2003. Proceedings of the Indiana Academy of Science 112(1):22–28

DISTRIBUTION RECORDS OF SOUTHERN INDIANA VASCULAR PLANTS

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

ABSTRACT. Collections in the Indiana University Southeast Herbarium were reexamined and entered into a database. New and old collections yielded over 100 new vascular plant county records for Clark, Crawford, Floyd, and Harrison Counties in southern Indiana. Indiana vascular species listed as extirpated (SX), endangered (SE), threatened (ST), or rare (SR) are noted. Others species which 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 Washington, Scott, and Perry 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, the Scottsburg Lowland and Muscatatuck Flats and Canyon Sections of the Bluegrass Natural Region, and the Shawnee Hills Natural Region (Homoya et al. 1985). The Indiana University Southeast Herbarium is in the process of creating an online database of its vascular plant collection at www.ius.edu/biology/herbarium/homepage.stm.

Ongoing collecting and review of existing collections in the herbarium have yielded over 100 new vascular plant county records since the publication of the last distribution list from the Indiana University Southeast Herbarium (Maxwell & Emmert 1995). Possible state records and noteworthy collections are listed alphabetically by their scientific names and briefly discussed, followed by a listing of state endangered, threatened, and rare species. Table 1 includes distribution records for Clark, Crawford, Floyd, and Harrison Counties with their collection vouchers. Nomenclature conforms primarily to the *Field Guide to Indiana Wildflowers* (Yatskievych 2000), with authors of plant names, following Brummitt & Powell (1992). Some nomenclature, primarily ferns, grasses, and common names cited, is from Mohlenbrock (1986), Gleason & Cronquist (1991), Homoya (1993) and Yatskievych (2000).

Determination of species status follows the Indiana Natural Heritage Data Center Endangered, Threatened and Rare Vascular Plants list, Indiana, from the Department of Natural Resources (DNR), Nature Preserves (27 January 1998). County status was also determined from the DNR, Nature Preserves web site, www.in.gov/dnr/naturepr (16 November 1999).

Former and present collectors include Indiana University Southeast students, the authors, several volunteers, Ray Weatherholt and several of his biology students from Floyd Central High School.

METHODS

Sites of listed species are reported to Indiana DNR, Nature Preserves. Vouchers are currently held at the Indiana University Southeast Herbarium. Some collections are sent to the DNR, Nature Preserves for confirmation by Michael A. Homoya, DNR Botanist, as well as by George and Kay Yatskievych at the Missouri Botanical Garden. 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. A native of Asia which was introduced into Kentucky

(Gleason & Cronquist 1991). Small, shrubby plants, common along the upper floodplain slopes and banks of the Ohio River in the Indiana counties across from Louisville, Kentucky. Colonies extend back from the river and down river to the west. We consider "W.E. Thomas 470" from Crawford County the state record voucher.

Egeria densa Planch. (Hydrocharitaceae). Brazilian Water-weed. The state record, "W.E. Thomas 294," was collected in shallow water from Wyandotte Lake in the Harrison-Crawford State forest. An aquarium plant "that has become naturalized in various localities in the United States, primarily in the southeast" (Beal & Thieret 1986).

Clematis terniflora DC. (= *C. dioscoreifolia* Levi. & Vaniot) (Ranunculaceae). A native of Japan which appears occasionally with other vines along the Ohio River.

Fatoua villosa (Thunb.) Nakai (Moraceae). Hairy Crabweed, Mulberry Weed. Reported in *Flora of North America* (3):390.1997, but neither the voucher nor the author of the Indiana report was identified (K. Yatskievych pers. commun.). The Floyd County record, "Maxwell *s.n.*, 9/20/1995" validates the FNA report and can be listed as the state record voucher. A native of tropical Asia, two plants were collected in a New Albany yard in 1995. We know of no other reports in Indiana.

Humulus japonicus Siebold & Zucc. (Moraceae). Japanese Hops. An introduced native of East Asia. The vine is fairly common along roadsides next to the Ohio River.

Lespedeza bicolor Turcz. (Fabaceae). Bicolor Lezpedeza. Two small shrubs were found in the open field northeast of the old black powder plant at Charlestown State Park. Reported for Indiana in the *Proceedings of the Indiana Academy of Science*, 1953. The state record voucher collected by "Buser & Ahles *s.n.*" in Fountain County is probably in the University of Illinois Herbarium at Urbana-Champaign.

Liparis loeselii (L.) Rich. (Orchidaceae). Loesel's Twayblade. Found by Homoya in Jackson County on the Muscatatuck National Wildlife Refuge (1990). Thomas discovered a population of about 14 plants distributed in the lower end of a seep in Charlestown State Park off Trail 1. This Clark County population represents a further southern extension as suggested by Homoya (1993).

Melothria pendula L. (Cucurbitaceae). Creeping Cucumber. This vine was considered state extirpated (SX) until three sites were discovered by Thomas in Charlestown State Park in 2000. The vines seemed to be thriving in spite of being in competitive habitats: a roadside ditch, an open disturbed area, and the edge of the escarpment over Fourteen Mile Creek. Since 2000 the Creeping Cucumber has been found in numerous sites throughout Charlestown State Park. It has also been found in roadside ditches in Floyd County along the lower edges of the knobs beside the Ohio River floodplain.

Mentha x rotundifolia (L.) Huds. (Lamiaceae). Apple Mint. A possible hybrid for southern Indiana. Several other collections have been made of this mint (Yatskievych 2000). Its occurrence in the state may be more common than the current reports indicate.

Orthodon dianthera (Buch.-Ham.) Hand. Mazz. (= *Mosla dianthera* (Buch.-Ham. ex Roxb.) Maxim) (Lamiaceae). A native of East Asia, established in moist places in the southeast (Gleason & Cronquist 1991). Recorded for Indiana in Kartesz & Meachan's 1999 Synthesis without a reference (K. Yatskievych pers. commun.). Homoya was aware of a site in the Harrison-Crawford State Forest and made a collection 26 September 1997 in Harrison County. The Homoya collection is the state record and "W.E. Thomas 36," a second collection. Thomas reports the population expanding in open areas left by logging at two different sites in Harrison-Crawford State Forest. This may be another species moving up from Kentucky and becoming common in southern Indiana.

Packera anonyma (A.W. Wood) W.A. Weber & Á. Löve (= *Senecio anonymous* A. Wood, *S. smallii* Britt.) (Asteraceae). Occasional on thin soil over a limestone ledge in Charlestown State Park. Perhaps a recent range expansion phenomenon (Homoya & Hedge 1990). Indiana Watch List (Yatskievych 2000).

Papaver dubium L. (Papaveraceae). Garden Poppy. The collection "Maxwell 3166." is the second report of the Garden Poppy along a different railroad track in Clark County. About 15 plants were noted along the tracks about 2½ km. north of highway I-265 along State Road 62 in 1998, but this second colony did not persist probably because of herbicide

Table 1.—State and county records. Abbreviations for species status are: SE = State Endangered, ST = State Threatened, SR = State Rare. Plant records without a number are indicated by *s.n.* = (*sine numero*) without a number, followed by the collection date.

Species	Family	County, collector and number
Acalypha gracilens A. Gray	Euphorbiaceae	Clark, Maxwell 3351
Acalypha deamii (Weath.) Ahles, (ST)	Euphorbiaceae	Harrison, W.E. Thomas 38
Achyranthes japonica (Miq.) Nakai	Amaranthaceae	Clark, W.E. Thomas 511; Crawford, W.E. Thomas 470; Floyd, W.E. Thomas 536
Aesculus pavia L.	Hippocastanceae	Floyd, Maxwell 3075
Albizia julibrissin Duraz.	Mimosaceae	Floyd, Boha & Chanley 8
Alisma subcordatum Raf.	Alismaceae	Harrison, R. Schoen *s.n.*, 21 July 1972
Amaranthus retroflexus L.	Amaranthaceae	Floyd, Weatherholt 1526
Ambrosia trifida L.	Asteraceae	Harrison, R. Schoen 59
Ammania robusta Heer & Regel	Lythraceae	Floyd, W.E. Thomas 28
Amorpha fruticosa L.	Fabaceae	Floyd, Schoen *s.n.*, 2 June 1972
Amsonia tabernaemontana Walter	Apocynaceae	Harrison, R. Schoen *s.n.*, 11 May 1972
Aquilegia canadensis L.	Ranunculaceae	Floyd, Weatherholt 880
Artemisia annua L.	Asteraceae	Clark, W.E. Thomas 30; Floyd, W.E. Thomas 635
Artemisia ludoviciana Nutt.	Asteraceae	Harrison, R. Schoen *s.n.*, 24 August 1972
Artemisia vulgaris L.	Asteraceae	Floyd, Maxwell 1280
Asclepias purpurascens L.	Asclepiadaceae	Floyd, S. Newman 113
Asplenium bradleyi D.C. Eaton (SE)	Aspleniaceae	Crawford, W.E. Thomas 159
Avena sativa L.	Poaceae	Floyd, Weatherholt 1561
Buglossoides arvense (L.) I.M. Johnst. (= *Lithospermum arvense* L.)	Boraginaceae	Floyd, Maxwell 3484
Capsella bursa-pastoris (L.) Medik.	Brassicaceae	Floyd, J.A. Kruer Jr. 90
Cardamine hirsuta L.	Brassicaceae	Floyd, Maxwell 2543
Cardamine angustata O.E. Schultz (= *Dentaria heterophylla* Nutt.)	Brassicaceae	Harrison, W.E. Thomas 157
Clematis terniflora D.C.	Ranunculaceae	Floyd, W.E. Thomas 17
Diodia virginiana L. (ST)	Rubiaceae	Floyd, W.E. Thomas 1; Clark, W.E. Thomas 335; Crawford, W.E. Thomas 435
Draba brachycarpa Nutt. ex Torr. & A. Gray	Brassicaceae	Clark, W.E. Thomas 156
Egeria densa Planch.	Hydrocharitaceae	Crawford, W.E. Thomas 294
Enemion biternatum Raf. (= *Isopyrum biternatum* (Raf.) Torr. & Gray)	Ranunculaceae	Floyd, Weatherholt 799
Equisetum arvense L.	Equisetaceae	Floyd, Weatherhold 845
Erianthus alopecuroides (L.) Ell.	Poaceae	Harrison, R. Schoen 47
Erythronium albidum Nutt.	Liliaceae	Floyd, Weatherholt 794
Erythronium americanum Ker Gawl.	Liliaceae	Floyd, Gohmann & Weatherholt 32
Fatoua villosa (Thunb.) Nakai	Moraceae	Floyd, Maxwell *s.n.*, 9/20/1995
Gymnocladus dioica (L.) K. Koch.	Caesalpiniaceae	Floyd, N.A. Myers 11
Holosteum umbellatum L.	Caryophyllaceae	Clark, Maxwell & Thomas 3197
Houstonia pusilla Schoepf	Rubiaceae	Clark, W.E. Thomas 62; Floyd, Maxwell 3483; Harrison, W.E. Thomas 58
Humulus japonicus Siebold & Zucc.	Moraceae	Clark, Reported by the Adams (1993); Crawford, W.E. Thomas 23; Floyd, W.E. Thomas 285
Hypochaeris radicata L.	Asteraceae	Clark, W.E. Thomas 340
Iva annua L. (= *I. ciliata* Willd. in Deam (1940))	Asteraceae	Clark, W.E. Thomas 18; Crawford, W.E. Thomas 125; Harrison, W.E. Thomas 495
Kickxia elatine (L.) Dumort	Scropulariaceae	Clark, Gilbert 105
Koelreuteria paniculata Laxm.	Sapindaceae	Floyd, F. Bierman 119

Table 1.—Continued.

Species	Family	County, collector and number
Lespedeza bicolor Turcz.	Fabaceae	Clark, Maxwell 3373
Linaria vulgaris Mill.	Scropulariaceae	Clark, K.D. Bledsoe 80
Lindernia dubia (L.) Pennell var. *anagallidea* (Michx.) Cooperr.	Scropulariaceae	Floyd, W.E. Thomas 291; Harrison, W.E. Thomas 295
Lindernia dubia (L.) Pennell var. *dubia*	Scropulariaceae	Crawford, W.E. Thomas 24; Harrison, W.E. Thomas 131
Linum usitatissimum L.	Linaceae	Floyd, Maxwell 3183
Liparis loeselii (L.) Rich.	Orchidaceae	Clark, Maxwell & Thomas 3498
Melothria pendula L.	Cucurbitaceae	Clark, Maxwell 3355; Floyd, Maxwell 3447
Mentha x rotundifoia (L.) Huds.	Lamiaceae	Crawford, W.E. Thomas 112; Floyd, W.E. Thomas 371
Muscari botryoides (L.) Mill.	Liliaceae	Harrison, R. Schoen *s.n.*, 28 April 1972
Nasturtium officinale R. Br.	Brassicaceae	Harrison, R. Schoen *s.n.*, 11 June 1972
Nothoscordum bivale (L.) Britton (SR)	Liliaceae	Crawford, W.E. Thomas 182
Oenothera biennis L. (= *O. pycnocarpa* Atkinson & Bartlett)	Onagraceae	Harrison, R. Schoen 36
Oenothera laciniata Hill	Onagraceae	Floyd, J.A.M.(? Illegible) 8
Oenothera pilosella Raf.	Onagraceae	Floyd, K. Heavrin 103
Osmorhiza longistylis (Torr.) D.C.	Apiaceae	Harrison, R. Schoen *s.n.*, 15 May 1972
Oxalis illinoensis Schwegman (SR)	Oxalidaceae	Clark, Maxwell 3432
Packera anonyma (A.W. Wood) W.A. Weber & Á. Löve	Asteraceae	Clark, Maxwell & Thomas 3492
Panicum nitidum Lam.	Poaceae	Floyd, R. Schoen 14
Pellaea glabella Mett. ex Kuhn	Adiantaceae	Crawford, W.E. Thomas 185
Penstemon digitalis Nutt. ex Sims	Scropulariaceae	Floyd, Hobson 96
Phleum pratense L.	Poaceae	Floyd, Barger & Weatherholt 72
Phlox divaricata L.	Polemoniaceae	Floyd, F. Gohmann 23
Platanthera lacera G. Don	Orchidaceae	Clark, Maxwell & Thomas observed
Platanus occidentalis L.	Platanaceae	Clark, Maxwell 1706
Polygonum arenastrum Jord. ex Boreau	Polygonaceae	Harrison, W.E. Thomas 42
Polygonum lapathifolium L.	Polygonaceae	Floyd, G. Doyle 7
Pyrrhopappus carolinianus (Walter) D.C.	Asteraceae	Clark, W.E. Thomas 5; Harrison, W.E. Thomas 272
Ranunculus repens L.	Ranunculaceae	Floyd, Weatherholt 1012
Ratibida columnifera (Nutt.) Woot. & Standl.	Asteraceae	Floyd, Maxwell 3337
Robinia hispida L.	Fabaceae	Clark, S. Newman 61
Rubus occidentalis L.	Rosaceae	Harrison, Conrad 71
Rumex obtusifolius L.	Polygonaceae	Clark, Megraw 40
Salix babylonica L.	Salicaceae	Floyd, Chambers 51
Salix exigua Nutt. (= *S. interior* Rowlee)	Salicaceae	Floyd, Bennett 2
Selaginella eclipes Buck	Selaginellaceae	Clark, Maxwell 3420; Floyd, Maxwell 3476
Sibara virginica (L.) Rollins	Brassicaceae	Clark, Maxwell 3478
Sida spinosa L.	Malvaceae	Harrison, S. Lawton 88
Solanum sarachoides Sendtner	Solanaceae	Clark, Maxwell 3367
Spermacoce glabra Michx.	Rubiaceae	Floyd, W.E. Thomas 3
Spiranthes vernalis Engelm. & A. Gray (SE)	Orchidaceae	Clark, W.E. Thomas 332
Thlaspi arvense L.	Brassicaceae	Harrison, W.E. Thomas 160
Tragia cordata Michx. (SR)	Euphorbiaceae	Clark, observed by Homoya
Typha angustifolia L.	Typhaceae	Floyd, Weatherholt 1573
Viola lanceolata L.	Violaceae	Harrison, R. Schoen *s.n.*, 19 May, 1972
Woodsia obtusa (Spreng.) Torrey	Aspleniaceae	Clark, Maxwell 1534

spraying along the right-of-way. The collection "W.E. Thomas 271," along State Road 31 north of Speed, indicates the initial Clark County colony is persisting and perhaps expanding in the much wider strip between State Road 31 and the railroad track. Its occurrence in the state may be more common than reports indicate.

Platanthera lacera (Michx.) G. Don. (Orchidaceae). Green Fringed Orchid. This orchid is the most common *Platanthera* in Indiana (Homoya 1993), but is primarily found in the northern part of the state. A single plant was discovered by Thomas in the edge of a wet depression off Jersey Avenue east of the current Charlestown State Park boundary in an area expected to become annexed to the park. A photo voucher was taken 6 July 2002. This report indicates a range extension to the south as predicted by Homoya (1993). Indiana Watch List (Yatskievych 2000).

Pycnanthemum muticum (Michx.) Pers. (Lamiaceae). Mountain Mint. The state record collector, K.F. Duffy, reports colonies in full sun, in poor clay soil next to a pond in a Harrison County hardwood forest. Deam (1940) excludes the species, citing reports, but no specimens. Schneck's report (Deam 1940) for the Lower Wabash Valley is probably correct. Mohlenbrock & Ladd (1978) show distribution in Wabash County, Illinois, next to the Wabash River.

Duffy sent a collection, "K.F. Duffy *s.n.*, 21 September 2002," to Kay Yatskievych at the Missouri Botanical Garden for verification; and this becomes the Indiana voucher specimen for the species and the county record. Our specimen, "K.F. Duffy 1," is a later collection from the same population.

Selaginella eclipes Buck (Sellaginellaceae). Small Spikemoss. First thought to be *S. apoda* (L.) Fern.(SE), later determined by Homoya as *S. eclipes*, and also confirmed by G. Yatskievych. Occasional to locally common in Charlestown State Park.

Solanum sarachoides Sendter (Solanaceae). Hairy Nightshade. A Gastony collection, "Gastony *s.n.*, 17 July 1985, Fee Lane and Highway 46 Bypass, Monroe County, Bloomington, was discovered in the Indiana University Herbarium. This may be the state record. The Gastony collection . . . "was apparently an escape to a roadside that was some distance from the experimental field" (K. Yatskievych pers. commun.). The experimental field refers to where Dr. Charles B. Heiser, Jr., of Indiana University carried out some of his well-known hybridization work with sunflowers, nightshades and domestic plants. Heiser (1969) refers to using *Solanum sarachoides* in his crosses to rediscover the "wonderberry."

The "Maxwell 3367, 25 August 2000," collection from Charlestown State Park would be a second report. This introduced weed was found in a disturbed area of the park and is persisting. However, it does not show the invasive capacity of other introduced species in the park.

INDIANA STATE ENDANGERED (SE)

Asplenium bradleyi D.C. Eaton (Aspleniaceae). Bradley's Spleenwort. Noted in Dubois County, 23 October 1984, by Homoya & Abrell (1986). "W.E. Thomas 159" was collected from a population of 13–15 plants scattered on several sandstone boulders in an open area near Wyandotte Cave in the Harrison-Crawford State Forest.

Gentiana villosa L. (Gentianaceae). Striped Gentian. Deam (1940) reports two collections from southeast Harrison County in black and white oak woods. A Harrison County site was located during a DNR conducted survey for the Indiana Natural Heritage Program. A fragment, "W.E. Thomas 37," was collected in the Harrison County part of the Harrison-Crawford State Forest in a cedar woods along Cold Friday Road. Thomas reports a scattered population of about 30–40 plants in the woods. These sites are in Harrison County, but we cannot be sure they are the same.

INDIANA STATE THREATENED (ST)

Acalypha deamii (Weath.) Ahles. (= *A. virginica* L. var. *deamii* Weath.) (Euphorbiaceae). Mercury. Michael Homoya identified this species in October 1994, in the Jenny Lind Run area of the Indiana Army Ammunition Plant. A few plants were also found on the south bank of Fourteen Mile Creek near the Ohio River. Over the last few years sizable populations were found by Thomas in Floyd County, along the Ohio River in New Albany, and Harrison and Crawford Counties. Maxwell ("Maxwell 3409, 10/19/2000") found a population of about 100 plants on a Fourteen Mile Creek sand bank near the north bridge

in what is now Charlestown State Park. Additional plants have turned up in the park along Trails 1, 2 and 3. It now appears so common in our area new sites are not reported to DNR, Nature Preserves.

Diodia virginiana L. (Rubiaceae). Buttonweed. Collected from large colonies along the Ohio River in Floyd and Crawford Counties, and also found along the wet perimeter of Deam Lake in Clark County. See Homoya et al. (1995) for additional locations. Now believed common along the Ohio River.

INDIANA STATE RARE (SR)

Gentiana flavida A. Gray (*G. alba* Muhl.) (Gentianaceae). Yellowish Gentian, Pale Gentian. An Indiana University Southeast Herbarium collection, "C.W. Henson 43, 19 Sept. 1975," from the Harrison-Crawford State Forest in a dry, oak woods clearing, was determined *Gentiana villosa*. Reexamination, as suggested by Homoya, showed it to be *Gentiana flavida*. The exact county distribution is unknown.

Northoscordum bivalve (L.) Britton (Liliaceae). Crow Poison. A colony of perhaps 60 plants was found on a low rock bluff along State Road 62 within Harrison-Crawford State Forest, west of Wyandotte Lake.

Oxalis illinoensis Schwegman (Oxalidaceae). Illinois Woodsorrel. Two large Clark County populations were pointed out by Homoya about 1994 on the wooded floor of Lick Creek Ravine, in what is now Charlestown State Park. At that time, one population contained about 100 individuals and the other 500–1000. Since then several additional clusters have been found in the park along with a population of about 2000 individuals spreading down from the upper bluff on the east side of Lick Creek towards Fourteen Mile Creek. Two colonies, one with perhaps 100 plants, the other smaller with perhaps 20 plants, were found by Thomas in Crawford County. Both these sites were within the Harrison-Crawford State Forest along the upper tributaries of Dry Run Creek.

The Illinois Woodsorrel has leaflets shallowly lobed with green margins; the Big Yellow Woodsorrel (*Oxalis grandis* Small) has leaflets deeply lobed with purplish-brown margins (Yatskievych 2000). Other characteristics are similar except the Illinois Woodsorrel has a small tuberous root (Homoya pers. commun.). We believe the Illinois Woodsorrel is more common than the Big Yellow Woodsorrel in our south central Indiana area.

Spiranthes vernalis Engelm. & A. Gray (Orchidaceae). Spring Ladies' Tresses, Grass-leaved Ladies' tresses. Observed by Thomas & Howell Curtis, Charlestown State Park in a disturbed area north of Trail 1 parking. "W.E. Thomas 332" serves as a Clark County voucher.

Tragia cordata Michx. (Euphorbiaceae). Heart-leaved Noseburn. Homoya identified this vine in the rocky woods, north of the west little bluestem glade in Charlestown State Park.

ACKNOWLEDGMENTS

We wish to thank Dr. David W. Taylor, Curator of the Indiana University Southeast Herbarium, for his cooperation, use of the facilities, and continuing encouragement that collections and natural history have a place in current academia. We thank Michael A. Homoya and others in the Indiana DNR 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 Mr. Gerald J. Pagac, Director of the Division of State Parks and Reservoirs, for providing a collection permit to Maxwell for Charlestown State Park. We also greatly appreciate the cooperation of Larry Gray, property manager of Charlestown Park. We also thank Pete Thorn, property manager of Harrison-Crawford State Forest, for providing a collection permit to William E. Thomas to extend our survey. We also thank Kay and George Yatskievych of the Missouri Botanical Garden for their help in determining and confirming identifications of Indiana flora and sorting out the vouchers. We also thank our many former students for their collections as well as current collectors, students and volunteers. Although many student collections were mandatory and such collecting may now be considered an obsolete teaching method, they form an important segment of the Indiana University Southeast Herbarium. Once again, we thank Ray Weatherholt, long-time biology teacher at Floyd Central High School, now retired, for donating his collection to the herbarium. Thanks also to the reviewers and the editor for their helpful comments in revising our original manuscript.

LITERATURE CITED

Adams, W.R. & M.R. Adams. 1993. Flora of the Falls of the Ohio State Park and National Wildlife Conservation Area (A preliminary report). Unpublished.

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: 413–419.

Beal, E.O. & J.W. Thieret. 1986. Aquatic and Wetland Plants of Kentucky. Kentucky Nature Preserves Commission, Scientific and Technical Series Number 5. Frankfort, Kentucky. 315 pp.

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.

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.

Heiser, C.B. Jr. 1969. Nightshades, The Paradoxical Plants. W.H. Freeman & Company. San Francisco, California. 200 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.

Homoya, M.A. & D.B. Abrell. 1986. Recent additions to the flora of southern Indiana. Proceedings of the Indiana Academy of Science 95:429–432.

Homoya, M.A. & C.L. Hedge. 1990. Additions to the flora of southern Indiana, IV. Proceedings of the Indiana Academy of Science 99:67–71.

Homoya, M.A. 1993. Orchids of Indiana. Indiana Academy of Science. Distributed by Indiana University Press, Bloomington and Indianapolis. 276 pp.

Homoya, M.A., D.B. Abrell, C.L. Hedge & R.L. Hedge. 1995. Additions to the flora of southern Indiana, V and VI. Proceedings of the Indiana Academy of Science 104:213–221.

Kartesz, J.T. & C.A. Meachan. 1999. Synthesis of the North American Flora. Version 1.0 CD. North Carolina Botanical Garden. Chapel Hill.

Maxwell, R.H. & Gail A. Emmert. 1995. Southern Indiana plant distribution records and notes on the endangered, threatened, and rare vascular plant species in the proposed state park areas of the Indiana Army Ammunition Plant. Proceedings of the Indiana Academy of Science 104(3–4):223–232.

Mohlenbrock, R.H. 1986. Guide to the Vascular Flora of Illinois. Southern Illinois University Press, Carbondale & Edwardsville, Illinois. 507 pp.

Mohlenbrock, R.H. & D.M. Ladd. 1978. Distribution of Illinois Vascular Plants. Southern Illinois University Press, Carbondale & Edwardsville, Illinois. 282 pp.

Yatskievych, K. 2000. Field Guide to Indiana Wildflowers, Indiana University Press, Bloomington and Indianapolis. 357 pp.

Manuscript received 3 December 2002, revised 16 March 2003.