAE

|       |                                                                         |          |                      |      |
|-------|-------------------------------------------------------------------------|----------|----------------------|------|
| 759.1 | <i>Quercus alba</i><br>f. <i>latiloba</i>                               | Sullivan | 08/28/88 Gleason 320 | NEMO |
| 765.3 | <i>Quercus prinoides</i><br>v. <i>acuminata</i><br>f. <i>alexanderi</i> | Sullivan | 09/11/88 Gleason 362 | NEMO |
| 769.1 | <i>Quercus X-Bushii</i>                                                 | Sullivan | 09/18/88 Gleason 399 | NEMO |
| 771.3 | <i>Quercus velutina</i><br>f. <i>missouriensis</i>                      | Adair    | 09/30/67 Conrad 4354 | NEMO |

## MORACEAE

|        |                          |          |                                    |         |
|--------|--------------------------|----------|------------------------------------|---------|
| 788.99 | <i>Morus alba</i>        | Howard   | 05/21/84 Royall 104                | UMO     |
| 788.99 | <i>Morus alba</i>        | Knox     | 09/07/86 Caverly &<br>Millett 1    | NEMO    |
| 788.99 | <i>Morus alba</i>        | Schuyler | 09/19/87 Conrad &<br>Millett 11351 | NEMO    |
| 792    | <i>Humulus lupulus</i>   | Knox     | 09/06/85 Dierker 1715              | UMO/IPM |
| 793    | <i>Humulus japonicus</i> | Atchison | 07/25/84 Dierker 1309              | UMO/IPM |
| 793    | <i>Humulus japonicus</i> | Cole     | 08/20/84 Raveill 2158              | MO      |
| 793    | <i>Humulus japonicus</i> | Howard   | 08/18/85 Royall 192                | UMO     |
| 793    | <i>Humulus japonicus</i> | Perry    | 10/17/88 Sims 1919                 | UMO/IPM |

## URTICACEAE

|     |                                           |          |                       |      |
|-----|-------------------------------------------|----------|-----------------------|------|
| 794 | <i>Urtica dioica</i><br>v. <i>procera</i> | Schuyler | 04/25/87 Conrad 10925 | NEMO |
| 799 | <i>Pilea pumila</i>                       | Schuyler | 10/05/87 Millett 7    | NEMO |

## POLYGONACEAE

|     |                                                   |          |                       |         |
|-----|---------------------------------------------------|----------|-----------------------|---------|
| 807 | <i>Rumex acetosella</i><br>v. <i>acetosella</i>   | Carroll  | 05/16/88 Taylor 1801  | UMO/IPM |
| 811 | <i>Rumex altissimus</i>                           | Howard   | 05/19/85 Royall 154   | UMO     |
| 821 | <i>Polygonum erectum</i>                          | Carroll  | 06/15/83 Dierker 1112 | UMO/IPM |
| 822 | <i>Polygonum achoreum</i>                         | Grundy   | 06/26/85 Dierker 1492 | UMO/IPM |
| 823 | <i>Polygonum aviculare</i><br>v. <i>aviculare</i> | Schuyler | 09/19/87 Conrad 11451 | NEMO    |



|        |                                  |          |                             |         |
|--------|----------------------------------|----------|-----------------------------|---------|
| 823.99 | <i>Polygonum aviculare</i>       | Schuyler | 10/05/87 Millett 6          | NEMO    |
| 826.2  | <i>Polygonum coccineum</i>       |          |                             |         |
|        | v. <i>pratincta</i>              | Clark    | 07/08/83 Walker 505         | NEMO    |
| 829.1  | <i>Polygonum pensylvanicum</i>   |          |                             |         |
|        | v. & f. <i>laevigatum</i>        | Cole     | 10/06/84 Raveill 2177       | MO      |
|        | v. & f. <i>laevigatum</i>        | Schuyler | 08/22/86 Conrad 10771       | NEMO    |
| 832    | <i>Polygonum hydropiper</i>      | Howard   | 07/13/82 Royall 17          | UMO     |
| 832.1  | <i>Polygonum cespitosum</i>      |          |                             |         |
|        | v. <i>longesetum</i>             | Cole     | 06/09/84 Raveill 2044       | MO      |
| 834    | <i>Polygonum punctatum</i>       |          |                             |         |
|        | v. <i>punctatum</i>              | Sullivan | 08/26/88 Gleason 286        | NEMO    |
| 835    | <i>Polygonum hydropiperoides</i> |          |                             |         |
|        | v. & f. <i>hydropiperoides</i>   | Sullivan | 09/11/88 Gleason 349        | NEMO    |
| 839    | <i>Polygonum convolvulus</i>     |          |                             |         |
|        | v. <i>convolvulus</i>            | Schuyler | 08/22/86 Conrad 10781       | NEMO    |
| 841    | <i>Polygonum cuspidatum</i>      | Adair    | 09/08/86 Richardson<br>1646 | UMO/IPM |
| 841    | <i>Polygonum cuspidatum</i>      | Saline   | 05/23/85 Dierker 1391       | UMO/IPM |

## CHENOPODIACEAE

|        |                                  |          |                                    |         |
|--------|----------------------------------|----------|------------------------------------|---------|
| 845    | <i>Cycloloma atriplicifolium</i> | Adair    | 08/15/87 Walker 2071               | NEMO    |
| 846.99 | <i>Kochia scoparia</i>           | Cole     | 10/06/84 Raveill 2174              | MO      |
| 849.99 | <i>Chenopodium</i>               |          |                                    |         |
|        | <i>ambrosioides</i>              | Barton   | 07/11/84 Dierker 1256              | UMO/IPM |
|        | <i>ambrosioides</i>              | Lawrence | 07/09/86 Dierker 1559              | UMO/IPM |
| 857    | <i>Chenopodium</i>               |          |                                    |         |
|        | <i>gigantospermum</i>            | Cole     | 08/20/84 Raveill 2151              | MO      |
|        | <i>Chenopodium album</i>         |          |                                    |         |
| 860    | v. <i>album</i>                  | Schuyler | 09/19/87 Conrad &<br>Millett 11374 | NEMO    |
| 860.1  | v. <i>lanceolatum</i>            | Sullivan | 08/26/88 Gleason 293               | NEMO    |
| 869    | <i>Monolepis nuttalliana</i>     | Lincoln  | 05/12/88 Warmund 1830              | UMO/IPM |

## AMARANTHACEAE

|     |                                |         |                         |         |
|-----|--------------------------------|---------|-------------------------|---------|
| 876 | <i>Amaranthus tuberculatus</i> | Cole    | 10/06/84 Raveill 2169   | MO      |
| 876 | <i>Amaranthus tuberculatus</i> | Howard  | 09/13/84 Dierker 1266   | UMO/IPM |
| 877 | <i>Amaranthus tamariscinus</i> | Audrain | 08/18/83 Dierker 1182   | UMO/IPM |
| 877 | <i>Amaranthus tamariscinus</i> | Cole    | 10/06/84 Raveill 2171   | MO      |
| 877 | <i>Amaranthus tamariscinus</i> | Howard  | 08/23/83 Royall 80, 140 | UMO     |
| 877 | <i>Amaranthus tamariscinus</i> | Monroe  | 08/18/83 Dierker 1184   | UMO/IPM |

|     |                               |          |                              |         |
|-----|-------------------------------|----------|------------------------------|---------|
| 880 | <i>Amaranthus spinosus</i>    | Barton   | 07/11/84 <i>Dierker 1294</i> | UMO/IPM |
| 880 | <i>Amaranthus spinosus</i>    | Greene   | 07/12/83 <i>Huckla 1155</i>  | UMO/IPM |
| 880 | <i>Amaranthus spinosus</i>    | Lawrence | 07/09/86 <i>Dierker 1571</i> | UMO/IPM |
| 880 | <i>Amaranthus spinosus</i>    | Mercer   | 08/19/87 <i>Coffin 1819</i>  | UMO/IPM |
| 880 | <i>Amaranthus spinosus</i>    | Randolph | 10/01/77 <i>Riley 842</i>    | UMO/IPM |
| 883 | <i>Amaranthus retroflexus</i> | Cole     | 10/06/84 <i>Raveill 2180</i> | MO      |
| 890 | <i>Froelichia gracilis</i>    | Cole     | 06/13/84 <i>Raveill 2051</i> | MO      |

## PORTULACACEAE

|       |                                                 |          |                              |         |
|-------|-------------------------------------------------|----------|------------------------------|---------|
| 900   | <i>Portulaca oleracea</i>                       | Cole     | 06/09/84 <i>Raveill 2035</i> | MO      |
| 900   | <i>Portulaca oleracea</i>                       | Lawrence | 07/09/86 <i>Dierker 1689</i> | UMO/IPM |
| 905.1 | <i>Claytonia virginica</i><br>f. <i>robusta</i> | Macon    | 05/14/83 <i>Hein 34</i>      | NEMO    |

## CARYOPHYLLACEAE

|        |                                                          |            |                              |         |
|--------|----------------------------------------------------------|------------|------------------------------|---------|
| 908    | <i>Scleranthus annuus</i>                                | Lawrence   | 05/13/86 <i>Bower 1671</i>   | UMO/IPM |
| 908    | <i>Scleranthus annuus</i>                                | Oregon     | 05/12/88 <i>Minner 1809</i>  | UMO/IPM |
| 914    | <i>Arenaria serpyllifolia</i><br>v. <i>serpyllifolia</i> | Monroe     | 07/14/84 <i>Raveill 2124</i> | DNR     |
| 914.99 | <i>Arenaria serpyllifolia</i>                            | Boone      | 05/02/85 <i>Dierker 1501</i> | UMO/IPM |
| 914.99 | <i>Arenaria serpyllifolia</i>                            | Lawrence   | 04/08/86 <i>Dierker 1597</i> | UMO/IPM |
| 914.99 | <i>Arenaria serpyllifolia</i>                            | New Madrid | 04/15/85 <i>Dierker 1364</i> | UMO/IPM |
| 915    | <i>Arenaria lateriflora</i>                              | Macon      | 05/06/83 <i>Hein 37</i>      | NEMO    |
| 926    | <i>Cerastium viscosum</i><br>f. <i>viscosum</i>          | Iron       | 05/23/88 <i>Conrad 11730</i> | NEMO    |
| 945    | <i>Saponaria officinalis</i>                             | Lewis      | 07/01/87 <i>Conrad 11098</i> | NEMO    |
| 945    | <i>Saponaria officinalis</i>                             | Scotland   | 07/01/87 <i>Conrad 11123</i> | NEMO    |
| 949    | <i>Dianthus armeria</i>                                  | Howard     | 06/13/85 <i>Royall 160</i>   | UMO     |
| 949    | <i>Dianthus armeria</i>                                  | Pike       | 06/12/87 <i>Conrad 11050</i> | NEMO    |
| 949    | <i>Dianthus armeria</i>                                  | Schuyler   | 06/08/87 <i>Conrad 10971</i> | NEMO    |

## CERATOPHYLLACEAE

|     |                               |      |                              |    |
|-----|-------------------------------|------|------------------------------|----|
| 951 | <i>Ceratophyllum demersum</i> | Cole | 06/16/84 <i>Raveill 2078</i> | MO |
|-----|-------------------------------|------|------------------------------|----|

## NYMPHACEAE

|     |                                                   |      |                              |    |
|-----|---------------------------------------------------|------|------------------------------|----|
| 954 | <i>Nymphaea odorata</i><br>v. & f. <i>odorata</i> | Cole | 06/16/84 <i>Raveill 2063</i> | MO |
|-----|---------------------------------------------------|------|------------------------------|----|

|     |                         |       |                                    |      |
|-----|-------------------------|-------|------------------------------------|------|
| 957 | <i>Nelumbo nucifera</i> | Adair | 07/10/87 Conrad &<br>Caverly 11154 | NEMO |
|-----|-------------------------|-------|------------------------------------|------|

## RANUNCULACEAE

|         |                                                    |        |                       |         |
|---------|----------------------------------------------------|--------|-----------------------|---------|
| 966     | <i>Thalictrum dioicum</i>                          | Iron   | 05/23/88 Conrad 11719 | NEMO    |
| 968     | <i>Thalictrum revolutum</i><br>f. <i>revolutum</i> | Macon  | 06/19/83 Hein 40      | NEMO    |
| 968.99  | <i>Thalictrum revolutum</i>                        | Saline | 06/23/83 Dierker 1124 | UMO/IPM |
| 971     | <i>Delphinium ajacis</i>                           | Cole   | 06/09/84 Raveill 2049 | MO      |
| 983     | <i>Ranunculus micranthus</i>                       | Howard | 04/11/85 Royall 147   | UMO     |
| 983     | <i>Ranunculus micranthus</i>                       | Knox   | 04/17/88 Gleason 12   | NEMO    |
| 986.99  | <i>Ranunculus sceleratus</i>                       | Cole   | 06/16/84 Raveill 2058 | MO      |
| 993.99  | <i>Ranunculus fascicularis</i>                     | Howard | 04/08/86 Royall 224   | UMO     |
| 997     | <i>Myosurus minimus</i>                            | Knox   | 05/10/85 Dierker 1504 | UMO/IPM |
| 997     | <i>Myosurus minimus</i>                            | Lewis  | 05/09/86 Shively 1781 | UMO/IPM |
| 997     | <i>Myosurus minimus</i>                            | Marion | 04/26/85 Dierker 1264 | UMO/IPM |
| 997     | <i>Myosurus minimus</i>                            | Vernon | 05/05/87 Wojcik 1813  | UMO/IPM |
| 1005.99 | <i>Clematis dioscoreifolia</i>                     | Cole   | 10/06/84 Raveill 2165 | MO      |

## LAURACEAE

|        |                                               |        |                       |      |
|--------|-----------------------------------------------|--------|-----------------------|------|
| 1020.1 | <i>Lindera benzoin</i><br>v. <i>pubescens</i> | Oregon | 09/17/88 Conrad 11993 | NEMO |
|--------|-----------------------------------------------|--------|-----------------------|------|

## PAPAVERACEAE

|      |                                                    |         |                       |         |
|------|----------------------------------------------------|---------|-----------------------|---------|
| 1026 | <i>Papaver dubium</i>                              | Webster | 05/16/85 Dierker 1416 | UMO/IPM |
| 1030 | <i>Dicentra cucullaria</i><br>f. <i>cucullaria</i> | Knox    | 04/17/88 Gleason 18   | NEMO    |

## CRUCIFERAE

|         |                                                |          |                       |         |
|---------|------------------------------------------------|----------|-----------------------|---------|
| 1039    | <i>Brassica kaber</i><br>v. <i>pinnatifida</i> | Saline   | 05/31/83 Dierker 1088 | UMO/IPM |
| 1040    | <i>Brassica nigra</i>                          | Cole     | 10/06/84 Raveill 2167 | MO      |
| 1040    | <i>Brassica nigra</i>                          | Pike     | 06/15/85 Dierker 1498 | UMO/IPM |
| 1048    | <i>Conringia orientalis</i>                    | Crawford | 04/16/88 Conrad 11513 | NEMO    |
| 1049    | <i>Lepidium campestre</i>                      | Howard   | 05/02/85 Royall 152   | UMO     |
| 1050    | <i>Lepidium perfoliatum</i>                    | Crawford | 04/16/88 Conrad 11523 | NEMO    |
| 1051.99 | <i>Lepidium virginicum</i>                     | Howard   | 06/18/82 Royall 9     | UMO     |
| 1054    | <i>Cardaria draba</i>                          | Marion   | 05/09/86 Dierker 1592 | UMO/IPM |

|         |                                                     |             |          |                    |         |
|---------|-----------------------------------------------------|-------------|----------|--------------------|---------|
| 1067    | <i>Lesquerella filiformis</i>                       | Christian   | 04/26/79 | Key 2252           | SMS     |
| 1071    | <i>Cardamine bulbosa</i><br>f. <i>bulbosa</i>       | Sullivan    | 05/09/84 | Broyles            | NEMO    |
| 1073    | <i>Cardamine hirsuta</i>                            | Boone       | 11/22/83 | Dierker 1204       | UMO/IPM |
| 1087    | <i>Rorippa sinuata</i>                              | Howard      | 05/07/82 | Dierker 980        | UMO/IPM |
| 1088    | <i>Rorippa sessiliflora</i>                         | Buchanan    | 06/09/83 | Dierker 1103       | UMO/IPM |
| 1090.99 | <i>Rorippa islandica</i>                            | Howard      | 06/01/84 | Royall 111         | UMO     |
| 1093    | <i>Chorispora tenella</i>                           | St. Charles | 04/15/87 | Kluesner<br>174209 | UMO/IPM |
| 1097    | <i>Erysimum repandum</i>                            | Howard      | 04/18/84 | Royall 95          | UMO     |
| 1097    | <i>Erysimum repandum</i>                            | Pemiscot    | 05/06/83 | Dierker 1110       | UMO/IPM |
| 1099.99 | <i>Sisymbrium officinale</i>                        | Saline      | 05/23/85 | Dierker 1383       | UMO/IPM |
| 1101    | <i>Sisymbrium loeselii</i>                          | Callaway    | 06/13/84 | Dierker 1344       | UMO/IPM |
| 1101    | <i>Sisymbrium loeselii</i>                          | Howard      | 05/19/85 | Royall 153         | UMO     |
| 1105.1  | <i>Descurainia pinnata</i><br>v. <i>brachycarpa</i> | Marion      | 05/09/86 | Dierker 1638       | UMO/IPM |
| 1106    | <i>Descurainia sophia</i>                           | Chariton    | 06/23/88 | Yocky 1837         | UMO/IPM |

## CAPPARIDACEAE

|         |                                                       |          |          |           |         |
|---------|-------------------------------------------------------|----------|----------|-----------|---------|
| 1109.99 | <i>Polanisia dodecandra</i><br>ssp. <i>dodecandra</i> | Scotland | 07/27/88 | Meek 1908 | UMO/IPM |
|---------|-------------------------------------------------------|----------|----------|-----------|---------|

## CRASSULACEAE

|      |                       |                   |          |               |         |
|------|-----------------------|-------------------|----------|---------------|---------|
| 1114 | <i>Sedum ternatum</i> | Cape<br>Girardeau | 04/27/87 | Craiglow 1812 | UMO/IPM |
|------|-----------------------|-------------------|----------|---------------|---------|

## ROSACEAE

|         |                                                   |          |          |                           |         |
|---------|---------------------------------------------------|----------|----------|---------------------------|---------|
| 1146    | <i>Pyrus communis</i>                             | Schuyler | 09/19/87 | Conrad &<br>Millett 11342 | NEMO    |
| 1167.99 | <i>Crataegus crusgalli</i>                        | Howard   | 05/17/84 | Royall 98                 | UMO     |
| 1187.99 | <i>Crataegus noelensis</i>                        | Schuyler | 09/22/86 | Conrad 10762              | NEMO    |
| 1207    | <i>Duchesnea indica</i>                           | Vernon   | 06/02/88 | Wojcik 1805               | UMO/IPM |
| 1209.1  | <i>Potentilla simplex</i><br>v. <i>calvescens</i> | Sullivan | 09/23/82 | Conrad 9993               | NEMO    |
| 1211.99 | <i>Potentilla norvegica</i>                       | Callaway | 05/29/85 | Dierker 1450              | UMO/IPM |
| 1219.1  | <i>Geum canadense</i><br>v. <i>camporum</i>       | Monroe   | 07/14/84 | Raveill 2104              | DNR     |
| 1222.99 | <i>Rubus occidentalis</i>                         | Howard   | 05/02/85 | Royall 151                | UMO     |
| 1226    | <i>Rubus trivialis</i>                            | Camden   | 04/25/87 | Caverly 189               | NEMO    |

|        |                                         |          |          |              |         |
|--------|-----------------------------------------|----------|----------|--------------|---------|
| 1227.1 | <i>Rubus flagellaris</i>                |          |          |              |         |
|        | v. & f. <i>occidialis</i>               | Adair    | 05/16/87 | Ford         | NEMO    |
| 1228   | <i>Rubus enslenii</i>                   | Adair    | 05/22/88 | Walker 117   | NEMO    |
| 1229   | <i>Rubus invisus</i>                    | Crawford | 05/17/88 | Conrad 11631 | REIS    |
| 1232   | <i>Rubus orarius</i>                    | Adair    | 05/16/87 | Ford         | NEMO    |
| 1242   | <i>Rosa multiflora</i>                  | Lincoln  | 05/27/84 | Schuetz 495  | DNR     |
| 1242   | <i>Rosa multiflora</i>                  | Schuyler | 06/08/87 | Conrad 10993 | NEMO    |
| 1251.1 | <i>Rosa carolina</i>                    |          |          |              |         |
|        | v. <i>carolina</i> f. <i>glandulosa</i> | Schuyler | 06/08/87 | Conrad 10961 | NEMO    |
| 1258   | <i>Prunus mexicana</i>                  | Howard   | 04/03/86 | Royall 222   | UMO     |
| 1261   | <i>Prunus munsoniana</i>                | Howard   | 04/06/86 | Royall 223   | UMO     |
| 1266   | <i>Prunus serotina</i>                  | Wright   | 07/20/88 | Rippee 1848  | UMO/IPM |

## LEGUMINOSAE

|         |                               |          |          |                               |         |
|---------|-------------------------------|----------|----------|-------------------------------|---------|
| 1269    | <i>Desmanthus illinoensis</i> | Howard   | 08/01/85 | Royall 188                    | UMO     |
| 1269    | <i>Desmanthus illinoensis</i> | Putnam   | 09/05/84 | Unknown                       | NEMO    |
| 1287.99 | <i>Crotalaria sagittalis</i>  | Howard   | 07/21/84 | Royall 122                    | UMO     |
| 1289    | <i>Trifolium pratense</i>     |          |          |                               |         |
|         | v. & f. <i>pratense</i>       | Schuyler | 09/19/87 | Conrad &<br>Millett 11384     | NEMO    |
| 1289.1  | <i>Trifolium pratense</i>     |          |          |                               |         |
|         | v. <i>pratense</i>            |          |          |                               |         |
| 1289.1  | f. <i>leucochraceum</i>       | Adair    | 08/22/82 | Walker 165                    | NEMO    |
|         | f. <i>leucochraceum</i>       | Sullivan | 09/12/87 | Conrad & Grone-<br>feld 11290 | NEMO    |
| 1294.99 | <i>Trifolium hybridum</i>     | Cole     | 06/16/84 | Raveill 2072                  | MO      |
| 1299    | <i>Trifolium campestre</i>    | Chariton | 06/12/85 | Miller 1454                   | UMO/IPM |
| 1302.1  | <i>Medicago lupulina</i>      |          |          |                               |         |
|         | v. <i>glandulosa</i>          | Harrison | 08/07/86 | Jones 1562                    | UMO/IPM |
| 1302.99 | <i>Medicago lupulina</i>      | Reynolds | 05/04/84 | Raveill 2030                  | DNR     |
| 1302.99 | <i>Medicago lupulina</i>      | Howard   | 05/22/85 | Royall 155                    | UMO     |
| 1308    | <i>Lotus corniculatus</i>     | Audrain  | 07/01/87 | Conrad 11145                  | NEMO    |
| 1308    | <i>Lotus corniculatus</i>     | Clark    | 07/01/87 | Conrad 11120                  | NEMO    |
| 1308    | <i>Lotus corniculatus</i>     | Davies   | 06/01/87 | Delozier 1136-B               | NEMO    |
| 1308    | <i>Lotus corniculatus</i>     | Knox     | 07/01/87 | Conrad 11087                  | NEMO    |
| 1308    | <i>Lotus corniculatus</i>     | Lewis    | 07/01/87 | Conrad 11089                  | NEMO    |
| 1308    | <i>Lotus corniculatus</i>     | Macon    | 06/12/87 | Conrad 11056                  | NEMO    |
| 1308    | <i>Lotus corniculatus</i>     | Marian   | 07/07/87 | Conrad 11148                  | NEMO    |
| 1308    | <i>Lotus corniculatus</i>     | Putnam   | 09/12/87 | Conrad 11286                  | NEMO    |
| 1308    | <i>Lotus corniculatus</i>     | Scotland | 07/01/87 | Conrad 11122                  | NEMO    |
| 1308    | <i>Lotus corniculatus</i>     | Shelby   | 07/07/87 | Conrad 11149                  | NEMO    |

|         |                                                      |             |          |                           |         |
|---------|------------------------------------------------------|-------------|----------|---------------------------|---------|
| 1322.3  | <i>Amorpha fruticosa</i><br>v. <i>angustifolia</i>   | Schuyler    | 08/22/86 | Conrad 10792              | NEMO    |
| 1323.1  | <i>Tephrosia virginiana</i><br>v. <i>holosericea</i> | Crawford    | 06/01/88 | Conrad 11848              | REIS    |
| 1331    | <i>Astragalus caryocarpus</i>                        | Macon       | 04/27/83 | Hein 32                   | NEMO    |
| 1335    | <i>Coronilla varia</i>                               | Clark       | 07/01/87 | Conrad 11121              | NEMO    |
| 1335    | <i>Coronilla varia</i>                               | Lewis       | 07/01/87 | Conrad 11090              | NEMO    |
| 1341.99 | <i>Desmodium canescens</i>                           | Carroll     | 08/17/82 | Dierker 829               | UMO/IPM |
| 1364    | <i>Lespedeza capitata</i><br>v. <i>capitata</i>      | Clark       | 07/01/87 | Conrad 11104              | NEMO    |
| 1366    | <i>Lespedeza cuneata</i>                             | Barton      | 07/11/84 | Dierker 1303              | UMO/IPM |
| 1366    | <i>Lespedeza cuneata</i>                             | Oregon      | 09/17/88 | Conrad 11995              | NEMO    |
| 1368    | <i>Lespedeza stipulacea</i>                          | Cole        | 10/06/85 | Raveill 2186              | MO      |
| 1372.99 | <i>Vicia sativa</i>                                  | Pemiscot    | 05/12/83 | Dierker 1036              | UMO/IPM |
| 1374    | <i>Vicia hirsuta</i>                                 | Dunklin     | 05/09/85 | Raveill 2306              | MO      |
| 1378.99 | <i>Vicia villosa</i>                                 | Mississippi | 07/12/77 | Berkebille 948            | UMO/IPM |
| 1395    | <i>Atrophostyles leiosperma</i>                      | Audrain     | 07/23/86 | Dierker 1395              | UMO/IPM |
| 1395    | <i>Strophostyles leiosperma</i>                      | Howard      | 08/20/82 | Royall 26                 | UMO     |
| 1401    | <i>Rhynchosia latifolia</i>                          | Crawford    | 05/20/88 | Conrad &<br>Callaci 11700 | NEMO    |

## OXALIDACEAE

|        |                                                |          |          |                           |      |
|--------|------------------------------------------------|----------|----------|---------------------------|------|
| 1408.2 | <i>Oxalis violacea</i><br>v. <i>tricophora</i> | Camden   | 04/25/87 | Caverly 180               | NEMO |
| 1410   | <i>Oxalis dillenii</i><br>ssp. <i>dillenii</i> | Cole     | 06/16/84 | Raveill 2059              | MO   |
|        | ssp. <i>dillenii</i>                           | Crawford | 05/17/88 | Conrad 11630              | NEMO |
|        | ssp. <i>dillenii</i>                           | Reynolds | 05/04/84 | Raveill 2031              | DNR  |
| 1410   | ssp. <i>dillenii</i>                           | Schuyler | 09/19/87 | Conrad &<br>Millett 11425 | NEMO |

## GERANIACEAE

|         |                                                        |          |          |              |      |
|---------|--------------------------------------------------------|----------|----------|--------------|------|
| 1413    | <i>Geranium carolinianum</i><br>v. <i>carolinianum</i> | Crawford | 05/19/88 | Conrad 11678 | NEMO |
| 1413.99 | <i>Geranium carolinianum</i>                           | Lincoln  | 06/08/84 | Schuetz 542  | DNR  |
| 1415    | <i>Geranium pusillum</i>                               | Cole     | 06/09/84 | Raveill 2052 | MO   |

## ZYGOPHYLLACEAE

|      |                            |        |          |            |     |
|------|----------------------------|--------|----------|------------|-----|
| 1418 | <i>Tribulus terrestris</i> | Howard | 07/16/85 | Royall 176 | UMO |
|------|----------------------------|--------|----------|------------|-----|

1418 *Tribulus terrestris* Mississippi 07/19/77 Berkebile 946 UMO/IPM

## SIMAROUACEAE

1423 *Ailanthus altissima* Howard 11/04/85 Royall 216 UMO

## EUPHORBIACEAE

1433 *Croton monanthogynus* Shannon 09/03/86 Wester 1650 UMO/IPM

1437 *Acalypha ostryaefolia* Callaway 07/26/83 LaBarge 1175 UMO/IPM

1437 *Acalypha ostryaefolia* Cole 08/20/84 Raveill 2155 MO

1437 *Acalypha ostryaefolia* Franklin 08/12/85 Dierker 1616 UMO/IPM

1437 *Acalypha ostryaefolia* Holt 08/03/86 Williams 1565 UMO/IPM

*Euphorbia dentata*

1444 f. *dentata* Schuyler 08/22/86 Conrad 10802 NEMO

f. *dentata* Sullivan 09/11/88 Gleason 350 NEMO

1444.1 f. *cuphosperma* Schuyler 09/19/87 Conrad 11460 NEMO

1444.99 *Euphorbia dentata* Dunklin 06/29/88 Sims 1832 UMO/IPM

1444.99 *Euphorbia dentata* Howard 07/20/85 Royall 182 UMO

1447 *Euphorbia obtusata* Cole 06/16/84 Raveill 2074 MO

1453.1 *Euphorbia corollata*  
v. *mollis* Shannon 05/26/88 Conrad 11789 REIS

1456 *Euphorbia serpens* Howard 08/26/88 Dierker 1911 UMO/IPM

1457 *Euphorbia maculata* Jefferson 09/08/86 Wilson 1684 UMO/IPM

1461 *Euphorbia prostrata* Boone 10/03/84 Dierker 1327 UMO/IPM

1461 *Euphorbia prostrata* Monroe 07/14/84 Raveill 2125 DNR

## CELASTRACEAE

1477 *Euonymus atropurpureus* Howard 06/13/85 Royall 158 UMO

## HIPPOCASTANACEAE

1487 *Aesculus glabra*  
v. & f. *glabra* Knox 09/06/86 Caverly &  
Millett 6 NEMO

## SAPINDACEAE

1490 *Sapindus drummondii* Randolph 10/03/88 Westhues NEMO

## RHAMNACEAE

|         |                            |        |          |               |         |
|---------|----------------------------|--------|----------|---------------|---------|
| 1497.99 | <i>Rhamnus caroliniana</i> | Dallas | 07/28/85 | Ingram 1617   | UMO/IPM |
| 1497.99 | <i>Rhamnus caroliniana</i> | Greene | 10/04/88 | Anderson 1916 | UMO/IPM |

## MALVACEAE

|         |                              |             |          |                |         |
|---------|------------------------------|-------------|----------|----------------|---------|
| 1518    | <i>Malva neglecta</i>        | Crawford    | 05/23/88 | Conrad 1701    | NEMO    |
| 1522.99 | <i>Callirhoe involucreta</i> | Atchison    | 06/08/88 | Chapple 1806   | UMO/IPM |
| 1522.99 | <i>Callirhoe involucreta</i> | Benton      | 06/24/86 | Hubbard 1847   | UMO/IPM |
| 1527    | <i>Sida spinosa</i>          | Cole        | 08/20/84 | Raveill 2161   | MO      |
| 1527    | <i>Sida spinosa</i>          | Mississippi | 06/29/77 | Berkebile 947  | UMO/IPM |
| 1529.99 | <i>Anoda cristata</i>        | Chariton    | 07/31/87 | Schmidt 1788   | UMO/IPM |
| 1529.99 | <i>Anoda cristata</i>        | Lafayette   | 11/06/85 | Bentlage 1631  | UMO/IPM |
| 1529.99 | <i>Anoda cristata</i>        | New Madrid  | 08/22/84 | Dierker 1368   | UMO/IPM |
| 1529.99 | <i>Anoda cristata</i>        | Newton      | 10/02/85 | Shank 1633     | UMO/IPM |
| 1529.99 | <i>Anoda cristata</i>        | Saline      | 06/13/85 | Alexander 1467 | UMO/IPM |
| 1530    | <i>Abutilon theophrasti</i>  | Cole        | 10/06/84 | Raveill 2166   | MO      |
| 1534    | <i>Hibiscus trionum</i>      | Schuyler    | 09/19/87 | Conrad 11462   | NEMO    |
| 1534    | <i>Hibiscus trionum</i>      | Vernon      | 10/30/86 | Mason 1785     | UMO/IPM |

## HYPERICACEAE

|        |                                                                              |          |          |                        |      |
|--------|------------------------------------------------------------------------------|----------|----------|------------------------|------|
| 1538.1 | <i>Hypericum punctatum</i><br>v. <i>punctatum</i><br>f. <i>subpetiolatum</i> | Randolph | 05/20/81 | Conrad &<br>Perry 9166 | NEMO |
|--------|------------------------------------------------------------------------------|----------|----------|------------------------|------|

## CISTACEAE

|      |                                |          |          |              |    |
|------|--------------------------------|----------|----------|--------------|----|
| 1552 | <i>Helianthemum bicknellii</i> | Atchison | 06/18/85 | Raveill 2317 | MO |
|------|--------------------------------|----------|----------|--------------|----|

## VIOLACEAE

|         |                                             |          |          |              |      |
|---------|---------------------------------------------|----------|----------|--------------|------|
| 1557    | <i>Viola pedata</i> v. <i>pedata</i>        | Schuyler | 04/25/87 | Conrad 10910 | NEMO |
| 1557.1  | v. <i>pedata</i> &<br>f. <i>lineariloba</i> | Schuyler | 04/25/87 | Conrad 10911 | NEMO |
| 1560.99 | <i>Viola missouriensis</i>                  | Schuyler | 04/25/87 | Conrad 10923 | NEMO |
| 1561    | <i>Viola sororia</i> f. <i>sororia</i>      | Macon    | 04/27/83 | Hein 31      | NEMO |
| 1563    | <i>Viola triloba</i> f. <i>triloba</i>      | Camden   | 04/19/86 | Caverly 160  | NEMO |



## PASSIFLORACEAE

|      |                             |        |                        |         |
|------|-----------------------------|--------|------------------------|---------|
| 1573 | <i>Passiflora incarnata</i> | Cole   | 08/20/84 Raveill 2149  | MO      |
| 1573 | <i>Passiflora incarnata</i> | Howell | 11/01/85 Proffitt 1624 | UMO/IPM |

## LYTHRACEAE

|         |                            |         |                       |         |
|---------|----------------------------|---------|-----------------------|---------|
| 1581    | <i>Ammannia auriculata</i> | Carroll | 07/20/82 Dierker 992  | UMO/IPM |
| 1581    | <i>Ammannia auriculata</i> | Saline  | 07/27/84 Dierker 1365 | UMO/IPM |
| 1585.99 | <i>Lythrum salicaria</i>   | Boone   | 07/24/85 Dierker 1542 | UMO/IPM |

## ONAGRACEAE

|         |                                                    |          |                                    |         |
|---------|----------------------------------------------------|----------|------------------------------------|---------|
| 1591    | <i>Jussiaea repens</i><br>v. <i>glabrescens</i>    | Cole     | 06/16/84 Raveill 2080              | MO      |
| 1602.3  | <i>Oenothera biennis</i><br>v. <i>hirsutissima</i> | Schuyler | 09/19/87 Conrad &<br>Millett 11444 | NEMO    |
| 1605.99 | <i>Oenothera laciniata</i>                         | Barton   | 05/24/84 Dierker 1407              | UMO/IPM |
| 1608    | <i>Oenothera linifolia</i>                         | Webster  | 05/16/85 Dierker 1384              | UMO/IPM |
| 1617.99 | <i>Gaura parviflora</i>                            | Howard   | 06/30/85 Royall 168                | UMO     |

## UMBELLIFERAE

|         |                                                 |          |                                    |         |
|---------|-------------------------------------------------|----------|------------------------------------|---------|
| 1631    | <i>Sanicula gregaria</i>                        | Crawford | 05/20/88 Conrad &<br>Callaci 11685 | REIS    |
| 1645    | <i>Erigenia bulbosa</i>                         | Howard   | 04/03/86 Royall 221                | UMO     |
| 1646    | <i>Conium maculatum</i>                         | Audrain  | 06/06/84 Dierker 1337              | UMO/IPM |
| 1646    | <i>Conium maculatum</i>                         | Wright   | 05/13/86 Dierker 1717              | UMO/IPM |
| 1648    | <i>Spermolepis inermis</i>                      | Cole     | 06/09/84 Raveill 2041              | MO      |
| 1654.99 | <i>Cicuta maculata</i>                          | Howard   | 07/20/82 Royall 21                 | UMO     |
| 1670.1  | <i>Thaspium trifoliatum</i><br>v. <i>flavum</i> | Crawford | 05/20/88 Conrad &<br>Callaci 11684 | REIS    |
| 1677    | <i>Pastinaca sativa</i>                         | Lewis    | 07/01/87 Conrad 11094              | NEMO    |
| 1677    | <i>Pastinaca sativa</i>                         | Wright   | 05/13/86 Dierker 1583              | UMO/IPM |
| 1680    | <i>Daucus pusillus</i>                          | Howard   | 07/07/85 Royall 172                | UMO     |

## CORNACEAE

|      |                       |          |                      |         |
|------|-----------------------|----------|----------------------|---------|
| 1684 | <i>Cornus obliqua</i> | Chariton | 08/03/79 Dierker 748 | UMO/IPM |
|------|-----------------------|----------|----------------------|---------|

|      |                        |           |                       |         |
|------|------------------------|-----------|-----------------------|---------|
| 1685 | <i>Cornus racemosa</i> | Lafayette | 06/17/83 Dierker 1118 | UMO/IPM |
|------|------------------------|-----------|-----------------------|---------|

## OLEACEAE

|      |                                                          |          |                       |      |
|------|----------------------------------------------------------|----------|-----------------------|------|
| 1717 | <i>Fraxinus pennsylvanica</i><br>v. <i>pennsylvanica</i> | Schuyler | 04/25/87 Conrad 10924 | NEMO |
|------|----------------------------------------------------------|----------|-----------------------|------|

## GENTIANACEAE

|      |                           |       |                      |     |
|------|---------------------------|-------|----------------------|-----|
| 1729 | <i>Sabatia campestris</i> | Barry | 07/15/83 Mitchell 80 | DNR |
|------|---------------------------|-------|----------------------|-----|

## ASCLEPIADACEAE

|        |                                                                                    |                      |                                                                 |              |
|--------|------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------|--------------|
| 1752.1 | <i>Asclepias viridiflora</i><br>v. <i>lanceolata</i>                               | Monroe               | 07/14/84 Raveill 2129                                           | DNR          |
| 1755   | <i>Asclepias incarnata</i><br>v. & f. <i>incarnata</i><br>v. & f. <i>incarnata</i> | Schuyler<br>Sullivan | 08/22/86 Conrad 10799<br>09/12/87 Conrad & Grone-<br>feld 11294 | NEMO<br>NEMO |

## CONVOLVULACEAE

|         |                                                                          |           |                                        |         |
|---------|--------------------------------------------------------------------------|-----------|----------------------------------------|---------|
| 1775.99 | <i>Ipomoea hederacea</i>                                                 | Howard    | 08/30/85 Royall 196                    | UMO     |
| 1776    | <i>Ipomoea purpurea</i>                                                  | Buchanan  | 07/26/84 Dierker 1279                  | UMO/IPM |
| 1776    | <i>Ipomoea purpurea</i>                                                  | Howard    | 09/10/85 Royall 201                    | UMO     |
| 1780.2  | <i>Convolvulus sepium</i><br>v. <i>sepium</i><br>f. <i>malacophyllus</i> | Crawford  | 06/02/88 Conrad & Aspin-<br>wall 11868 | NEMO    |
| 1782    | <i>Convolvulus arvensis</i><br>f. <i>arvensis</i>                        | Sullivan  | 09/11/88 Gleason 346                   | NEMO    |
| 1784    | <i>Cuscuta glomerata</i>                                                 | Gentry    | 08/15/88 Bracken 1918                  | UMO/IPM |
| 1787    | <i>Cuscuta campestris</i>                                                | Audrain   | 06/20/86 Schnarre 1661                 | UMO/IPM |
| 1787    | <i>Cuscuta campestris</i>                                                | Howard    | 09/13/84 Dierker 1360                  | UMO/IPM |
| 1787    | <i>Cuscuta campestris</i>                                                | Lafayette | 07/03/85 Dierker 1511                  | UMO/IPM |
| 1787    | <i>Cuscuta campestris</i>                                                | Macon     | 08/27/87 Dierker 1822                  | UMO/IPM |
| 1787    | <i>Cuscuta campestris</i>                                                | Saline    | 08/12/83 Dierker 1195                  | UMO/IPM |
| 1791    | <i>Cuscuta polygonorum</i>                                               | Lincoln   | 09/26/84 Schuette 774                  | DNR     |

## POLOMONIACEAE

|      |                                      |       |                       |    |
|------|--------------------------------------|-------|-----------------------|----|
| 1795 | <i>Phlox bifida</i> v. <i>bifida</i> | Boone | 04/18/85 Raveill 2299 | MO |
|------|--------------------------------------|-------|-----------------------|----|

## BORAGINACEAE

|      |                                                   |          |                       |         |
|------|---------------------------------------------------|----------|-----------------------|---------|
| 1823 | <i>Lithospermum arvense</i>                       | Pemiscot | 05/06/83 Dierker 1020 | UMO/IPM |
| 1836 | <i>Mertensia virginica</i><br>f. <i>virginica</i> | Macon    | 04/27/83 Hein 33      | NEMO    |

## VERBENACEAE

|         |                           |          |                       |      |
|---------|---------------------------|----------|-----------------------|------|
| 1841.99 | <i>Verbena hastata</i>    | Howard   | 06/30/85 Royall 167   | UMO  |
| 1844    | <i>Verbena bracteata</i>  | Randolph | 06/09/77 Sanders      | NEMO |
| 1845.99 | <i>Verbena canadensis</i> | Adair    | 09/27/87 Conrad 11469 | NEMO |

## LABIATAE

|         |                                                       |          |                                     |         |
|---------|-------------------------------------------------------|----------|-------------------------------------|---------|
| 1858.1  | <i>Scutellaria lateriflora</i><br>f. <i>albiflora</i> | Shannon  | 05/26/88 Conrad &<br>Franklin 11763 | REIS    |
| 1866    | <i>Nepeta cataria</i>                                 | Cole     | 08/20/84 Raveill 2162               | MO      |
| 1867.99 | <i>Glechoma hederacea</i>                             | Chariton | 08/06/82 Plymell 824                | UMO/IPM |
| 1869.1  | <i>Prunella vulgaris</i><br>v. & f. <i>lanceolata</i> | Lewis    | 09/05/81 Hopkins 100                | NEMO    |
| 1878    | <i>Lamium purpureum</i>                               | Howard   | 04/28/86 Royall 227                 | UMO     |
| 1894    | <i>Blephilia hirsuta</i> v. <i>hirsuta</i>            | Macon    | 06/19/83 Hein 42                    | NEMO    |
| 1908.99 | <i>Lycopus americanus</i>                             | Howard   | 07/22/85 Royall 184                 | UMO     |

## SOLANACEAE

|        |                                                         |          |                                    |         |
|--------|---------------------------------------------------------|----------|------------------------------------|---------|
| 1921   | <i>Solanum americanum</i>                               | Adair    | 08/31/88 Gleason 343               | NEMO    |
| 1921   | <i>Solanum americanum</i>                               | Atchison | 10/15/82 Dierker 803               | UMO/IPM |
| 1921   | <i>Solanum americanum</i>                               | Howard   | 06/30/85 Royall 169                | UMO     |
| 1923   | <i>Solanum sarachoides</i>                              | Boone    | 07/02/86 Dierker 1659              | UMO/IPM |
| 1931   | <i>Physalis heterophylla</i><br>v. <i>heterophylla</i>  | Iron     | 05/23/88 Conrad 11718              | NEMO    |
| 1933   | <i>Physalis longifolia</i><br>v. & f. <i>longifolia</i> | Schuyler | 09/19/87 Conrad &<br>Millett 11431 | NEMO    |
| 1933.1 | v. & f. <i>subglabrata</i>                              | Madison  | 08/26/85 Long 1674                 | UMO/IPM |
| 1939   | <i>Lycium halimifolium</i>                              | Howard   | 08/01/85 Royall 186                | UMO     |

## SCROPHULARIACEAE

|         |                          |      |                       |    |
|---------|--------------------------|------|-----------------------|----|
| 1951.99 | <i>Gratiola neglecta</i> | Cole | 06/16/84 Raveill 2061 | MO |
|---------|--------------------------|------|-----------------------|----|

|        |                            |          |          |              |         |
|--------|----------------------------|----------|----------|--------------|---------|
| 1961   | <i>Verbascum blattaria</i> |          |          |              |         |
|        | f. <i>blattaria</i>        | Adair    | 06/01/70 | Conrad 5637  | NEMO    |
| 1961.1 | f. <i>erubescens</i>       | Shannon  | 05/26/88 | Conrad 11788 | REIS    |
| 1989   | <i>Veronica polita</i>     | Atchison | 06/27/85 | Dierker 1509 | UMO/IPM |
| 1989   | <i>Veronica polita</i>     | Buchanan | 06/09/83 | Dierker 1069 | UMO/IPM |
| 1989   | <i>Veronica polita</i>     | Cole     | 04/07/84 | Raveill 2023 | MO      |
| 1989   | <i>Veronica polita</i>     | Lawrence | 05/13/86 | Dierker 1584 | UMO/IPM |
| 1989   | <i>Veronica polita</i>     | Reynolds | 05/04/84 | Raveill 2032 | DNR     |

## BIGNONIACEAE

|      |                         |          |          |                           |      |
|------|-------------------------|----------|----------|---------------------------|------|
| 2012 | <i>Catalpa speciosa</i> | Schuyler | 09/19/87 | Conrad &<br>Millett 11339 | NEMO |
|------|-------------------------|----------|----------|---------------------------|------|

## MARTYNIACEAE

|      |                                |         |          |              |         |
|------|--------------------------------|---------|----------|--------------|---------|
| 2014 | <i>Proboscidea louisianica</i> | Audrain | 08/12/88 | Prior 1903   | UMO/IPM |
| 2014 | <i>Proboscidea louisianica</i> | Holt    | 08/24/86 | Flanary 1778 | UMO/IPM |
| 2014 | <i>Proboscidea louisianica</i> | Miller  | 09/13/88 | Dowdy 1915   | UMO/IPM |

## OROBANCHACEAE

|      |                           |         |          |           |      |
|------|---------------------------|---------|----------|-----------|------|
| 2015 | <i>Orobanche uniflora</i> | Shannon | 05/26/88 | Aspinwall | REIS |
|------|---------------------------|---------|----------|-----------|------|

## ACANTHACEAE

|        |                                                     |          |          |                               |      |
|--------|-----------------------------------------------------|----------|----------|-------------------------------|------|
| 2021.2 | <i>Ruellia humilis</i><br>v. <i>frondosa</i>        | Sullivan | 09/12/87 | Conrad & Grone-<br>feld 11291 | NEMO |
| 2021.3 | <i>Ruellia humilis</i><br>v. & f. <i>longiflora</i> | Sullivan | 08/26/88 | Gleason 294                   | NEMO |

## PLANTAGINACEAE

|      |                          |         |          |            |      |
|------|--------------------------|---------|----------|------------|------|
| 2026 | <i>Plantago cordata</i>  | Shannon | 05/26/88 | Aspinwall  | REIS |
| 2030 | <i>Plantago aristata</i> | Howard  | 07/05/84 | Royall 119 | UMO  |

## RUBIACEAE

|         |                            |          |          |               |         |
|---------|----------------------------|----------|----------|---------------|---------|
| 2048.09 | <i>Galium pedemontanum</i> | Cedar    | 05/10/84 | Hubbard 1242  | UMO/IPM |
|         | <i>Galium pedemontanum</i> | Lawrence | 04/08/86 | Dierker 1637  | UMO/IPM |
|         | <i>Galium pedemontanum</i> | Texas    | 05/13/88 | Jennings 1808 | UMO/IPM |

|         |                                     |          |                       |         |
|---------|-------------------------------------|----------|-----------------------|---------|
|         | <i>Galium pedemontanum</i>          | Webster  | 05/16/84 Dierker 1426 | UMO/IPM |
| 2051    | <i>Diodia teres</i> v. <i>teres</i> | Sullivan | 09/18/88 Gleason 387  | NEMO    |
| 2051.99 | <i>Diodia teres</i>                 | Howard   | 08/11/83 LaBarge 1170 | UMO/IPM |

## CAPRIFOLIACEAE

|         |                                                   |          |                       |      |
|---------|---------------------------------------------------|----------|-----------------------|------|
| 2066.99 | <i>Lonicera dioica</i>                            | Lincoln  | 07/09/84 Schuette 599 | DNR  |
| 2081.2  | <i>Sambucus canadensis</i><br>v. <i>submollis</i> | Schuyler | 06/08/87 Conrad 11019 | NEMO |

## DIPSACACEAE

|         |                            |            |                         |         |
|---------|----------------------------|------------|-------------------------|---------|
| 2088.99 | <i>Dipsacus sylvestris</i> | Bates      | 07/28/83 Dierker 1209   | UMO/IPM |
| 2088.99 | <i>Dipsacus sylvestris</i> | Callaway   | 07/27/83 Dierker 1172   | UMO/IPM |
| 2088.99 | <i>Dipsacus sylvestris</i> | Ozark      | 07/02/85 Hambelton 1546 | UMO/IPM |
| 2088.09 | <i>Dipsacus laciniatus</i> | Caldwell   | 07/29/83 Dierker 1214   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Callaway   | 07/17/84 Dierker 1275   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Clark      | 02/28/84 Dierker 1223   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Cooper     | 07/18/84 Dierker 1350   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Dekalb     | 07/29/83 Dierker 1212   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Howard     | 08/01/83 Dierker 1208   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Johnson    | 09/11/85 Philbrick 1634 | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Linn       | 07/25/84 Dierker 1311   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Livingston | 07/29/83 Dierker 1215   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Macon      | 07/25/84 Dierker 1312   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Marion     | 08/08/85 Dierker 1618   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Montgomery | 07/25/84 Dierker 1404   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Pike       | 07/20/84 McDonald 1797  | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Ralls      | 07/03/83 Dierker 1132   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Randolph   | 07/25/84 Dierker 1313   | UMO/IPM |
|         | <i>Dipsacus laciniatus</i> | Shelby     | 07/17/86 Dierker 1558   | UMO/IPM |

## CUCURBITACEAE

|      |                         |          |                      |         |
|------|-------------------------|----------|----------------------|---------|
| 2097 | <i>Sicyos angulatus</i> | Callaway | 06/29/84 Gentry 1341 | UMO/IPM |
|------|-------------------------|----------|----------------------|---------|

## COMPOSITAE

|         |                                                    |          |                      |      |
|---------|----------------------------------------------------|----------|----------------------|------|
| 2125.2  | <i>Eupatorium rugosum</i><br>v. <i>tomentellum</i> | Harrison | 09/12/82 Conrad 9906 | NEMO |
| 2140.99 | <i>Grindelia squarrosa</i>                         | Adair    | 09/24/87 Dimit       | NEMO |
| 2141.99 | <i>Grindelia lanceolata</i>                        | Howard   | 10/12/84 Royall 141  | UMO  |

|         |                                                                       |          |          |                          |         |
|---------|-----------------------------------------------------------------------|----------|----------|--------------------------|---------|
| 2163.1  | <i>Solidago altissima</i>                                             | Schuyler | 09/12/87 | Conrad 9875              | NEMO    |
| 2163.1  | <i>Solidago altissima</i>                                             | Sullivan | 09/12/87 | Conrad & Gronefeld 11301 | NEMO    |
| 2165    | <i>Solidago rigida</i> v. <i>rigida</i>                               | Gentry   | 09/12/82 | Conrad 9879              | NEMO    |
| 2168    | <i>gymnospermoides</i>                                                | Schuyler | 09/19/87 | Conrad & Millett 11386   | NEMO    |
|         | <i>gymnospermoides</i>                                                | Sullivan | 09/23/82 | Conrad & Anderson 10033  | NEMO    |
| 2178    | <i>Aster azureus</i><br>v. & f. <i>azureus</i>                        | Schuyler | 09/19/87 | Conrad & Anderson 10033  | NEMO    |
| 2178.1  | <i>Aster azureus</i><br>v. <i>azureus</i><br>f. <i>laevicaulis</i>    | Adair    | 09/27/87 | Conrad 11464             | NEMO    |
| 2181    | <i>Aster drummondii</i>                                               | Sullivan | 09/12/87 | Conrad & Gronefeld 11335 | NEMO    |
| 2184    | <i>Aster novae-angliae</i><br>f. <i>novae-angliae</i>                 | Schuyler | 09/19/87 | Conrad & Millett 11463   | NEMO    |
| 2188    | <i>Aster turbinellus</i>                                              | Schuyler | 10/05/87 | Millett 27               | NEMO    |
| 2189    | <i>Aster pilosus</i> v. & f. <i>pilosus</i>                           | Harrison | 09/12/82 | Conrad 9903              | NEMO    |
| 2189.99 | <i>Aster pilosus</i>                                                  | Howard   | 09/29/82 | Royall 40                | UMO     |
| 2198.1  | <i>Aster praealtus</i><br>v. <i>angustior</i>                         | Sullivan | 09/23/82 | Conrad & Anderson 10009  | NEMO    |
| 2206    | <i>Erigeron philadelphicus</i><br>f. <i>philadelphicus</i>            | Crawford | 05/20/88 | Conrad & Callaci 11693   | REIS    |
| 2207    | <i>Erigeron annuus</i> f. <i>annuus</i>                               | Lewis    | 07/01/87 | Conrad 11095             | NEMO    |
| 2208.2  | <i>Erigeron strigosus</i><br>v. <i>beyrichii</i>                      | Schuyler | 06/08/87 | Conrad 10981             | NEMO    |
| 2208.99 | <i>Erigeron strigosus</i>                                             | Clark    | 07/01/87 | Conrad 11107             | NEMO    |
| 2225.1  | <i>Ambrosia artemisiifolia</i><br>v. <i>elatior</i> f. <i>villosa</i> | Schuyler | 09/19/87 | Conrad & Millett 11395   | NEMO    |
|         | v. <i>elatior</i> f. <i>villosa</i>                                   | Sullivan | 09/11/88 | Gleason 356              | NEMO    |
| 2243.99 | <i>Silphium laciniatum</i>                                            | Douglas  | 07/02/87 | Morris 1816              | UMO/IPM |
| 2265    | <i>Ratibida pinnata</i>                                               | Howard   | 07/07/85 | Royall 173               | YUMO    |
| 2282    | <i>Helianthus decapetalus</i>                                         | Iron     | 05/23/88 | Conrad 11715             | NEMO    |
| 2283.1  | <i>Helianthus tuberosus</i><br>v. <i>subcanescens</i>                 | Schuyler | 09/19/87 | Conrad & Millett 11357   | NEMO    |

|         |                                                         |            |          |                           |         |
|---------|---------------------------------------------------------|------------|----------|---------------------------|---------|
| 2286    | <i>Verbesina helianthoides</i>                          | Lincoln    | 06/24/84 | Schuette 583              | DNR     |
| 2291.99 | <i>Coreopsis tinctoria</i>                              | Scott      | 05/12/83 | Dierker 1040              | UMO/IPM |
| 2292.99 | <i>Coreopsis grandiflora</i>                            | Johnson    | 06/14/83 | Delozier 1157             | NEMO    |
| 2296.1  | <i>Coreopsis tripteris</i><br>v. <i>deamii</i>          | Schuyler   | 09/19/87 | Conrad &<br>Millett 11446 | NEMO    |
| 2298.99 | <i>Bidens cernua</i>                                    | Howard     | 09/23/84 | Royall 139                | UMO     |
| 2302.99 | <i>Bidens frondosa</i>                                  | Howard     | 09/13/83 | Royall 149                | UMO     |
| 2304.2  | <i>Bidens aristosa</i> v. <i>mutica</i>                 | Schuyler   | 09/19/87 | Conrad &<br>Millett 11399 | NEMO    |
| 2304.99 | <i>Bidens aristosa</i>                                  | Howard     | 09/09/83 | Royall 91                 | UMO     |
| 2312    | <i>Galinsoga ciliata</i>                                | Cape       |          |                           |         |
|         |                                                         | Girardeau  | 07/24/85 | Dierker 1545              | UMO/IPM |
| 2312    | <i>Galinsoga ciliata</i>                                | Dent       | 09/20/85 | Pickle 1611               | UMO/IPM |
| 2326    | <i>Anthemis cotula</i>                                  | Buchanan   | 07/26/84 | Dierker 1278              | UMO/IPM |
| 2328.99 | <i>Matricaria chamomilla</i>                            | Scott      | 05/12/83 | Dierker 1038              | UMO/IPM |
| 2329    | <i>Matricaria matricarioides</i>                        | Audrain    | 06/06/84 | Dierker 1336              | UMO/IPM |
| 2329    | <i>Matricaria matricarioides</i>                        | Cole       | 06/09/84 | Raveill 2050              | MO      |
| 2329    | <i>Matricaria matricarioides</i>                        | Crawford   | 05/23/88 | Conrad 11749              | NEMO    |
| 2329    | <i>Matricaria matricarioides</i>                        | Lincoln    | 06/29/83 | Schuette 141              | DNR     |
| 2329    | <i>Matricaria matricarioides</i>                        | New Madrid | 05/12/83 | Dierker 1039              | UMO/IPM |
|         | <i>Chrysanthemum</i><br><i>leucanthemum</i>             |            |          |                           |         |
| 2330.1  | v. & f. <i>pinnatifidum</i>                             | Sullivan   | 08/28/88 | Gleason 325               | NEMO    |
| 2330.99 | <i>leucanthemum</i>                                     | Howard     | 06/13/85 | Royall 159                | UMO     |
|         | <i>leucanthemum</i>                                     | Lincoln    | 05/30/83 | Schuette 90               | DNR     |
| 2337    | <i>Artemisia annua</i>                                  | Miller     | 07/09/88 | George 1839               | UMO/IPM |
| 2338.99 | <i>Artemisia vulgaris</i>                               | Boone      | 09/06/84 | Dierker 170651            | UMO/IPM |
| 2341.99 | <i>Erechtites hieracifolia</i><br><i>Senecio aureus</i> | Audrain    | 09/14/87 | Schnarre 1828             | UMO/IPM |
| 2350.1  | v. <i>intercurus</i>                                    | Iron       | 05/23/88 | Conrad 11720              | NEMO    |
| 2350.2  | v. <i>gracilis</i>                                      | Adair      | 05/20/81 | Walker 105                | NEMO    |
|         | v. <i>gracilis</i>                                      | Iron       | 05/23/88 | Conrad 11717              | NEMO    |
| 2358    | <i>Cirsium discolor</i><br>f. <i>discolor</i>           | Schuyler   | 08/22/86 | Conrad 10765              | NEMO    |
|         | f. <i>discolor</i>                                      | Sullivan   | 08/26/88 | Gleason 299               | NEMO    |
| 2358.99 | <i>Cirsium discolor</i>                                 | Gentry     | 09/12/82 | Conrad 9892               | NEMO    |
| 2362.99 | <i>Cirsium arvense</i>                                  | Buchanan   | 08/12/83 | Jarman 1180               | UMO/IPM |
| 2362.99 | <i>Cirsium arvense</i>                                  | Callaway   | 06/12/85 | Bellinghausen<br>1470     | UMO/IPM |
| 2362.99 | <i>Cirsium arvense</i>                                  | Cedar      | 10/04/83 | Hubbard 1198              | UMO/IPM |
| 2362.99 | <i>Cirsium arvense</i>                                  | Marion     | 05/20/85 | Dierker 1380              | UMO/IPM |

|         |                                                                                  |                      |                      |                             |              |
|---------|----------------------------------------------------------------------------------|----------------------|----------------------|-----------------------------|--------------|
| 2362.99 | <i>Cirsium arvense</i>                                                           | Nodaway              | 06/26/86             | Wynn 1657                   | UMO/IPM      |
| 2370    | <i>Centaurea maculosa</i>                                                        | Lawrence             | 06/04/85             | Hubbard 1516                | UMO/IPM      |
| 2370    | <i>Centaurea maculosa</i>                                                        | Pike                 | 06/30/85             | Dierker 1491                | UMO/IPM      |
| 2376    | <i>Krigia virginica</i>                                                          | Pemiscot             | 05/06/83             | Dierker 1025                | UMO/IPM      |
| 2382    | <i>Tragopogon dubius</i>                                                         | Clark                | 07/01/87             | Conrad 11114                | NEMO         |
| 2382    | <i>Tragopogon dubius</i>                                                         | Saline               | 05/31/83             | Dierker 1087                | UMO/IPM      |
| 2383    | <i>Tragopogon pratensis</i>                                                      | Cole                 | 07/09/85             | Smedley 1722                | UMO/IPM      |
| 2385    | <i>Taraxacum officinale</i>                                                      | Knox                 | 04/17/88             | Gleason 10                  | NEMO         |
|         | <i>Taraxacum officinale</i>                                                      | Schuyler             | 04/25/87             | Conrad 10920                | NEMO         |
|         | <i>Taraxacum officinale</i>                                                      | Sullivan             | 09/12/87             | Conrad & Gronefeld 11287    | NEMO         |
| 2387    | <i>Sonchus oleraceus</i>                                                         | Howard               | 09/07/85             | Royall 200                  | UMO          |
| 2388.99 | <i>Sonchus asper</i>                                                             | Cole                 | 06/09/84             | Raveill 2036                | MO           |
| 2388.99 | <i>Sonchus asper</i>                                                             | Harrison             | 06/24/86             | Killpack 1845               | UMO/IPM      |
| 2388.99 | <i>Sonchus asper</i>                                                             | Lawrence             | 07/09/86             | Dierker 1568                | UMO/IPM      |
| 2388.99 | <i>Sonchus asper</i>                                                             | Livingstone          | 07/01/86             | McVickers 1658              | UMO/IPM      |
| 2391.4  | <i>Lactuca canadensis</i><br>v. & f. <i>longifolia</i>                           | Gentry               | 09/12/82             | Conrad 9888                 | NEMO         |
| 2395    | <i>Lactuca floridana</i><br>v. & f. <i>floridana</i><br>v. & f. <i>floridana</i> | Randolph<br>Schuyler | 08/03/79<br>08/22/86 | Conrad 8370<br>Conrad 10787 | NEMO<br>NEMO |
| 2371.09 | <i>Centaurea diffusa</i>                                                         | Howard               | 06/24/86             | Slater 1667                 | UMO/IPM      |