

DISTRIBUTION RECORDS OF SOUTHERN INDIANA VASCULAR PLANTS II

William E. Thomas, Scott P. Ash and Richard H. Maxwell: Herbarium, Indiana
University Southeast, New Albany, Indiana 47150 USA

ABSTRACT. Ongoing collecting and review of existing collections has resulted in additions to the collection in the Indiana University Southeast Herbarium. New and old collections yielded about 160 new vascular plant county records for Clark, Crawford, Floyd, Harrison, and Jefferson counties in southern Indiana. The Indiana vascular species that are listed as state extirpated, endangered, threatened, or rare are noted. Other species that may become listed, or are otherwise noteworthy, are briefly discussed.

Keywords: Vascular plants, Indiana, distribution records

The Indiana University Southeast Herbarium serves as an educational and community resource, as well as a research exchange facility. The herbarium contains vascular plant collections primarily from Clark, Crawford, Floyd, Harrison, and Jefferson counties, with occasional collections from Perry, Scott, and Washington counties. This area of southern Indiana includes the lowermost parts of the following regions: the Mitchell Karst Plain and Knobstone Escarpment sections of the Highland Rim Natural Region and the Shawnee Hills Natural Region (Homoya et al. 1985).

Ongoing collecting and review of existing collections in the herbarium have yielded about 160 new vascular plant county records since the publication of our last distribution list (Maxwell & Thomas 2003). Possible state records and noteworthy collections are listed alphabetically by their scientific names and briefly discussed, followed by state extirpated, endangered, threatened, rare, and watch list species. Table 1 includes distribution records, with their collection vouchers, mainly for Clark, Crawford, Floyd, Harrison, and Jefferson counties. Nomenclature conforms primarily to the *Field Guide to Indiana Wildflowers* (Yatskievych 2000), with authors of plant names, following Brummitt & Powell (1992). Some nomenclature, primarily for ferns, grasses, and common names, is from Mohlenbrock (1986), Gleason & Cronquist (1991), or Yatskievych (2000).

Determination of species status follows the

Indiana Natural Heritage Data Center's Endangered, Threatened, and Rare Vascular Plants list, from the Indiana Department of Natural Resources (DNR), Nature Preserves (10 April 1996). Former and present collectors include Indiana University Southeast students, the authors, and several volunteers.

METHODS

Sites of listed species are reported to the Indiana Department of Natural Resources, Division of Nature Preserves. Vouchers are currently held at the Indiana University Southeast Herbarium. Some collections are sent to Michael A. Homoya, a botanist with the Indiana Department of Natural Resources. Specimens are sent to Dr. George and Kay Yatskievych at the Missouri Botanical Garden as well. Methods and criteria for listing Indiana's extirpated, endangered, threatened, and rare vascular plant species have been discussed by Aldrich et al. (1986).

POSSIBLE STATE RECORDS AND NOTEWORTHY COLLECTIONS

Achyranthes japonica (Miq.) Nakai (Amaranthaceae). Japanese chaff flower. This invasive plant was first reported for Indiana by Maxwell & Thomas (2003). With the collections *W.E. Thomas 1084* and *W.E. Thomas 1745*, Harrison and Jefferson counties are added to the list of Indiana counties known to harbor this weed. Thomas has subsequently collected the species from Jefferson, Carroll, and Meade counties in Kentucky. This plant

Table 1.—State and county records. Abbreviations: SX = State extirpated; SE = State endangered; ST = State threatened; SR = State rare; WL = Watch list; *s.n.* = (*sine numero*) without a number, followed by the collection date.

Species	Family	County	Collector and number
<i>Acalypha virginica</i> L. var. <i>deamii</i> Weath.	Euphorbiaceae	Floyd	W.E. Thomas 576
<i>Achyranthes japonica</i> (Miq.) Nakai	Amaranthaceae	Harrison	W.E. Thomas 1084
		Jefferson	W.E. Thomas 1745
<i>Ammania robusta</i> Heer & Regel	Lythraceae	Clark	W.E. Thomas 296
		Crawford	W.E. Thomas 462
<i>Arabis shortii</i> (Fernald) Gleason	Brassicaceae	Crawford	W.E. Thomas 694
<i>Aristolochia serpentaria</i> L.	Aristolochiaceae	Clark	W.E. Thomas 873
<i>Bacopa rotundifolia</i> (Michx.) Wettst. (SE)	Scrophulariaceae	Harrison	W.E. Thomas 1821
<i>Bidens discoidea</i> (Torr. & A. Gray) Britton	Asteraceae	Clark	W.E. Thomas 1120
<i>Brasenia schreberi</i> J.F. Gmel.	Cabombaceae	Clark	W.E. Thomas 325
		Harrison	W.E. Thomas 912
<i>Buglossoides arvense</i> (L.) I.M. Johnst.	Boraginaceae	Crawford	W.E. Thomas 662
		Harrison	W.E. Thomas 75
<i>Cardamine diphyllia</i> (Michx.) A.W. Wood	Brassicaceae	Clark	R.H. Maxwell 3545
<i>Cardamine douglassii</i> (Torr.) Britton	Brassicaceae	Harrison	W.E. Thomas 1224
<i>Ceratophyllum demersum</i> L.	Ceratophyllaceae	Clark	L. Townsend <i>s.n.</i> July, 1968
<i>Ceratophyllum echinatum</i> A. Gray	Ceratophyllaceae	Crawford	W.E. Thomas 939
<i>Chaenorrhinum minus</i> (L.) Lange	Scrophulariaceae	Floyd	W.E. Thomas 284
		Harrison	W.E. Thomas 1411
<i>Chaerophyllum procumbens</i> (L.) Crantz var. <i>procumbens</i>	Apiaceae	Crawford	W.E. Thomas 699
<i>Chamaesyce serpens</i> (Kunth) Small (SX)	Euphorbiaceae	Switzerland	W.E. Thomas 1098
<i>Chorispora tenella</i> (Pall.) DC.	Brassicaceae	Floyd	W.E. Thomas 680
<i>Clematis pitcheri</i> Torr. & A. Gray (SR)	Ranunculaceae	Harrison	W.E. Thomas 346
<i>Clinopodium vulgare</i> L. (SE)	Lamiaceae	Crawford	W.E. Thomas 111
		Jefferson	W.E. Thomas 1452
<i>Commelina diffusa</i> Burm.	Commelinaceae	Floyd	W.E. Thomas 1788
<i>Cornus obliqua</i> Raf. (= <i>C. anomum</i> Miller var. <i>schuetzeana</i> [C.A. Meyer] Rickett)	Cornaceae	Clark	W.R. Adams 8
<i>Crepis pulchra</i> L.	Asteraceae	Clark	W.E. Thomas 269
<i>Cuscuta cephalanthi</i> Engelm.	Cuscutaceae	Floyd	W.E. Thomas 1611
<i>Cuscuta coryli</i> Engelm.	Cuscutaceae	Crawford	W.E. Thomas 1674
<i>Cuscuta indecora</i> Choisy	Cuscutaceae	Floyd	W.E. Thomas 1115
<i>Cyperus echinatus</i> (L.) Wood	Cyperaceae	Harrison	H.C. Curtis 152
<i>Desmodium sessilifolium</i> (Torr.) Torr. & A. Gray	Fabaceae	Crawford	W.E. Thomas 1042
<i>Dicentra canadensis</i> (Goldie) Walp.	Fumariaceae	Floyd	W.E. Thomas 739
<i>Dipsacus laciniatus</i> L.	Dipsacaceae	Clark	W.E. Thomas 423
<i>Egeria densa</i> Planch.	Hydrocharitaceae	Floyd	W.E. Thomas 1836
<i>Eleocharis quadrangulata</i> (Michx.) Roem. & Schult.	Cyperaceae	Clark	W.E. Thomas 367
<i>Erysimum repandum</i> L.	Brassicaceae	Crawford	W.E. Thomas 698
		Floyd	W.E. Thomas 678
<i>Eupatarium hyssopifolium</i> L.	Asteraceae	Clark	R.H. Maxwell 3035
<i>Euphorbia obtusata</i> Pursh (SE)	Euphorbiaceae	Clark	W.E. Thomas 803
		Scott	H.C. Curtis 73
<i>Euphorbia prostrata</i> Aiton	Euphorbiaceae	Crawford	W.E. Thomas 566
<i>Galinsoga quadriradiata</i> Ruiz & Pav.	Asteraceae	Crawford	W.E. Thomas 601
<i>Galium pedemontanum</i> (Bellardi) All.	Rubiaceae	Clark	W.E. Thomas 73
		Crawford	W.E. Thomas 903
		Floyd	W.E. Thomas 813
		Harrison	W.E. Thomas 240
		Jefferson	W.E. Thomas 786

Table 1.—Continued.

Species	Family	County	Collector and number
<i>Geranium dissectum</i> L.	Geraniaceae	Floyd	W.E. Thomas 210
		Jefferson	W.E. Thomas 788
<i>Geum laciniatum</i> Murray	Rosaceae	Clark	W.E. Thomas 896
		Crawford	W.E. Thomas 847
		Floyd	W.E. Thomas 259
<i>Gratiola virginiana</i> L.	Scrophulariaceae	Clark	W.E. Thomas 47
<i>Holosteum umbellatum</i> L.	Caryophyllaceae	Floyd	W.E. Thomas 649
		Harrison	W.E. Thomas 1262
<i>Houstonia pusilla</i> Schoepf	Rubiaceae	Crawford	W.E. Thomas 665
<i>Humulus japonicus</i> Siebold & Zucc.	Cannabaceae	Harrison	W.E. Thomas 1430
<i>Humulus lupulus</i> L.	Cannabaceae	Clark	W.E. Thomas 1491
<i>Hydrocotyle sibthorpioides</i> Lam.	Apiaceae	Clark	W.E. Thomas 324
		Floyd	W.E. Thomas 1157
<i>Hypericum drummondii</i> (Grev. & Hook.) Torr. & A. Gray	Clusiaceae	Clark	R.H. Maxwell 3363
<i>Hypericum sphaerocarpum</i> Michx.	Clusiaceae	Crawford	W.E. Thomas 386
<i>Ipomoea coccinea</i> L.	Convolvulaceae	Floyd	W.E. Thomas 540
<i>Ipomoea lacunosa</i> L.	Convolvulaceae	Crawford	W.E. Thomas 596
		Harrison	Wanda Pindell 2
<i>Iva annua</i> L.	Asteraceae	Floyd	W.E. Thomas 1079
<i>Iva xanthifolia</i> Nutt.	Asteraceae	Clark	Thomas & Maxwell 605
		Floyd	W.E. Thomas 1114
<i>Lemna minor</i> L.	Lemnaceae	Floyd	D.W. Taylor 253
<i>Ludwigia decurrens</i> Walter (SR)	Onagraceae	Crawford	W.E. Thomas 456
		Harrison	W.E. Thomas 130
<i>Ludwigia leptocarpa</i> (Nutt.) H. Hara	Onagraceae	Clark	W.E. Thomas 614
		Crawford	W.E. Thomas 1734
		Floyd	W.E. Thomas 583
<i>Ludwigia peploides</i> (Kunth) P.H. Raven subsp. <i>glabrescens</i> (Kuntze) P.H. Raven	Onagraceae	Floyd	W.E. Thomas 1650
		Harrison	W.E. Thomas 1046
<i>Lunaria rediviva</i> L.	Brassicaceae	Clark	W.E. Thomas 1295
<i>Lythrum alatum</i> Pursh	Lythraceae	Clark	W.E. Thomas 327
<i>Lythrum salicaria</i> L.	Lythraceae	Crawford	W.E. Thomas 461
		Floyd	W.E. Thomas 292
		Jefferson	W.E. Thomas 999
<i>Matricaria recutita</i> L.	Asteraceae	Floyd	W.E. Thomas 749
<i>Matricaria discoidea</i> DC.	Asteraceae	Crawford	W.E. Thomas 795
<i>Mirabilis jalapa</i> L.	Nyctaginaceae	Clark	W.E. Thomas 1018
<i>Mirabilis nyctaginea</i> (Michx.) MacMill.	Nyctaginaceae	Floyd	J. Loftin 67
<i>Monotropa uniflora</i> L.	Pyrolaceae	Floyd	Alice Evans 2
<i>Myosotis arvensis</i> (L.) Hill	Boraginaceae	Harrison	W.E. Thomas 953
<i>Myosotis macrosperma</i> Engelm.	Boraginaceae	Crawford	W.E. Thomas 829
		Harrison	W.E. Thomas 71
		Jefferson	W.E. Thomas 878
<i>Myosotis stricta</i> Link ex Roem. & Schult.	Boraginaceae	Clark	W.E. Thomas 1302
		Floyd	W.E. Thomas 727
<i>Myosoton aquaticum</i> (L.) Moench	Caryophyllaceae	Crawford	W.E. Thomas 902
<i>Myriophyllum spicatum</i> L.	Haloragidaceae	Clark	W.E. Thomas 1495
		Scott	W.E. Thomas 1518
<i>Najas guadalupensis</i> (Spreng.) Magnus	Najadaceae	Clark	W.E. Thomas 1832
<i>Najas gracillima</i> (A. Braun ex Engelm.) Magnus (SE)	Najadaceae	Crawford	W.E. Thomas 1814
		Harrison	W.E. Thomas 1738

Table 1.—Continued.

Species	Family	County	Collector and number
<i>Najas minor</i> All.	Najadaceae	Crawford	W.E. Thomas & H.C. Curtis 1743
		Harrison	W.E. Thomas 1827
		Floyd	W.E. Thomas 1837
<i>Osmorhiza longistylis</i> (Torr.) D.C.	Apiaceae	Crawford	W.E. Thomas 810
<i>Oxalis illinoensis</i> Schwegman	Oxalidaceae	Harrison	Maxwell & Thomas 3552
<i>Passiflora incarnata</i> L.	Passifloraceae	Crawford	W.E. Thomas 1676
<i>Phuchea camphorata</i> (L.) DC.	Asteraceae	Harrison	W.E. Thomas 545
<i>Polygonum cuspidatum</i> Siebold & Zucc.	Polygonaceae	Floyd	W.E. Thomas 541
		Harrison	W.E. Thomas 133
		Jefferson	W.E. Thomas 1447
<i>Potentilla norvegica</i> L.	Rosaceae	Harrison	W.E. Thomas 241
<i>Ranunculus ficaria</i> L.	Ranunculaceae	Crawford	W.E. Thomas 663
<i>Ranunculus micranthus</i> Nutt.	Ranunculaceae	Clark	Lisa Brinksneider s.n. 6 April 1986
		Harrison	W.E. Thomas 1225
<i>Ranunculus sceleratus</i> L.	Ranunculaceae	Floyd	W.E. Thomas 260
<i>Rubus phoenicolasius</i> Maxim.	Rosaceae	Crawford	W.E. Thomas 1409
		Floyd	R.H. Maxwell 3556
		Harrison	W.E. Thomas 1479
<i>Rudbeckia laciniata</i> L. var. <i>laciniata</i>	Asteraceae	Floyd	W.E. Thomas 1066
<i>Sagina decumbens</i> (Elliott) Torr. & A. Gray	Caryophyllaceae	Floyd	W.E. Thomas 162
<i>Sagittaria australis</i> (J.G. Sm.) Small (SR)	Alismataceae	Floyd	W.E. Thomas 1162
<i>Sagittaria graminea</i> Michx.	Alismataceae	Clark	W.E. Thomas 396
<i>Salsola kali</i> L.	Chenopodiaceae	Clark	R.H. Maxwell 1573
<i>Scutellaria lateriflora</i> L.	Lamiaceae	Floyd	W.E. Thomas 1116
<i>Selaginella eclipses</i> Buck	Selaginellaceae	Harrison	W.E. Thomas 101
<i>Silphium perfoliatum</i> L.	Asteraceae	Crawford	W.E. Thomas 981
<i>Sparganium eurycarpum</i> Engelm. ex A. Gray	Sparganiaceae	Clark	W.R. Adams 10
		Crawford	W.E. Thomas 404
<i>Spirodela polyrrhiza</i> (L.) Schleid.	Lemnaceae	Crawford	W.E. Thomas 938
<i>Stellaria corei</i> Shinnery	Caryophyllaceae	Clark	R.H. Maxwell 2939
<i>Stellaria longifolia</i> Muhl. ex Willd.	Caryophyllaceae	Clark	W.E. Thomas 94
<i>Strophostyles leiosperma</i> (Torr. & A. Gray) Piper (ST)	Fabaceae	Floyd	R.H. Maxwell 2210
<i>Thlaspi alliaceum</i> L.	Brassicaceae	Clark	W.E. Thomas 654
		Floyd	W.E. Thomas 1270
<i>Torilis arvensis</i> (Huds.) Link	Apiaceae	Clark	R.H. Maxwell 1815
		Crawford	W.E. Thomas 980
		Floyd	W.E. Thomas 906
		Harrison	W.E. Thomas 956
		Jefferson	W.E. Thomas 944
<i>Tragia cordata</i> Michx. (SR)	Euphorbiaceae	Lawrence	W.E. Thomas 126
<i>Tragopogon dubius</i> Scop.	Asteraceae	Crawford	Lance Stroud 98
		Floyd	Gohmann & Weatherholt 100
<i>Triosteum perfoliatum</i> L.	Caprifoliaceae	Harrison	H.C. Curtis 46
<i>Typha angustifolia</i> L.	Typhaceae	Clark	W.E. Thomas 987
		Harrison	W.E. Thomas 1429
<i>Valerianella chenopodifolia</i> (Pursh.) DC. (SE)	Valerianaceae	Harrison	W.E. Thomas 805
		Jefferson	W.E. Thomas 782
<i>Valerianella locusta</i> (L.) Beteke	Valerianaceae	Floyd	W.E. Thomas 206
		Harrison	W.E. Thomas 760

Table 1.—Continued.

Species	Family	County	Collector and number
<i>Valerianella radiata</i> (L.) Dufr.	Valerianaceae	Floyd	W.E. Thomas 214
		Harrison	W.E. Thomas 783
<i>Valerianella umbilicata</i> (Sull.) Wood	Valerianaceae	Crawford	W.E. Thomas 806
<i>Verbesina virginica</i> L. (SE)	Asteraceae	Crawford	W.E. Thomas 590
<i>Veronica anagallis-aquatica</i> L. (WL)	Scrophulariaceae	Floyd	W.E. Thomas 329
		Harrison	W.E. Thomas 1817
<i>Veronica hederaefolia</i> L.	Scrophulariaceae	Clark	Maxwell & Thomas 3544
<i>Veronica officinalis</i> L.	Scrophulariaceae	Clark	W.E. Thomas 231
<i>Veronica persica</i> Poir.	Scrophulariaceae	Floyd	W.E. Thomas 655
		Harrison	W.E. Thomas 652
		Jefferson	W.E. Thomas 1197
<i>Veronica polita</i> Fr.	Scrophulariaceae	Harrison	W.E. Thomas 151
<i>Veronica serpyllifolia</i> L.	Scrophulariaceae	Clark	R.H. Maxwell 2244
		Floyd	R.H. Maxwell 3136
<i>Wolffia brasiliensis</i> Wedd.	Lemnaceae	Crawford	W.E. Thomas 1731
		Floyd	W.E. Thomas 1583
		Harrison	W.E. Thomas 638

appears to be spreading along the Ohio River floodplain.

Ceratophyllum echinatum A. Gray (Certo-phyllaceae). Coontail. Found in a small pond just west of Wyandotte Lake in Crawford County, this species is under consideration for state endangered/threatened/rare status by the Department of Natural Resources (Homoya pers. commun.).

Cuscuta indecora Choisy (Cuscutaceae). Collared dodder. Found in a low floodplain woods along the Ohio River in New Albany, Floyd County, this native species is just entering our area. We consider *W.E. Thomas 1115*, the state record voucher.

Egeria densa Planch. (Hydrocharitaceae). Brazilian water-weed. A likely aquarium escapee, the first report of this species for the state was a site in Crawford County (Maxwell & Thomas 2003). A second population was found in Floyd County in the large lake at the Mount Saint Francis Retreat Center.

Euphorbia prostrata Aiton (Euphorbiaceae). Prostrate spurge. A small cluster of this tiny spurge was found in the cracks of a concrete boat ramp at the Old Dam 44 in Harrison County on the Ohio River. Gleason (Gleason & Cronquist 1991) calls this species “rarely adventive (from southern U.S.) and probably not persistent in our range.” We con-

sider *W.E. Thomas 566*, the state record voucher.

Lunaria rediviva L. (Brassicaceae). Honesty. A small population of this ornamental species was found growing on a high ridge in Clark State Forest. We consider *W.E. Thomas 1295*, the state record voucher. The origin of these plants is unknown.

Torilis arvensis (Hudson) Link (Apiaceae). Hedge-parsley. The collection *R.H. Maxwell 1815* from Clark County was originally reported as *T. japonica* (Houtt.) DC by R.H. Maxwell (1981). The specimen has since been determined to be *T. arvensis* (Hudson) Link. As far as we know *T. japonica* has not been found in Clark County.

INDIANA STATE EXTIRPATED (SX)

Chamaesyce serpens (Kunth) Small (Euphorbiaceae). Matted broomspurge. A small colony was found in late 2003 at Markland Locks and Dam complex in Switzerland County. The plants were growing on large ballast rocks in the low flood beach area of the Ohio River. The site was visited again by Thomas during the 2004 season and found to be essentially unchanged.

INDIANA STATE ENDANGERED (SE)

Bacopa rotundifolia (Michx.) Wettst. (Scrophulariaceae). Round-leaved water-hyssop. A

small population of perhaps three plants was discovered under the Ohio River bridge just east of Mauckport in Harrison County. The site is a muddy parking lot.

Clinopodium vulgare L. (Lamiaceae). Dog-mint. Several populations were found in Crawford County within the Harrison-Crawford State Forest. Additionally, a large population was discovered by Thomas in Jefferson County along a utility easement within the Splinter Ridge Wildlife Management Area.

Euphorbia obtusata Pursh (Euphorbiaceae). Blunt-leaved spurge. A small population was found in Clark County by Thomas in a roadside ditch along State Highway 31 near the entrance to Clark State Forest. A larger site was later discovered by Howell Curtis within the state forest boundaries. Additional populations were found in Scott County by both Thomas and Curtis.

Najas gracillima (A. Braun ex Engelm.) Magnus (Najadaceae). Thread-like naiad. Three new populations found in Harrison County and one in Crawford County, all within the Harrison-Crawford State Forest. All four sites were small ponds, likely remnants of old homesteads.

Ranunculus harveyi (A. Gray) Britton (Ranunculaceae). Harvey's buttercup. During an April 2003 survey of the proposed Budd Road Woodlands Park for the New Albany Floyd County Park Board, a cluster of about 12 Harvey's buttercup were found by Dr. David W. Taylor. Thomas found an additional cluster a few days later. The sites are on an upper, sparsely wooded ridge of the knobs in the segment of the park to be preserved by a forest management and conservation easement in favor of *The Nature Conservancy*.

Valerianella chenopodifolia (Pursh) DC. (Valerianaceae). Goosefoot cornsalad. During the 2003 season a small population was found by Thomas in Jefferson County near the Splinter Ridge WMA. Populations were later found by Curtis at two sites in Harrison County, one at Tobacco Landing along the Ohio River, and a much larger population at Harrison-Crawford State Forest. In the 2004 season yet another population was found roadside in Harrison County just west of Mauckport.

Verbesina virginica L. (Asteraceae). Frosted. Several plants were found by Thomas along the Ohio River at Old Dam 44 park/boat

ramp in Crawford County just west of the mouth of the Blue River.

INDIANA STATE THREATENED (ST)

Strophostyles leiosperma (Torr. & A. Gray) Piper (Fabaceae). Small-flowered woolly-bean. A small colony was located on the Indiana University Southeast campus in Floyd County.

INDIANA STATE RARE (SR)

Clematis pitcheri Torr. & A. Gray (Ranunculaceae). Pitcher's leatherflower. Found along the higher banks of Mosquito Creek north of New Boston in Harrison County.

Ludwigia decurrens Walter (Onagraceae). Primrose-willow. This species was found to be occasional along the Ohio River floodplain in both Harrison and Crawford counties.

Sagittaria australis (J.G. Sm.) Small (Alismataceae). Long-beaked arrowhead. A small colony of this species was found in a New Albany city park, Floyd County.

Tragia cordata Michx. (Euphorbiaceae). Heart-leaved noseburn. Found along the roadside at Spring Mill State Park in Lawrence County.

INDIANA STATE WATCH LIST (WL)

Veronica anagallis-aquatica L. (Scrophulariaceae). Water speedwell. This plant was found at two sites along the Ohio River floodplain in the New Albany area, Floyd County, and was also collected from the rocky bed of Indian Creek in downtown Corydon, Harrison County.

ACKNOWLEDGMENTS

We wish to thank Dr. David W. Taylor, Curator of the Indiana University Southeast Herbarium (JEF), for use of the facilities and his encouragement. We thank Michael A. Homoya, Botanist, and others in the Indiana Department of Natural Resources for their continual encouragement and assistance in the search for listed species in southern Indiana and their concern for the preservation of our natural heritage. Thanks also to Gerald J. Pagac, Director of the Division of State Parks and Reservoirs, for providing a collection permit to Maxwell for Charlestown State Park and to Ben Hubbard, Program Director Indiana Division of Forestry, who provided a collection permit for Clark and Harrison-Crawford State Forests. We also appreciate the

cooperation of the following Property Managers: Larry Gray of Charlestown Park; Pete Thorn of Harrison-Crawford State Forest; and Walt Zak of Clark State Forest. Special thanks to Drs. George and Kay Yatskievych of the Missouri Botanical Garden for their ongoing help in determining and confirming identifications of Indiana flora. Thanks also to Dr. Lytton Musselman of Old Dominion University for his *Cuscuta* determination.

LITERATURE CITED

- Aldrich, J.R., J.A. Bacone & M.A. Homoya. 1986. List of extirpated, endangered, threatened, and rare vascular plants in Indiana: An update. *Proceedings of the Indiana Academy of Science* 95: 413–41.
- Brummitt, R.K. & C.E. Powell. 1992. *Authors of Plant Names*. Royal Botanic Gardens, Kew.
- Deam, C.C. 1940. *Flora of Indiana*. Department of Conservation, Indianapolis, Indiana. 1236 pp.
- Division of Nature Preserves. 1996. Endangered, threatened, and rare vascular plant species documented from Indiana. Web site, <http://www.in.gov/dnr/naturepr/endanger/plant.html> Indianapolis, Indiana.
- Gleason, H.A. & A. Cronquist. 1991. *Manual of the Vascular Plants of Northeastern United States and adjacent Canada*. 2nd ed. New York Botanic Gardens, Bronx, New York. 910 pp.
- Homoya, M.A., D.B. Abrell, J.R. Aldrich & T.W. Post. 1985. The natural regions of Indiana. *Proceedings of the Indiana Academy of Science* 94: 245–268.
- Maxwell, R.H. 1981. Indiana Plant Distribution Records. *Proceedings of the Indiana Academy of Science* 91:502–503.
- Maxwell, R.H. & W.E. Thomas. 2003. Distribution Records of Southern Indiana Vascular Plants. *Proceedings of the Indiana Academy of Science* 112 (1):22–28.
- Mohlenbrock, R.H. 1986. *Guide to the Vascular Flora of Illinois*. Southern Illinois University Press, Carbondale & Edwardsville, Illinois. 507 pp.
- Yatskievych, K. 2000. *Field Guide to Indiana Wildflowers*. Indiana University Press. Bloomington and Indianapolis. 357 pp.

Manuscript received 19 January 2005, revised 9 February 2005.