

ADDITIONS TO THE FLORA OF SOUTHERN INDIANA, IV

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ABSTRACT: Twenty-eight taxa of vascular plants categorized as new to Indiana; new to southern Indiana; and rarely observed in southern Indiana, were found in southern Indiana during the 1988 and 1989 natural area and rare species inventory of the Indiana DNR, Division of Nature Preserves. Those new to Indiana are: *Aegopodium podagraria*, *Arthraxon hispidus*, *Broussonetia papyrifera*, *Eupatorium rotundifolium*, *Pachysandra procumbens*, *Polygala incarnata*, *Ranunculus harveyi*, *Sanicula smallii*, *Senecio smallii*, *Setaria geniculata*, and *Spiranthes ochroleuca*. *Epipactis hel-leborine* and *Hieraceum pratense* are new to southern Indiana. Those rarely observed in southern Indiana include *Aconitum uncinatum*, *Agalinis fasciculata*, *Agalinis gatteringeri*, *Arabis patens*, *Eupatorium incarnatum*, *Helianthus occidentalis*, *Jussiaea decurrens*, *Ligusticum canadense*, *Liparis loeselii*, *Malaxis unifolia*, *Polytaenia nuttallii*, *Prenanthes aspera*, *Solidago hispida*, *Solidago speciosa*, and *Spiranthes lucida*.

INTRODUCTION

This paper is the fourth in a series of reports by the principal author to the Academy on additions to the vascular flora of southern Indiana (Homoya, 1983; Homoya in press; Homoya and Abrell, 1986). Southern Indiana as defined here is that area south of U.S. Highway 40 east of Indianapolis and U.S. Highway 36 west of Indianapolis. Information on current endangerment status in the state comes from Aldrich *et al.* (1986). Nomenclature follows Gleason and Cronquist (1963), except for *Spiranthes*, which follows Luer (1975), and *Agalinis*, which follows Mohlenbrock (1986). Natural region names follow Homoya *et al.* (1985).

SPECIES NEW TO INDIANA

Aegopodium podagraria L. Jennings County. This exotic umbel was collected in a rich, mesic woodland near the Vernon Fork of the Muscatatuck River, near the town of Vernon. The plants appeared to be naturalized, not occurring next to any habitation. Also, the plants were not variegated as the cultivated ones typically are; leaves of plants established from seed are non-variegated (Voss, 1985). (June 6, 1989 Homoya, Hedge, and LeBlanc 89-06-06-34).

Arthraxon hispidus (Thunb.) Makino. Perry County. This Japanese grass is currently well established in the southeastern U.S. and is extending its range northward. Unfortunately, it now occurs in Indiana, growing in a shallow ditch feeding the Ohio River east of Cannelton. Cusick (1986) included Indiana within the range of this species, but to our knowledge this is the first report documenting a collected specimen. (October 3, 1989 Homoya and Hedge 89-10-03-197).

Broussonetia papyrifera (L.) Vent. Harrison and Perry Counties. This exotic tree appears to be freely escaped and naturalized along roadsides and rocky slopes bordering the Ohio River. Deam (1940) had not seen naturalized specimens of this species, so perhaps our observations are of a relatively recent phenomenon, although some trees observed were quite large (doubtful over 50 yrs. of age, however). (HARRISON COUNTY: August 18, 1989 *Homoya and Abrell* 89-08-18-129; not vouchered for Perry County).

Eupatorium rotundifolium L. Harrison County. This attractive composite with southeastern U.S. affinities was found in a depauperate chert barrens in southern Harrison County. Several clumps were noted growing with *Andropogon scoparius*, *Liatris squarrosa*, *Spiranthes tuberosa* and *Lespedeza hirta*. (August 18, 1989 *Homoya and Abrell* 89-08-18-127).

Pachysandra procumbens Michx. Harrison and Crawford Counties. Allegheny spurge, heretofore thought to occur no closer to Indiana than east-central Kentucky, was discovered at two sites in the Shawnee Hills Natural Region. At one site in Crawford County thousands of plants carpet a steep, south-facing slope above a tributary to Little Blue River. At the Harrison County site, a smaller population of a few hundred stems occurs on limestone talus at the base of a massive slope bordering the Blue River. Both sites are extremely rugged and distant from roads, thus possibly explaining the lack of previous collections of this conspicuous plant. (HARRISON COUNTY: June 28, 1989 *Hedge and Homoya* 89-06-28-86; CRAWFORD COUNTY: August 17, 1989 *Homoya, Abrell, and Olson* 89-08-17-114).

Polygala incarnata L. Harrison County. Dozens of plants of the pink milkwort were found in a disturbed chert barrens north of Corydon. The plants were growing in full sun with *Andropogon scoparius*, *Danthonia spicata*, and *Trichostema dichotomum*. (June 28, 1989 *Homoya and Hedge* 89-06-28-80).

Ranunculus harveyi (Gray) Britt. Floyd County. Several populations of this buttercup occur on the upper slopes of the dry, chestnut oak-Virginia pine dominated hills of the Knobstone Escarpment. This species appears to be well established, as populations are now known from sites scattered over at least a ten mile section of the Escarpment. The nearest known populations of this Ozark species are in the Shawnee Hills of Southern Illinois. (April 19, 1988 *Homoya and Martin* 88-04-19-4).

Sanicula smallii Bickn. Crawford, Harrison and Perry Counties. This snakeroot of southeastern U.S. affinities was discovered growing in three separate localities, one each for the above referenced counties. At each locality only a few plants were found, these growing at sites composed of dry-mesic upland forest. (CRAWFORD COUNTY: May 31, 1989 *Hedge and Homoya* 89-05-31-06; HARRISON COUNTY: May 31, 1989 *Hedge and Homoya* 89-05-31-07; PERRY COUNTY: June 29, 1989 *Homoya and Hedge* 89-06-29-89).

Senecio smallii Britt. Harrison County. This species was found in several sites throughout the south-central and southeastern parts of the county. The most common habitats are old fields and remnant chert barrens. The lack of earlier reports of this species, and the conspicuous occurrence of it today, suggest that our populations may be part of a recent range expansion phenomenon. (June 1, 1989 *Homoya, Hedge, and Abrell* 89-06-01-23).

Setaria geniculata (Lam.) Beauv. Perry County. This native, perennial foxtail grass was collected from a grassy hillside next to SR 70 just east of the SR 70-SR 37 intersection. The grass was growing with *Andropogon scoparius*, *Lobelia puberula*, and *Lespedeza virginica*. (September 26, 1989 *Homoya*, *Ballantyne*, and *Landes* 89-09-26-192).

Spiranthes ochroleuca (Ryd.) Rydberg. Bartholomew and Brown counties. Because of the taxonomic uncertainties regarding this species, Deam (1940) excluded it from the state flora. The uncertainties remained until Sheviak and Catling (1980) convincingly argued for treatment of the taxon as a valid species. We found the species, as it is now understood, occurring on dry, rocky roadcuts and old fields dominated by little bluestem. (BARTHOLOMEW COUNTY: October 12, 1988 *Homoya* and *Hedge* 88-10-12-120; not vouchered by us for Brown County).

SPECIES NEW TO SOUTHERN INDIANA

Epipactis helleborine (L.) Crantz. Crawford County. Previous collections of this exotic orchid all came from the northern tier of counties, particularly those bordering Lake Michigan. We observed a single individual growing on a narrow terrace of limestone boulders high on a steep bluff overlooking the Ohio River. The orchid's occurrence was not totally unexpected, as recent collections have been made near Louisville, KY (Marc Evans, personal communication). (June 9, 1989 *Homoya et al.* 89-06-09-46).

Hieraceum pratense Tausch. Jennings County. Several plants of this exotic hawkweed were noted growing within a utility line rights-of-way near the town of Vernon (June 6, 1989 *Homoya*, *Hedge*, and *LeBlanc* 89-06-06-35).

SPECIES RARELY OBSERVED IN SOUTHERN INDIANA

Aconitum uncinatum L. Perry County. The discovery of this plant in Indiana is the first since 1842 when Short collected it from a barrens in Harrison County (Deam, 1940). Approximately 30 plants were found growing in the edge of a forest opening within the Hoosier National Forest. At least five of the plants were growing in full sun in the opening, but these were obviously stressed. Those growing in partial shade were much more vigorous. The associates of the monkshood indicate that the site is a barrens natural community, although the actual natural condition of the site is difficult to determine due to past human activities. The occurrence of *Aconitum* in barrens habitat is very unusual; in the rest of its range it occupies mesic cliffs and stream corridors. However, the occurrence of this population and the historic one in Harrison County in barrens suggest that the Indiana plants may be an ecotype different from those in the rest of the species' range. (September 21, 1989 *Olson* and *Earney s.n.*; September 26, 1989 *Homoya*, *Olson*, *Landes* and *Ballantyne* 89-09-26-194).

Agalinis fasciculata (Ell.) Raf. Perry County. First reported for Indiana (in Spencer County) by McClain (1984), this species of false foxglove is now also known from Perry County. We observed numerous individuals of the *Agalinis* growing in an old field dominated by little bluestem, next to SR 70 west of Derby. (September 8, 1989 *Hedge* and *Homoya* 89-09-08-165).

Agalinis gattingeri (Small) Small. Perry, Crawford, and Harrison Counties. This species of false foxglove was previously thought to be rare in Indiana, but our observations prove it to be rather common in xeric grassland habitats in the above referenced counties. It evidently prefers acidic soils and ample sunlight at sites dominated by *Andropogon scoparius* and *Danthonia spicata*. (PERRY COUNTY: September 7, 1989 *Homoya and Hedge* 89-09-07-160; CRAWFORD COUNTY: September 11, 1989 *Hedge and Homoya* 89-09-11-167; HARRISON COUNTY: September 11, 1989 *Homoya and Hedge* 89-09-11-169).

Arabis patens Sulliv. Harrison County. This state-endangered rockcress was found in great numbers along a line of dry limestone cliffs bordering the Blue River. Previous to this discovery only one extant population was known. (June 28, 1989 *Homoya and Hedge* 89-06-28-88).

Eupatorium incarnatum Walt. Perry and Harrison Counties. Two populations, both apparently ones collected from and cited by Deam (1940), were relocated in the above referenced counties. Both populations were growing in moist depressions along roadways. (PERRY COUNTY: September 16, 1989 *Olson s.n.*; HARRISON COUNTY: October 26, 1989 *Homoya and Hedge* 89-10-26-205).

Helianthus occidentalis Riddell. Harrison County. Although not uncommon in the prairies of northwestern Indiana, this sunflower is rare in the southern counties. Only three counties have documented occurrences and it is suspected that those populations are no longer extant. We discovered a large population in a remnant chert barrens southeast of Corydon. (August 18, 1989 *Homoya and Abrell* 89-08-18-132).

Jussiaea decurrens (Walt.) DC. Perry County. This wetland plant was collected at two different localities in the county, both very near the Ohio River. The species was thought to be extirpated prior to these discoveries. (September 18, 1989 *Olson s.n.*; October 3, 1989 *Hedge and Homoya* 89-10-03-198).

Ligusticum canadense (L.) Britt. Harrison County. This large umbel was listed as extirpated in Indiana, but a population of approximately ten plants was found near the historic collection site east of Elizabeth that is cited by Deam (1940). (June 1, 1989 *Hedge, Abrell, and Homoya* 89-06-0125).

Liparis loeselii (L.) Rich. Jackson County. Several plants of this mostly northern orchid were found growing in a seep spring on the Muscatatuck National Wildlife Refuge. (August 4, 1989 *Homoya* 89-08-04-125).

Malaxis unifolia Michx. Monroe County. Approximately 30 plants of *Malaxis* were found growing on mossy slopes within steep ravines at Morgan-Monroe State Forest. Prior to our discovery, the last southern Indiana collections of this tiny orchid were made over 100 years ago by W.S. Blatchley (1897). (June 16, 1989 *Homoya, Hedge, Breedlove, and Bull* — photo voucher).

Polytaenia nuttallii DC. Harrison County. Several sterile and two fertile individuals of this rare umbel were observed growing in a dry woodland bordering a limestone glade in Harrison-Crawford State Forest. This is the first collection of this species in the state (outside of northwestern Indiana) since the collection by Clapp (from Harrison County) in the early 1800's (Deam, 1940). (June 9, 1989 *Homoya and Hedge* 89-06-09-50).

Prenanthes aspera Michx. Perry County. Two separate populations of rough white lettuce were found growing in barrens habitats on the Hoosier National Forest. Both populations were small, consisting of no more than three plants at each site. (September 27, 1988 and October 3, 1989 *Homoya and Hedge* — *not vouchered*).

Solidago hispida Muhl. Bartholomew and Perry Counties. This goldenrod may be more common than previously thought, as we observed it at several stations within the above counties. In every case *Solidago hispida* was growing in dry, oak woodland with *S. bicolor*. (BARTHOLOMEW COUNTY: October 12, 1988 *Homoya and Hedge* 88-10-12-122; PERRY COUNTY: October 4, 1989 *Homoya and Hedge* 89-10-04-204).

Solidago speciosa Nutt. Harrison County. A group of approximately ten plants was found growing in a barrens remnant southeast of the town of Central Barren. The species occurs primarily in the northern third of the state. (September 28, 1989 *Homoya and McGrath* 89-09-28-195).

Spiranthes lucida (H.H. Eaton) Ames. Jennings County. We found 15-20 individuals of this ladies'-tresses orchid growing on wet limestone shelves bordering a tributary to the Vernon Fork of the Muscatatuck River. This interesting habitat is apparently similar to that at a site where Deam (1940) found the orchid along the Vernon Fork. (June 6, 1989 *Homoya, Hedge, and LeBlanc*—*not vouchered*).

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