

Additions to the Flora of Southern Indiana

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Introduction

Considerable new information has been added to the knowledge of southern Indiana's flora due to field activities by members of the Indiana Natural Heritage Program. During 1982 four species new to Indiana were recorded, as well as two species new to southern Indiana. Thirteen infrequently observed species were also noted at new locations.

All collection numbers are those of the Indiana Natural Heritage Program. Voucher specimens are to be deposited in the Deam Herbarium of Indiana University at Bloomington. The nomenclature follows Fernald (5) with the exception of *Platanthera*, with follows Luer (7) and *Lorinseria* and *Lycopodium*, which follows Cranfill (2).

Species New to Indiana

Itea virginica L. That this shrub was unknown from Indiana prior to our discovery is surprising, especially considering that we have collected it from three different sites. It may have been overlooked by early botanists (a good possibility, for all three sites are in somewhat remote areas), or there may have been a recent range extension into the state from the south. It occurs in a seep spring near Haysville (May 24 Homoya, Casebere, and Hedge 4034) and in a lowland forest at Buffalo Flat near Jasper (November 9 Homoya and Post s.n.), both in Dubois County. We also have it from a sinkhole swamp near Central Barren in Harrison County (July 14 Homoya and Hedge 4216). Associates include *Liquidambar styraciflua*, *Quercus michauxii*, *Nyssa sylvatica*, *Bignonia capreolata*, *Carex gigantea*, and *Peltandra virginica*.

Lorinseria areolata (L.) Presl. After observing a major range extension of this fern into southern Illinois during the past fifteen years, its discovery in southern Indiana was not totally unexpected. On June 24 we found two small populations growing on the edge of a sinkhole swamp southeast of Palmyra in Harrison County (Homoya, Aldrich, Post, and Stars 4072). The most frequent habitats used by *Lorinseria* in southern Illinois are sandstone cliffs; it will be interesting to see if similar environments are eventually utilized in Indiana.

Panicum scoparium Lam. This large grass is readily identified by its plush, velvety pubescence of culms and leaves and its glabrous, viscid band below each bearded node. A southern species of damp thickets and fields, it was first discovered in nearby southern Illinois in 1967 (8) and is now known from Posey County, Indiana. It has been reported for Indiana by several collectors, but was excluded by Deam due to error in identification (3,4). Several large colonies were found growing in an open, seasonably wet "flat" approximately two miles west of Hovey Lake Fish and Wildlife Area (August 9 Homoya and Aldrich s.n.).

Trichomanes boschianum Sturm. This temperate member of the mostly tropical *Hymenophyllaceae* was found growing in a small, dark grotto at the base of a sandstone cliff near Yellow Birch Ravine Nature Preserve in Crawford County (May 22, 1977 Mark and Julius Swayne s.n.). An intensive search in similar habitats in nearby areas has failed to reveal new sites for the filmy fern, making it one

of the rarest plants in Indiana. In addition, the severe winters subsequent to its discovery by the Swaynes have reduced the existing population considerably to only twenty to thirty small fronds (*vide* Homoya, J. and S. Aldrich, Post, C. and M. Ritter from observation on February 27, 1982).

Species New to Southern Indiana

Scleria pauciflora Muhl. ex Willd. Previously known only from northwestern Indiana, we now have two sites for it from the extreme southern part of the state. Several plants were found growing in a xeric upland forest near Hindostan Falls in Martin County with *Quercus prinus*, *Q. marilandica*, *Vaccinium arboreum*, *Danthonia spicata*, and *Lechea tenuifolia* (June 30 Homoya and Hedge 4078). On July 15 at least five plants of the nut-rush were seen in a remnant "barrens" environment near Leavenworth in Crawford County (Homoya and Hedge 4201).

Mikania scandens (L.) Willd. This vining member of the *Compositae* was found in a lowland forest along the Patoka River in Pike State Forest, Pike County, (August 26 Hedge and Post s.n.). While expected to occur in southwestern Indiana due to its proximity to populations in southern Illinois, it was previously known only from wetlands bordering the Kankakee River in northwestern Indiana. The Kankakee populations are no longer considered extant (1,9).

Infrequently Collected Species in Southern Indiana

Asplenium montanum Willd. Approximately thirty to fifty individuals of this mostly Appalachian spleenwort were observed growing on a south-facing sandstone cliff at Yellow Birch Ravine Nature Preserve in Crawford County (February 27 J. and S. Aldrich, Homoya, Post, and C. and M. Ritter—photo voucher).

Carex decomposita Muhl. Four new sites for this unusual semiepiphytic sedge were recorded for Indiana, all in Harrison County. Sites include a sinkhole swamp southeast of Palmyra (June 24, Aldrich, Homoya, Post and Starcs s.n.), a sinkhole swamp east of central Barren (July 15 Hedge and Homoya 4196), a sinkhole pond northwest of Laconia (July 28 Homoya, Hedge, and Medley s.n.), and a sinkhole swamp northeast of Palmyra (July 29 Homoya, Hedge, and Medley s.n.).

Carex eburnea Boott. The discovery of this sedge in Harrison County provides its second known occurrence in the state outside of the Lake Michigan dunes region. Numerous clumps of this plant form carpets over thin soil above and below both limestone and sandstone cliffs bordering the Ohio River at Harrison-Crawford State Forest (August 17 Homoya, Babcock, Hedge, and Post s.n.).

Carex gigantea Rudge. Extant populations of this southern sedge are currently known in Indiana only from a few sinkhole swamps in Harrison County. Plants were seen in swamps southeast of Palmyra (June 24 Aldrich, Homoya, Post, and Starcs 4180), and at three separate sites east of Central Barren (July 14 and 15 Homoya and Hedge 4189).

Dentaria multifida Muhl. While this species was reported from five counties by Deam (4), we currently know of only one extant site. Approximately twenty plants were observed in a mesic, forested rocky slope above the Vernon Fork of the Muscatatuck River at Crosley State Fish and Wildlife Area in Jennings County (April 30 Homoya, Aldrich, Hedge, and Starcs s.n.). Its small size and linear leaves easily distinguish this from the other *Dentaria* species with which it grows, including *D. laciniata*, *D. heterophylla*, and *D. diphylla*.

Dryopteris cristata (L.) Gray. The southernmost location for this mostly northern fern was Baxter's "Bog" in Monroe County until two new sites for it were found in Martin and Dubois Counties (April 21 Homoya and Post 4006 and

May 24 *Homoya*, *Casebere*, and *Hedge* s.n.). Both new sites are acid seep springs dominated by *Osmunda cinnamomea* and *O. regalis*. *Sphagnum* is also present in parts of each seep.

Hottonia inflata Ell. Several hundred plants of American Featherfoil were found in a *Populus heterophylla*—*Taxodium distichum* swamp and a *Quercus lyrata* swamp two miles west of Hovey Lake State Fish and Wildlife Area in Posey County (May 6 *Homoya*, *Aldrich*, *Hedge*, and *Starcs* 4123). This is our only known extant site.

Oxydendrum arboreum (L.) DC. On February 28 fifteen to twenty trees were found in a sandstone ravine near Jubin Creek in Perry County (*Homoya*, *Aldrich*, and *C. Ritter* s.n.). This population of Sourwood is approximately twenty miles from the only other known site for it in the State (6).

Platanthera clavellata (Michaux) Luer. This diminutive orchid was found to be frequent on hummocks of *Sphagnum* and liverworts at the base of *Osmunda* ferns that occur in the acid seeps of Martin and Dubois Counties (May 24 *Homoya*, *Casebere*, and *Hedge*). Currently the nearest known sites in Indiana are from the northern tier of counties.

Platanthera flava (L.) Lindl. var. *flava*. A colony of fifty or more plants of this orchid were found in a floodplain forest along the Vernon Fork of the Muscatatuck River in Jackson County (April 29 *Hedge*, *Aldrich*, *Homoya*, and *Starcs* s.n.). Only seven plants of the group flowered; complete anthesis was achieved on July 14. This variety differs from the northern variety *herbiola* by its habitat preference, loose inflorescence, short bract length, quadrate shape of labellum, and later flowering date. The orchids were growing in a seasonally wet depression with *Saururus cernuus* and *Carex muskingumensis* and an overstory of *Liquidambar styraciflua* and *Quercus palustris*.

Poa paludigena Fern. and Wieg. A remarkable disjunct population of the Bog Bluegrass was rediscovered in a seep in Dubois County where Deam had found it in 1929 (May 24 *Hedge*, *Casebere*, and *Homoya* 4155). The site is the same one which harbors *Platanthera clavellata*, *Dryopteris cristata*, and *Itea virginica*.

Rhynchospora corniculata (Lam.) Gray. Two new sites for the Horned-Rush were found in northern Harrison County just east of Central Barren (July 14 *Homoya* and *Hedge* 4229). The plants were growing in sinkhole swamps with *Carex gigantea*, *C. lupulina*, and *Glyceria septentrionalis*.

Spiranthes tuberosa Raf. This infrequently collected orchid species (we have records of four previous statewide collections) is probably not as rare as once believed. We observed it flowering on two occasions; at Yellow Birch Ravine Nature Preserve in Crawford County (August 18 *Hedge*, *Babcock*, *Homoya*, *Hutchison*, and *Post*—photo voucher and near Buck Creek in Harrison County (September 9 *Aldrich* and *Homoya*—photo voucher). Plants were growing with full exposure to the sun; in an old field and in an abandoned sandstone quarry. Associated species include *Viola pedata*, *Andropogon scoparius*, *Strophostyles umbellata*, *Bartonia virginica*, and *Lycopodium digitatum*.

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Literature Cited

1. BACONE, J.A., AND C.L. HEDGE. 1979. A Preliminary List of Endangered and Threatened Vascular Plants in Indiana. *Proc. Ind. Acad. Sci.* 89:359-371.
2. CRANFILL, R. 1980. Ferns and Fern Allies of Kentucky. Kentucky Nature Preserves Commission, Frankfort, KY. 284p.
3. DEAM, C.C. 1929. Grasses of Indiana. Indiana Department of Conservation, Indianapolis, IN 356p.
4. DEAM, C.C. 1940. Flora of Indiana. Indiana Department of Conservation, Indianapolis, IN 1236p.
5. FERNALD, M.L. 1950. Gray's Manual of Botany. American Book Company, New York, NY 1632P.
6. LINDSEY, A.A., D.V. SCHMELZ, AND S.A. NICHOLS. 1969. Natural Areas in Indiana and Their Preservation. *Ind. Nat. Areas Surv.*, Purdue Univ., Lafayette, IN 594p.
7. LUER, C.A. 1975. The Native Orchids of the United States and Canada excluding Florida. The New York Botanical Garden, New York. 361p.
8. MOHLENBROCK, R.H. 1973. Grasses: Panicum to Danthonia. Southern Illinois University Press, Carbondale, IL 378p.
9. SWINK, F., and G. WILHELM. 1979. Plants of the Chicago Region, The Morton Arboretum, Lisle, IL 922p.