

No last page?

# MISSOURIENSIS

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## **MINUTES OF MARCH MEETING**

March 7, 1981, Columbia, Mo.

At 10:05 A.M., Melvin Conrad, Vice President, called the meeting to order. Board members present were: Melvin Conrad, Erna Eisendrath, Diana James, Ginny Klomps, Robert Mohlenbrock, Wallace Weber and Jim Henry Wilson. Karen Haller was appointed acting secretary, as Paul Nelson had duties with the Ozark Wilderness Conference, as did John Karel. Both arrived later.

Minutes of the December 6, 1980 board meeting were approved as published in "Missouriensis". Jim H. Wilson's treasury report of \$2,757.91 met favorable approval, as did mention of a growing membership.

### OLD BUSINESS

Display Board. Erna Eisendrath submitted two proposals for the hand-out publication. Discussion concerning inclusion of officers' names resulted in the decision to include them, along with the address of the current treasurer. Information concerning the purposes of the organization, its membership, and activities, was accepted as presented on the second proposal. Suggestions included: use of the new logo on the hand-outs, the help of the Missouri Dept. of Conservation in the printing, and the aid of Paul Nelson's artistic talents where suitable.

Ginny Klomps presently has possession of the board. It will be seen in March and April in Hannibal, Centralia, Springfield, St. Joseph, and Kansas City at meetings of various garden clubs, the Missouri Academy of Science and the Nature Conservancy.

John Wylie suggested rotating possession of the board, during the slack season, to assorted college campuses throughout the state.

Nominating Committee Report.\* Wallace R. Weber, Chairman of the Nominating Committee, submitted the following slate of officers:

President - Paul L. Redfearn  
Vice-President - Melvin Conrad  
Secretary - Karen Haller  
Treasurer - Rick Daley  
1st board vacancy - Leo Galloway or Otto Ohmart (vote for one)  
2nd board vacancy - Norland Henderson or Diana James (vote for one)

Committee Chairmen to be approved by the Board of Directors:

Field Trip Committee - Ginny Klomps  
Membership Committee - Jim H. Wilson  
Environmental Action Committee - Bill Dierker  
Inventory Committee - Paul Nelson

The immediate approval of the committee chairmen was given and Bill Dierker took his seat with the Board.

According to the Bylaws, the "Nominating Committee shall report to the President the names of the nominees selected by the Committee. The names of the Nominating Committee, a list of the offices to be filled and the names of the nominees are to be printed in The Newsletter, or reported to the membership by mail."

The Bylaws also allow for "members . . . (to) suggest nominations to the Nominating Committee. The name and qualification of any paid member submitted for a particular office by a group of five paid members, must be included on the ballot if in the hands of the Nominating Committee before the close of nominations. A ballot including the nominations shall be printed and mailed to all paid members with instructions for its return within a reasonable and specified time."

Therefore, the Nominating Committee requests that all nominations submitted by members be sent to the chairman of the committee by April 30th. A ballot will then be sent to all members by May 10th, and must be returned by May 30th.

A discussion held in regard to the Vice-President's office resulted in approval by the Board that, as a guideline for future elections, the Vice-President be considered as an automatic nominee as President for the next election.

#### NEW BUSINESS

Annual Meeting. Ginny Klomps submitted a detailed proposal agenda for the June Annual Meeting. After much discussion, it was approved by the board that Ginny coordinate a program to be held in Rolla, June 13, with Dr. Nord Gale as host. Emphasis will be on interesting programs and/or field trips for the membership, with the business of the Board primarily taking place during a special luncheon.

It was suggested that an agenda be published prior to each board meeting. It was further suggested that one person be responsible for the organization of the total meeting. The President will remain responsible for the business agenda. Steve Timme volunteered to coordinate the programs of future meetings.

MoNPS Logo. John Karel distributed stationery showing both a suggested new logo and letter-head, designed by Mr. James of Kansas City, and selected by Karel and Gary Reese, empowered at the last Board meeting to proceed with this project. Discussion of size to be used, quality and color of stationery, the possibility of rubber-stamping the logo on post cards, its adaptation to the heading of "missouriensis" followed; a motion by Ginny Klomps to leave such decisions in the hands of Karel and Reese was seconded and passed, as was, by unanimous vote, a move to thank Mr. James, in particular, as well as Karel and Reese, for their efforts.

Organization of Local Chapters. Ginny Klomps introduced the subject of local involvement by chapters in various regions of the state. Activities needed to pursue this objective included investigation of structure for local chapters, development of guidelines including amendment of Bylaws, and individual research. During the discussion of this subject, Jim H. Wilson volunteered to write a proposal as it was addressed in the first draft Bylaws. It was moved to accept development of a proposal with Jim H. Wilson chairing an ad-hoc committee within the Membership Committee.

Special Presentation by Sherry Morgan- Missouri Plants of Federal Concern. Upon adjournment of the Board meeting shortly before noon, Sherry Morgan of the Department of Conservation gave a slide presentation. The presentation and talk was about her study of rare and endangered species found in Missouri and proposed for federal listing. This included a review of literature, records, herbaria, and follow-up field work for some 26 plant species or varieties. Morgan will be completing a report in March as part of a Fish and Wildlife Service grant awarded to the Department of Conservation. Sherry passed out distribution maps and a summary list of plants proposed for listing. Her talk concentrated on habitat descriptions, present status reports, and protection strategies for many of the 26 plants.

Herbarium Tour. Following lunch, those present at the meeting were invited to tour the Herbarium of the University of Missouri in Columbia under the guidance of Dr. Dunn. This herbarium is the largest of any university in the state and contains numerous collections from such botanists as Julian Steyermark, E.J. Palmer, Guy Gastineau, Clair Kucera, Francis Douet, and Howard Rickett.

Karen S. Haller, Secretary pro-tem

## **NOMINATING COMMITTEE REPORT**

During its nearly two years of existence, the composition of the Board of Directors of MoNPS has from time to time been criticized. There appears to have been some concern that too many members were from a single geographical area, while other areas were underrepresented; or that one of the state agencies had more influence on the board than the other; or that the layman was not well represented. It seems to us the overriding consideration should be the qualifications of the persons involved and their interest in serving the purposes of MoNPS as an organization; however, the nominating committee tried to be mindful of past criticisms and to strike as much of a balance as possible in working out a slate of officers and Board candidates.

If one looks at this problem from the standpoint of equal numbers from all areas of concern, there will always be "inequities". Let us elaborate. First, professionals will probably always outnumber non-professionals. It is simply a matter of reality that those interested persons associated with universities and



Silverbell and Melanthera nivea have a Tennessee River and Ohio River valley distribution pattern in Illinois and Kentucky. You will have to refer to the southeastern manuals for a description of the composite Melanthera which is not in current northeastern floras. Both species occur more or less continuously along the Tennessee and Ohio Rivers from Kentucky Dam downstream to Olmsted, Illinois wherever ravine habitats and river banks extend above the normal flood levels of these rivers. The habitat can be either quaternary terrace deposits or tertiary materials. Both plants normally occur in forest, but I have seen Melanthera in woods edge to field habitats.

These plants represent a continuous population apparently dispersed by water transport of seed. The mode of seed transport has restricted their range somewhat, but should have provided the opportunity for establishing the plants along the Mississippi River in Missouri below the mouth of the Ohio. The Olmsted populations are 14 air miles from Missouri and 17 river miles above the mouth of the Ohio.

Not being familiar with the geology of southeast Missouri lowlands, I can not predict whether suitable habitat actually exists. Levees may provide habitat for the Melanthera but probably not for Silverbell. The Illinois Silverbell populations seem at least somewhat relictual. Although seed production is abundant, I have not noticed seed reproduction in any of our stands. Some is probably occurring. Most of our plants are obviously the result of sprouting from old root crowns. Under our habitat conditions, Halesia reaches a maximum of 11" in diameter with most vigorous healthy trees in the 7" class. They are conspicuous in the woods because of the almost black appearance of the smooth bark of the smaller sprouts. The larger trunks develop lighter longitudinal strips as the bark starts to split. Flowering time coincides with that of Flowering Dogwood (Cornus florida) and even sprouts an inch in diameter may bear flowers.

Another species of the Styracaceae, Big Leaf Snowbell Bush (Styrax grandifolia), grows in Illinois just 6 miles east of the Mississippi River. It occurs in a range of hills that extend westward into Missouri. These hills were cut off from Illinois when the Mississippi River was diverted through a bedrock gorge at Thebes south of Cape Girardeau, in recent geological time. If natural ravine vegetation survives in these Missouri hills there just may be some Big Leaf Snowbell Bush present. It would seem to be a possibility for any upland site adjacent to the Mississippi embayment lowlands.

This shrub has not flowered at its Illinois locality in recent years. If encountered, identification of this species will probably have to be on the basis of vegetative characters. It is colonial, reaching a height of about 7 feet. It has the same tight smooth bark and wiry stems characteristic of Styrax americana, but they are dark gray to nearly black in color. The leaves are ovate, scarcely toothed and densely stellate beneath. An associate of it at its Illinois locality is Yellow Wood (Cladrastis lutea). Its Illinois habitat is a ravine bottom at the edge of an intermittent stream.

I hope that this information may help lead to the discovery of new plants or new localities for plants in Missouri.

# BOREAL RELICS BORDER OZARK GLADE

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On a recent midsummer (July 1) canoe trip on the Jack's Fork River in Shannon County, a faint patch of pale blue high on a shady bluff attracted our attention -- Harebells (Campanula rotundifolia)! We had seen them in the Rockies, but never in Missouri. Upon paddling to the base of the bluff, we found the Harebells blooming in abundance. Another boreal relic, White Camas (Zigadenus elegans), was also in bloom, although beginning to fade.

The Jam Up Cave 7-1/2 min. topographic map revealed that this bluff (Bear Hole) at the mouth of Bear Hollow (NW-1/4, Sec. 4, T27N, R6W) was on a narrow backbone-type interfluvium. As we walked up this narrow ridge from the mouth of Bear Hollow we found the south-facing side was a glade. False Aloe (Agave virginica), Rattlesnake Master (Eryngium yuccifolium), Prairie Dock (Silphium terebinthinaceum), American Feverfew (Parthenium integrifolium), Flowering Spurge (Euphorbia corollata), Pale-purple Coneflower (Echinacea pallida), and prairie grasses such as Little Bluestem (Andropogon scoparius), and Sideoats Grama (Bouteloua curtipendula) grew right to the edge of the north-facing bluff, where another relic, American Barberry (Berberis canadensis), was found. Along with it was White Harebells, possibly Campanula rotundifolia var. rotundifolia form albiflora Rand and Redf. mentioned by Steyermark (1963) as "... not known as yet in Missouri".

The juxtaposition of Missouri's rare boreal relics (Roedner *et al.* 1978) with the glade xerophytes was startling. All along the edge of the bluff, plants of the glades and the boreal forest grew side by side. Few places in Missouri contain such a botanical contrast.

Another boreal relic, Northern Bedstraw (Galium boreale), was identified on a subsequent (August 11) visit to the area. Other plants of interest were Little Ebony Spleenwort (Asplenium resiliens), and Blue Cohosh (Caulophyllum thalictroides) which grew in the rich woods at the base of the bluff.

The nearby river (with its associated species such as Spatterdock (Nuphar luteum), the bottomland, the bluff, the glade, and the surrounding oak-pine forest provide an interesting and very scenic botanical area. Although a few cedars were evidently removed from the glade many years ago, Bear Hole Bluff may be a candidate for the State Natural Areas system. This bluff is similar to Jam Up Bluff (SE-1/4, Sec. 4, T27N, R6W) except that the glade component of Bear Hole Bluff is believed to be more extensive. Jam Up Bluff is mentioned by Steyermark (1963) several times. To our knowledge he mentioned Bear Hole Bluff only once -- in connection with American Barberry (Steyermark 1963). Jam Up Cave (including Jam Up Bluff) has been designated a State Natural Area by the Department of Natural Resources and the National Park Service.

## LITERATURE CITED

- Roedner, B. J., D. A. Hamilton, and K. E. Evans.  
1978. Rare Plants of the Ozark Plateau ... a field identification guide.  
238 p. U. S. Department of Agriculture, Forest Service, North Central  
Forest Experiment Station, St. Paul, MN.
- Steyermark, J. A.  
1963. Flora of Missouri. 1,725 p. Iowa State University Press, Ames. IA.



# MISSOURI PLANTS IN PRINT

New Literature Relating to Missouri Vascular Plants

by

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- BARKLEY, T.M. 1980. Taxonomic Notes on Senecio tomentosus and its Allies (Asteraceae). Brittonia 32:291-308. Senecio tomentosus is dotted for southwestern Missouri.
- BROOKS, R.E. 1980. Phyllanthus polygonoides (Euphorbiaceae) New to Arkansas. Sida 8:315. Reference is made to the occurrence of P. polygonoides from Stone County, Missouri.
- CANNE, J.M. 1979. A Light and Scanning Electron Microscope Study of Seed Morphology in Agalinis (Scrophulariaceae) and its Taxonomic Significance. Systematic Botany 4:281-296. Seed source for this study includes Missouri collections of A. gattingeri and A. viridis.
- COFFEY, V.J. & S.B. JONES, JR. 1980. Biosystematics of Lysimachia Section Seleucia (Primulaceae). Brittonia 32:309-322. Lysimachia ciliata is shown on the distribution map for Missouri, as are L. hybrida, L. radicans, L. lanceolata, and L. quadriflora.
- FRASER-JENKINS, C.R. 1980. Nomenclatural Notes on Dryopteris. 4. Taxon 29:607-612. States case for Dryopteris carthusiana as the correct binomial for D. spinulosa.
- FRYXELL, P.A. 1979. Sidus Sidarum - III. Sida rzedowskii sp. nov., including a preliminary discussion of the Sida elliotii species group. Sida 8:123-127. Stated range of Sida elliotii mentions southernmost Missouri.
- HAYNES, R.R. 1979. Revision of North and Central American Najas (Najadaceae). Sida 8:34-56. The following taxa are attributed to Missouri: N. flexilis, N. guadalupensis, and N. gracillima.
- IRVING, R.S. 1980. The systematics of Hedeoma (Labiatae). Sida 8:218-295. The distribution maps of H. hispida and H. pulegioides include Missouri.
- JONES, A.G. 1979. A Study of Wild Leek, and the Recognition of Allium burdickii (Liliaceae). Systematic Botany 4:29-43. Allium tricoccum and A. burdickii are both mapped for Missouri, although the final statement in the article says "In Missouri, plants of A. burdickii are rare or of doubtful occurrence."
- JONES, A.G. 1980. Data on Chromosome Numbers in Aster (Asteraceae), with comments on the Status and Relationships of Certain North American Species. Brittonia 32:240-261. Aster urophyllus Lindl. in DC. is recorded for Jefferson County, south of Festus. The type was collected by Drummond from the vicinity of St. Louis. It is a white-rayed heterophyllous plant on slopes and wooded edges and is diploid. Aster turbinellus is said to extend to western Missouri.

JONES, A.G. & P. SHILDNECK. 1980. A Note on the Distribution of Wild Leek in Illinois. Transactions of the Illinois Academy of Science 72:60-63. Statement is made that Allium burdickii is "of rare or doubtful occurrence in the Ozarkian region of southern Illinois and adjacent Missouri."

KOELLER, G.L. 1980. Itea: Summer Flowers and Autumn Color. Arnoldia 40:23-29. Missouri is given in the range of Itea virginica.

LANE, M.A. 1979. Taxonomy of the Genus Amphiachyris (Asteraceae: Astereae). Systematic Botany 4:178-189. Gutierrezia dracunculoides is placed in Amphiachyris as A. dracunculoides and recorded from Missouri.

McNEILL, J. 1980. The Delimitation of Arenaria (Caryophyllaceae) and Related Genera in North America, with 11 New Combinations in Minuartia, Rhodora 82:495-502. Although Missouri is not specifically cited in the article, species which occur in Missouri are involved in the proposed nomenclatural changes.

MULLIGAN, G.A. 1980. The genus Cicuta in North America. Canadian Journal of Botany 58:1755-1767. Distribution maps show Missouri in the range of C. maculata var. maculata, C. maculata var. bolanderi, and C. bulbifera.

OLSEN, J. 1979. Taxonomy of the Verbesina virginica Complex (Asteraceae). Sida 8:128-134. Distribution map shows V. virginica var. virginica covering the southern two-thirds of Missouri.

PIREH, W. & R.J. TYRL. 1980. Cyto geography of Achillea millefolium in Oklahoma and Adjacent States. Rhodora 82:361-367. Distribution map indicates several tetraploid populations in Missouri.

RAVEN, P.H., W. DIETRICH, & W. STUBBE. 1979. An Outline of the Systematics of Oenothera subsect. Euoenothera (Onagraceae). Systematic Botany 4:242-252. In the table depicting the taxonomic treatment of the subsection, plants known from Missouri (but not specifically mentioned for Missouri) are O. biennis and O. villosa Thunb. (= O. strigosa).

REZNICEK, A.A. 1980. Halophytes along a Michigan Roadside with Comments on the Occurrence of Halophytes in Michigan. Michigan Botanist 19:23-30. Distribution map of Muhlenbergia asperifolia shows two dots in western Missouri.

ROGERS, K. 1979. Neviusia alabamensis (Rosaceae) in Mississippi. Sida 8:215-216. Reference is made to this species in Butler County, Missouri.

SEMPLE, J.C. & L. BROUILLET. 1980. A Synopsis of North American Asters: The Subgenera, Sections and Subsections of Aster and Lasallea. American Journal of Botany 67:1010-1026. Eleven species traditionally placed in Aster have been transferred to Lasallea. Some of these occur in Missouri.

SEMPLE, J.C. & L. BROUILLET. 1980. Chromosome Numbers and Satellite Chromosome Morphology in Aster and Lasallea. American Journal of Botany 67:1027-1039. Some of the specimens used for chromosome counts are from Missouri.

SETTLE, W.J. 1980. First Report of Specularia biflora (R. & P.) Fisch. & Mey. in New York State. Rhodora 82:521-522. Reference is made to Missouri in the stated range of S. biflora.

STUCKEY, R.L. 1980. The Migration and Establishment of Juncus gerardii (Juncaceae) in the Interior of North America. Sida 8:334-347. Specimens of J. gerardii are cited from St. Louis County.



THOMPSON, R.L. 1979. Vascular Flora of Cedar Gap Lake and Environs, Webster and Wright Counties, Missouri. Sida 8:71-89. A list of 504 taxa of vascular plants is recorded from Cedar Gap Lake, including several county records.

THOMPSON, R.L. 1980. Woody Vegetation and Floristic Affinities of Mingo Wilderness Area, a Northern Terminus of Southern Floodplain Forest, Missouri. Castanea 45:194:212. Description of habitats of Mingo Wilderness Area (Wayne and Stoddard Counties) is given, followed by a list of 128 trees, shrubs, and woody vines.

THOMSON, P.M. & R.H. MOHLENBROCK. 1979. Foliar Trichomes of Quercus Subgenus Quercus in the Eastern United States. Journal of the Arnold Arboretum 60:350-366. A collection from western Missouri is mentioned which is suspected of being a hybrid between Q. stellata and Q. macrocarpa (= Q. X guadalupensis Sarg.).

UMBER R.E. 1979. The Genus Glandularia (Verbenaceae) in North America. Systematic Botany 4:72-102. A single dot is recorded in northwestern Missouri for Glandularia bipinnatifida (Nutt.) Nutt. (= Verbena bipinnatifida), and statewide distribution is recorded for Glandularia canadensis (L.) Nutt. (= V. canadensis).

WARNOCK, M.J. 1980. Native Illinois Delphinium. Transactions of the Illinois Academy of Science 72:60-63. Statement is made that D. carolinianum is found on the Missouri side of the (Mississippi) River.

ZANONI, T.A. 1980. Otto Kuntze, Botanist. I. Biography, Bibliography and Travels. Brittonia 32:551-571. Mention is made of Otto Kuntze in the vicinity of St. Louis, Sikeston, Marley (sic), and New Madrid during August and September, 1874, and again in St. Louis for several weeks during 1904.

## **RESPONSES TO REDFEARN**

This note is a commentary on Prof. Paul Redfearn's recent remarks about collecting voucher specimens of plants for deposit in a recognized herbarium. His main argument is that such specimens validate the presence of a species. Were the remarks made by someone who neither is concerned with conservation nor has advanced reasonable limitations to such collecting, I would dismiss the article out-of-hand. Because of the positive qualities both of the author and of the valid issues which he presents, I would like to provide some additional dialogue.

Most persons, both amateur and professional, interested in holistic biology realize the value of permanent reference collections deposited in public and private institutions. MoNPS would not even be a gleam in someone's eye had not the Flora of Missouri, based on such collections, ever appeared. I would argue, however, that under certain extreme conditions, collecting and depositing specimens can have a potentially disastrous effect. One arena of danger includes those species or populations which are unique in some way. Rarity is one example. Being rare is relative. Species X may be abundant in the southwestern deserts, but populations of it may be relictual here in Missouri. Rarity invokes a sense of importance which only too readily stimulates a proprietary attitude on the part of some people. This desire to physically possess a unique item can generate an economic value for that item. People will pay for it! And they'll pay well.

This possibility is not as far-fetched as it might seem. Cacti offer one example. They are of pleasant contrast to many plants of home and office, and the supposition that they need "little care" has generated such a demand that the plants are being pirated from both the private and public lands of our southwest. As such collecting decreases the abundance of particularly desirable species, their economic value increases. On another vein, certain micro-habitats, such as the hibernation dens of snakes, attract both amateur and professionals who are interested in exploring snakes for economic, scientific or psychologically destructive reasons. One only has to visit local pet stores in St. Louis to see the high price placed on common snakes.

Clever exploiters can use vouchers as an indication of the location of unique specimens or of other species associated with them. Indeed, Missouriensis itself acts as a voucher since one role of this journal is to identify unique populations and localities. I believe that there is a limit to Prof Redfearn's policy. Indeed, he has offered a partial solution to the problem by his rule 6 in which he states, "In particularly sensitive areas, the exact locality could be omitted from the labels, and available only from the responsible agency". Even so, I believe that a definitive policy should be established on advertising such situations because of the loss of control after an investigator has been given access to the information. I know that some professional journals require publishing source data which could lead to the demise of an interesting population of plants or animals by some unscrupulous persons. Perhaps journals, as well as herbaria, should re-assess the role of voucher specimens in unique cases.

With personal apologies to a friend.

The Dude

\*\*\*\*\*

I enjoyed Paul Redfearn's article on collecting and Herbariums. I am in basic agreement with Paul and I do appreciate the value of specimens. However, there is one point I would like to add to Paul's list of rules for collection on public lands, (or for that matter anywhere). In fact I think this rule should be at the top of the list. The rule: Make sure you will not jeopardize the survival of the species at that site by collecting. Put simply, "Don't collect the last one."

Abuse of this rule has caused many public land managers to be "overly protective." Unfortunately too many of us (including students and their professors) place a high value on the rare species. And if we find one of a kind in an unusual location there is a strong temptation to pluck it. (It always dismayed me that seven of the last fourteen passenger pigeons reported in the wild were shot by a museum collector.)

I would rather that science suffer the loss by not having the species in a collection, than nature (and man) suffer the loss of having the living organism.

By the way, this applies to the collection of both plants and animals.

Our Department's policy on granting collection permits is that we freely give permits to collect two specimens of common species. One collection of listed rare or endangered species can be made if an on-site examination reveals that there is a sufficient population to insure survival. We always require ultimate deposition in a public herbarium or collection.

There is increasing evidence that there are minimum numbers required in populations to insure reproduction. Two plants just won't do it. Pollinators have to be attracted and ripe pollen exchanged.

I realize I am not telling Paul anything new but I do think that students and perhaps some MONPS members should be reminded of this important facet of responsible collecting.

Sincerely,

John E. Kylie  
Natural History Officer

Missouri Department Of Conservation

## **A COUNTY RECORD AND SOME UNUSUAL PLANTS**

Ginny Klomps, Botanist  
Missouri Department of Conservation  
Jefferson City

An afternoon fieldtrip on one of those warm September days last fall proved to be very fruitfull. Dr. Norlan Henderson, Joe Werner and I set forth in search of *Spiranthes ovalis*, the rare species of Ladies' Tresses Orchid. Joe had seen the species the year before on loess hills in Buchanan county. We were going back to find these plants and verify their identity, because this would be a county record for the species. Our search was successful; we found six plants and they were indeed *S. ovalis*. Joe reported seeing many more plants the year before. No doubt the drought was taking its toll.

Pleased with our success we headed back toward Kansas City. Our route took us near Platte City and Dr. Henderson suggested we take a short detour to Basswood Lakes, about 3½ miles east of there. Here, he told us, we would find two unusual plants not seen elsewhere in the state. First he showed us Water Clover, *Marsilea quadrifolia*. These are aquatic plants rooted in the mud with clover-like leaves. Anyone who has taken a course in general botany or plant morphology is probably familiar with this plant which is an example of a "leptosporangiate" fern. This species was first collected in Missouri in 1953 at Basswood Lakes by L. J. Gier. This remains the only location in the state for this species which is a native of Europe.

The second unusual plant Dr. Henderson showed us was Sacred Lotus, *Nelumbo nucifera*. This pink-flowered lotus is native to Asia and Australia where its seeds and rootstocks were used for food much like our native species *N. lutea* was used by American Indians. The species was introduced into Missouri and is reported only from Basswood Lakes in Platt County and Iron Mountain Lake in Iron County (Steyermark, 1953). Interestingly, this species is reported to hold the record for seed longevity (Cronquist, 1971). Seeds collected in 1703 were taken from herbarium specimens and successfully germinated in 1940. Viable seeds found in a peat deposit in Manchuria were radiocarbon-dated at 1000 years old, and fragments of wood associated with viable seeds found 20 feet underground in Japan were radiocarbon-dated at 3000 years!

### Literature Cited

- Cronquist, Arthur. 1971. Introductory Botany. Harper & Row, New York. 885 pp.
- Steyermark, J. A. 1963. Flora of Missouri. Iowa State University, Ames. 1728 pp.

# THE MYSTERIOUS LEGACY

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Back in 1978, Michael Sonnenmoser found a pretty little flower. He photographed it.

Nothing unusual in that--except that the flower was a small white ladyslipper orchid, rare anywhere and, until then, thought to be extinct in Missouri.

The Conservation Department's Natural History Section is excited by Sonnenmoser's discovery.

But also baffled.

No one knows where the photo was taken.

And they can't ask Sonnenmoser.

The young amateur botanist was involved in a freak auto accident in November 1979, which killed his wife, Donna, and injured him so severely that he died after spending nearly a year in a coma.

The accident happened as the Sonnenmosers were going home to Rushville from Schell-Osage Wildlife Area where Sonnenmoser was working at the time.

A boat trailer came loose from an approaching car on Highway 59 and hit the Sonnenmoser car--an accident far less likely than being struck by lightning.

The wreck ended a promising career as a botanist for the youngster, only 28. Flowers were more than his interest--they were his passion.

"I have studied nature in all facets and forms since I was old enough to walk," Sonnenmoser wrote in his job application with the Department. "I have a special love for nature that I find hard to put into words."

Sonnenmoser had told his brother, Mark, that the ladyslipper photo was taken along the Nodaway River, but no one knows just where and Sonnenmoser's records hold no really good clues.

The slides were dated June, 1978, and probably were taken in May. Apparently, Sonnenmoser had set out to find the ladyslipper and stayed with the search for nearly two years before he located it.

"I enjoy finding something that is rare or endangered," Sonnenmoser wrote. "I have found several rare plants, and seemingly uncommon insects, plus spotting rare birds found in the state.

"I've just recently found a small tract of timber in the Missouri River bottoms in Buchanan County. This may not seem unusual at first, but when I tell you that it is oak-hackberry timber and that it is mature timber, that is a different story."

Certainly to Sonnenmoser and knowledgeable conservationists--but not to most: "When I was a boy there was quite a few tracts of timber," he wrote. "But it has been cleared over the last 25 years. I can still remember those old and gnarled oak trees that stood here and there in the bottoms. If only they could have talked."

What would they have said to the young enthusiast, wandering the river bottoms, looking for fragile flowers unknown, not just to the average person, but even to experts?

In August, 1979, Sonnenmoser got the entree to Missouri's outdoor program that he had wanted. He was hired by the Conservation Department.

In all the paperwork of the job application, there is one form called a driver's record and one of the questions was whether the applicant had any accidents in the previous three years.

"Just a fender bender," Sonnenmoser replied. "The other person got the ticket. That is the only real accident in all my years of driving."

A month later his world came to an end. . .

## ***SPREADING THE WORD***

Gordon T. Maupin  
Missouri Department of Conservation  
P. O. Box 180  
Jefferson City, Missouri 65102

Two years running, the most popular adult education class at Jefferson City's Nichols Career Center has been Missouri Wildflowers. Ginny Klomps and I team teach the course on Tuesday nights in the spring.

It is a nontechnical self-improvement class. At first, we did not intend to ever use scientific names of plants, but at the insistence of the students we were soon spouting both common and scientific names.

Our first year we held a couple of two-hour indoor sessions, giving slide programs on Wildflowers and the Sun and Missouri Natural Areas. Lecture topics involved such things as "How to Use the Field Guide," "Key Characteristics," "Photography," and "Endangered Plant Species."

The real meat of the class, however, is the field trips. Trips are scheduled as soon after normal working hours as possible and last until dark. Last year trips were made to mesophytic forests, bottomland forests, glades, and disturbed soil communities.

Our intention has not been to teach our students how to use Steyermark or more technical keys. We likewise have no interest in requiring students to learn a prescribed amount of material. Our goals are simple: Help students learn to use a field guide; create an awareness and appreciation for native plant communities; and have a good time.



I think we were successful in meeting these goals last year--hopefully we'll be even more successful this year. It can be financially worthwhile as well as emotionally satisfying. Ginny and I have taught as volunteers because Department of Conservation policy prohibits us from accepting remuneration. However, we could earn about \$100.00 each if we were "private citizens."

I would like to invite other members of MoNPS to contact Ginny or me for advice in arranging wildflower classes in your areas.

## **SPECIAL NOTICES**

### ANNUAL MEETING

The annual meeting of the Missouri Native Plant Society will be held on the campus of The University of Missouri at Rolla on Sunday, June 13. Registration is scheduled for 9:30 to 10 a.m. The meeting will begin at 10, both in The Civil Engineering Auditorium.

Further information as to field trips, maps, places to stay, etc. will be sent out with the ballots for new Board members, in a separate mailing.

### FIELD TRIPS

As of the March board meeting, there is an official field trip committee with an official chairman - Ginny Klomps, Botanist with the Missouri Department of Conservation.

Last year several field trips were organized on the state level, and were rather poorly attended. We have decided that field trips may be more successful when organized at the local level, and that this is a task well suited to regional chapters (see report on regional chapters appearing elsewhere in this issue). Once local chapters are formed, the field trip chairperson will work with them in coordinating field trip activities.

In the meantime, if anyone would like to organize a local trip this spring, please contact Ginny (P.O. Box 180, Jefferson City, Missouri 65102 314/751-4115) and she will help set things up and make sure other members hear about it. We will, of course, be holding several trips in conjunction with our annual meeting June 13.

Also, Ginny is looking for volunteers interested in serving on her committee.

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One of our members has recently received recognition for his monumental work on grasses and sedges. The Royal Botanical Gardens in Kew, England writes that Leroy Korschgen's work will be "an invaluable source of information" and "embraces an enormous amount of meticulous work."

(See announcement of this publication in our Winter issue, 1981)



Robert Mohlenbrock of Southern Illinois University, and a member of MoNPS Board of Directors, is the author of Flowering Plants: Magnolias to Pitcher Plants, to be published by the SIU Press in April.

This copiously illustrated work is the eighth devoted to flowering plants in the Illustrated Flora of Illinois series, and covers fifteen plant families in four orders generally conceded by botanists to be among the most primitive living plants in the world today.

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A particularly alert reader caught an interesting anomaly in connection with Warren Wagner's article on the proper naming of "our Missouri Primrose" in the last issue of Missouriensis. Wagner lists the plants collected by Bradbury and Nuttall in Jefferson and Washington Counties in 1810. Among these was Grindelia squarrosa which our correspondent recognized as a plant not listed by Steyermark for either of those counties, although now growing in at least one large population in an area of Jefferson County well-known to him.

A request to Ginny Klomps, our State Botanist, for further enlightenment on the subject brought the following response:

I have been through the list of plants in Wagner's article reported by Nuttall and Bradbury. *Mentzelia oligosperma* is not listed in Steyermark for either Jefferson or Washington counties. *Psoralea esculenta* and *Echinacea purpurea* are both listed in Jefferson county but not Washington county. The remaining species (*Bumelia lanuginosa*, *Psoralea onobrychis* and *Baptisia leucophaea*) are listed from both counties. I would hesitate to list *P. esculenta* and *E. purpurea* from Washington county solely on the basis of Nuttall's report, as those may have only been seen in Jefferson county.

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## **DON'T FORGET YOUR DUES**

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We have recently received the first issue of a new journal dedicated to issues so similar to our own that the President of the organization publishing it is a contributor to this issue of Missouriensis, and the author of its lead article has been a contributor in the past.

The Journal of the Natural Areas Association, of which John E. Schwegman (see pg. 4) is President is published "in an effort to improve information dissemination to and between natural area professionals." Greg Iffrig of the Missouri Department of Natural Resources is its Editor, and has contributed a history of the Association to the first issue, which also includes interesting material on the Illinois landowner contact program, and a review of hunting policies on nature preserves and in natural areas of eleven midwestern states.

Further information about the Association and the Journal can be obtained from Iffrig, Box 176, Jefferson City, MO, 65102

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It will also interest readers of Missouriensis to know that Jim Jackson of Marthasville has just been given an award by the Natural Resources Council of America for the excellence of his new book, Pulse of the Forest.

## HELP WANTED

### PLANT PICTURES NEEDED

Peter Raven of the Missouri Botanical Garden has kindly forwarded a letter from the Smithsonian Institution requesting color slides of plants. The following is excerpted from a letter written to Raven, 2/9/81, by Edward S. Ayensu, Director, Office of Biological Conservation.

Several years ago the Office of Biological Conservation started to prepare an illustrated, educational book on the endangered and threatened plant species of the United States.

Thanks to the concerted effort of our staff and the generous sharing of information which we have experienced, I am pleased to say that the text is now virtually completed. Approximately 150 taxa are treated, along with major subjects such as centers of botanical endemism, the official protection of plant species, and the need for conservation of vulnerable plants and their habitats. The Smithsonian Institution Press has scheduled publication for 1981.

It is hoped that this book will stimulate the awareness of layman and scientist alike towards an understanding of this country's diminishing flora and the ecological milieu on which its survival depends. I am well aware of the tremendous impact of excellent illustrations towards bringing a point home to the reader, and would like to ask if you would care to assist our efforts by means of loaning excellent color slides of United States plants from the enclosed list\*, for consideration for publication in the book with full credit to the photographer.

We are primarily interested in striking photographs of flowering specimens which also present aspects of the plant's growth form and habitat.

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\*Rather than publish Ayensu's entire list, we print below only those taxa which are also on our Missouri list of endangered and threatened species. Raven or your editor will be happy to furnish the full list and/or other details from the original letter, on request.

Araliaceae - Panax quinquefolius  
Asclepiadaceae - Asclepias meadii  
Caryophyllaceae - Geocarpon minimum  
Fabaceae - Cledrasia lutea  
Fagaceae - Castanea ozarkensis

Orchidaceae - Cypripedium candidum  
Isotria medeoloides  
Plantaginaceae - Plantago cordata  
Primulaceae - Dodecatheon frenchii  
Ranunculaceae - Hydrastis canadensis  
Rosaceae - Neviusia alabamensis

REQUEST FOR INFORMATION ON CERTAIN PLANTS AND HABITATS IN MISSOURI  
OF INTEREST TO LEPIDOPTERISTS

George Balogh  
7438 Grant Village Drive  
St. Louis, MO 63123

Since many phytophagous insects are particular about their foodplants, entomologists have found a knowledge of botany useful in their work. The following list was prepared to aid local lepidopterists locate colonies of interesting butterfly and moth species. Much needs to be learned about the foodplants of Lepidoptera in the Ozark region. In some cases insects utilize different plants in different portions of their range. For instance, the Baltimore Checkerspot Butterfly (Euphydryas phaeton) in states north of Missouri feeds during early larval instars on Turtle Head (Chelone glabra) where the butterfly inhabits wetlands. But in the Ozarks young larvae feed on Gerardia grandiflora, and the butterfly inhabits open woodlands and glades. Ozark populations of the Baltimore Checkerspot also have a distinct appearance and have been described as a subspecies (Euphydryas phaeton ozarkae). Certainly other examples of species and subspecies with unique Ozark foodplants are yet to be discovered.

Most Lepidoptera larvae feed on the foliage or flower parts of their foodplants. Some groups have specialized methods of feeding, such as the Noctuid Moth genus Papaipema. The larvae of Papaipema species bore into the stems and roots of plants and most species are very host specific. Adults emerge in late summer or fall and are usually quite sedentary, flying only in the vicinity of their foodplants. Three species of this moth genus are listed below.

I would greatly appreciate hearing from members of the Native Plant Society familiar with the following habitats and species. Mr. John Richard Heitzman of Independence, MO. is currently preparing two works on Missouri Lepidoptera. He kindly reviewed this note and added to the list. Input from field botanists will contribute to the continuing survey of Missouri's fauna.

For the plant species listed information concerning moderate to large sized colonies is desired. Generally, insects do not maintain themselves at isolated stations if only a few individuals of the foodplant are present.

Habitat or Plant Species

Some Associated Lepidoptera

- |  |  |
|--|--|
| 1) Virgin to lightly grazed prairie,<br>both wet and dry | <u>Speyeria idalia</u> , <u>Oarisma poweshiek</u> ,<br><u>Atrytone argos</u> , <u>Hesperia ottoe</u> , <u>H.</u><br><u>attalus</u> , <u>H. viridis</u> |
| 2) Large glades  | Multiple species of glades and<br>woodland edges   |
| 3) <u>Arundinaria gigantea</u> (Cane)                    | <u>Amblyscirtes aesculapius</u> ,<br><u>Poanes yehl</u> , <u>Lethe creola</u> , <u>L.</u><br><u>portlandia missarkae</u>                               |
| 4) <u>Carex lacustris</u> and <u>C. hyalinolepis</u>     | <u>Euphyes dion</u> and <u>E. dukesi</u>   |

5) <u>Tripsacum dactyloides</u> (Gama grass)	<u>Problema byssus</u>
6) <u>Zizania aquatica</u> (Wild Rice), and <u>Zizaniopsis miliacea</u> (Water Millet)	<u>Poanes viator</u>
7) <u>Aquilegia canadensis</u> (Columbine)	<u>Erynnis lucilius</u>
8) <u>Acacia angustissima</u> (Prairie Acacia)	<u>Cogia hippalus outis</u>
9) <u>Taenidia integerrima</u> (Yellow Pimpernel), <u>Thaspium barbinode</u> (Meadow Parsnip), <u>Zizia aurea</u> (Golden Alexander)	<u>Papilio joane</u>
10) <u>Cirsium muticum</u> (Swamp Thistle)	<u>Calephelis muticum</u>
11) <u>Senecio obovatus</u> (Squaw-weed)	<u>Calephelis borealis</u>
12) <u>Phoradendron flavescens</u> (Mistletoe)	<u>Atlides halesus</u>
13) <u>Astragalus caryocarpus</u> (Ground Plum) and <u>Glycyrrhiza lepidota</u> (Wild Licorice)	<u>Lycaeides melissa</u>
14) <u>Lathyrus venosus</u> (Bushy Vetch) and <u>Vicia caroliniana</u> (Wood Vetch)	<u>Glaucopsyche lygdamus</u>
15) <u>Aruncus dioicus</u> (Goat's Beard)	<u>Celastrina ebinina</u>
16) <u>Gerardia grandiflora</u>	<u>Euphydryas phaeton ozarkae</u>
17) <u>Amphicarpa bracteata</u> (Hogpeanut)	<u>Autochon cellus</u>
18) <u>Sapindus drummondii</u> (Soapberry)	<u>Phaestrymon alcestis</u> and several moth species
19) <u>Forestiera acuminata</u> (Swamp Privet)	<u>Philtraea monillata</u>
20) <u>Dryopteris</u> species (Shield Fern)	<u>Gueneria similaria</u>
21) <u>Cimicifuga racemosa</u> (Black Snakeroot)	<u>Eupithecia cimicifugata</u>
22) <u>Eryngium</u> species (Button Snakeroot)	<u>Papaipema eryngii</u>
23) <u>Lilium michiganense</u> (Michigan Lily)	<u>Papaipema cerina</u>
24) <u>Veronicastrum virginicum</u> (Culver's Root)	<u>Papaipema sciata</u>

As you are in the field this spring, I would like to ask for your help on a matter for me, if it is possible. We are looking for some roots of Galium pilosum to help with a scientific research project involving some archaeological finds of this or a similar plant. The archaeologist wishes to use the roots for some experimentation, apparently on dyes or something similar. I would like to have from 10 or 15 grams to as much as a kilogram of root material, and the older the root material the better. With whatever root material you can find for me, I would like to have a voucher specimen for the herbarium as well.

Richard H. Daley  
Special Assistant to the Director, Missouri Botanical  
Garden

# UPDATE ON ENDANGERED SPECIES

On February 4 of this year we received from the Missouri Department of Conservation the following report that updates Sherry Morgan's article in our last issue (Winter, 1981). We have not printed the list of "species that continue to be candidates for listing", as our readers can readily refer back to that article for such information.

The U.S. Fish and Wildlife Service published a new Notice of Review for plants on December 15, 1980 (Federal Register 45(242):82480-82569). This notice refines and updates three previous notices and is the current listing for the United States.

Several changes relating to plant species in Missouri have taken place. The following taxa were dropped from consideration for listing based on our recommendations and those of other states:

<u>Species</u>	<u>Common Name</u>	<u>Family</u>
<u>Amorpha brachycarpa</u>	Hairless Leadplant	Fabaceae
<u>Cladrastis lutea</u>	Yellowwood	Fabaceae
<u>Cypripedium candidum</u>	Small White Lady-slipper	Orchidaceae
<u>Hydrastis canadensis</u>	Golden Seal	Ranunculaceae
<u>Muhlenbergia schreberi</u> var. <u>curtisetosa</u>	Nimble Will	Poaceae
<u>Panax quinquefolius</u>	Ginseng	Araliaceae
<u>Penstemon cobaea</u> var. <u>purpureus</u>	Purple Beard-tongue	Scrophulariaceae
<u>Platanthera flava</u>	Pale Green Orchid	Orchidaceae
<u>Platanthera peramoena</u>	Purple Fringeless Orchid	Orchidaceae
<u>Rubus missouricus</u>	Prickly Groundberry	Rosaceae
<u>Sullivantia renifolia</u>	Sullivantia	Saxifragaceae
<u>Veratrum woodii</u>	Wood's False Hellebore	Liliaceae
<u>Vaccinium vacillans</u> var. <u>missouriense</u>	Black Huckleberry	Ericaceae

Other Missouri species have been added to the Notice of Review. All of these taxa are listed under Category 2, meaning that further research and field study is needed to determine current status. Any information that you may have about these species would be appreciated.

<u>Arabis missouriensis</u> var. <u>deamii</u>	Deam's Rock Cress	Brassicaceae
<u>Aster furcatus</u>	Unnamed Aster	Asteraceae
<u>Delphinium treleasei</u>	Trelease's Larkspur	Ranunculaceae
<u>Dodecatheon frenchii</u>	French's Shooting Star	Primulaceae
<u>Polymnia laevigata</u>	Smooth Leaf-cup	Asteraceae
<u>Silene regia</u>	Royal Catchfly	Caryophyllaceae

The Small Whorled Pogonia, Isotria medeoloides, is now listed as endangered. This inconspicuous orchid has not been seen in Missouri since 1897.

# PRAIRIE DAY

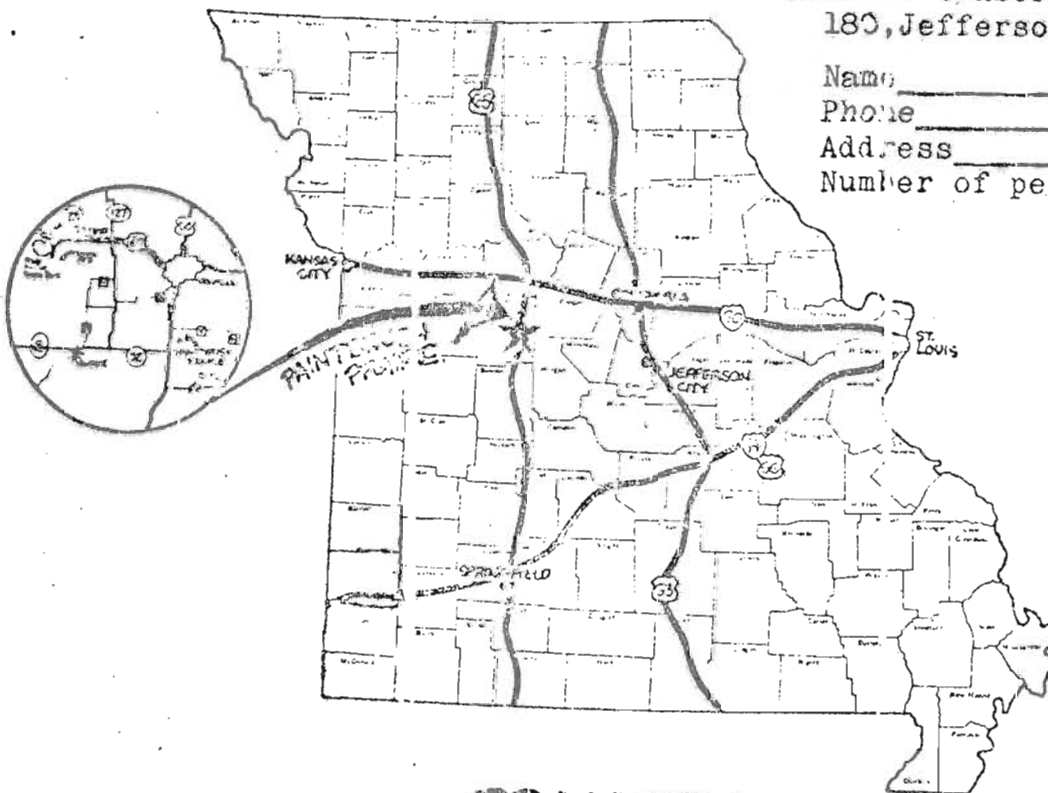
The Department of Conservation invites you to join us for a day on one of the few remaining unplowed prairies in the state. There will be "tailgate talks" about prairie mammals, birds and amphibians and reptiles. Department naturalists will lead small groups across the prairie interpreting the sights, sounds and moods of the prairie landscape.

Visitors at Prairie Day will meet and talk with 19th century traders. They'll learn about the lives and times of the men who challenged the prairie to trade for furs. Children will be treated to an old-fashioned storytelling session with stories about animals and nature.

Prairie Day will be held from 8:00 a.m. to 5:00 p.m. Saturday, May 16 at Paint Brush Prairie. Paint Brush is a 74-acre jewel just nine miles south of Sedalia along the east side of Highway 65. Visitors will also have an opportunity to visit Friendly Prairie just a mile west of Paint Brush.

Programs will be repeated throughout the day. It will take about two or three hours to experience all that is offered. Dress should be casual with tennis shoes or boots for walking and clothes suitable for sitting on the ground. A hat and sunglasses are recommended for your comfort. Binoculars will be handy for observing prairie wildlife. Photographers are welcome and should have ample opportunity for prairie wildflower photography.

## LOCATION MAP



If you wish to attend, please send the following information to Prairie Day, Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO, 65102:

Name \_\_\_\_\_  
Phone \_\_\_\_\_  
Address \_\_\_\_\_  
Number of persons in party \_\_\_\_\_

PRAIRIE  
DAY