

More New Vascular Plant Distribution Records for Tippecanoe and Other Counties in Indiana

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In 1983, sixty-nine species and two varieties of vascular plants were reported at these meetings as new to the flora of Tippecanoe County, Indiana (5). The majority of these were either aquatics or weeds of probably recent arrival. Eleven new families were reported also (5). At that time, the flora list was being compiled as a reference for botany teaching at Purdue University. Since then, it has become a basis for two other interests. One attempts to build on the Indiana Heritage Program. Dr. George Parker of Purdue University will use this list as a database in which county distribution data can be inserted, not only for the endangered or threatened plants of state interest, but also for other ecologically significant categories of plants, such as aquatic or prairie plants. This paper includes 25 more additions and some corrections for the Tippecanoe County vascular plant checklist.

The second interest is cooperation with the Arthur Herbarium at Purdue University. The most recent checklist of Indiana rust fungi, the special province of this herbarium, is about 65 years old (4). As rust identifications are often easier if the host plant is identified first, we must have complete host checklists. We are compiling county floras for a representative sample of Indiana counties: one northwest prairie county (White), one northeast lake county (Kosciusko), one eastern agricultural county (Henry or Randolph), one southern upland county (Lawrence), a southwestern (Posey) and a southeastern (Franklin) county. Preliminary visits to White and Kosciusko counties have resulted in the discovery of 54 new county records for the host plants. Incidental survey of Benton, Fountain, and Warren counties resulted in another 20 new county records.

A few additional phanerogamic records are based on specimens sent to the Plant Disease and Weed Clinic at Purdue University for identification. These include one species each from Allen, Carroll, Elkhart, Floyd, Greene, Henry, Jackson, Orange, Pulaski, Vermilion, and Washington counties, plus two from Daviess county. If the correspondent requested weed control recommendations for the plant submitted, I still listed them if it seemed unlikely the plant (e.g., *Cirsium arvense*) would be completely extirpated from that county even if our specialists' recommendations were followed most stringently. One important such record was of *Lygodesmia juncea* (Asteraceae), which appeared as an incomplete specimen from a pasture near Bristol in Elkhart County. If it persists, it would be a new genus for the state of Indiana.

Nomenclature is according to Crovello *et al.* (1); species are listed by the order in which they appear in Deam (2). Most voucher specimens are in the Kriebel Herbarium (PUL) of Purdue University, West Lafayette, IN; a few are hosts of rust fungi and the specimens are in the Arthur Herbarium (PUR), as noted below.

Notes on New Records

Cichorium intybus, new for Kosciusko County, and *Centaurea maculosa*, new for Kosciusko and Tippecanoe Counties, show some evidence of the human facility

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for spreading weeds. The chicory was found only within a few blocks of U.S. Highway 30 in Warsaw, and the spotted knapweed only in the railroad yards at the west end of Warsaw and at the north end of Lafayette. The former site also had *Kochia scoparia*, another new Kosciusko County record. *Kochia*, reported two years ago (5) as a new Tippecanoe County record, now occurs in numerous locations in Tippecanoe County, even though it is a species Deam (2) believed was "sporadic" and would "never become . . . established in the state." In the spirit of Muehlenbach (7) who spent 30 years searching for new adventive species along the railroads of St. Louis, MO, Indiana botanists should make records of right-of-way plants. These areas are simultaneously the last holdout for some of our native species and the first footholds for new invaders. The first Kosciusko County plants of *Conium maculatum* are around the old railroad station in Leesburg. The old Big Four tracks west of West Lafayette produced *Froehlichia gracilis* and the Monon line north of Ash Grove provided *Vernonia missurica*, two more previously unrecorded species for Tippecanoe County.

Lonicera japonica was excluded by Deam (2), along with all other species of honeysuckle, from Tippecanoe County and, indeed, from most of Indiana as mere "escapes" until it could be shown to be more established. The numerous whole hillsides now densely covered with this species qualify it as established in Tippecanoe County and, thus, for inclusion on the list. However, the status of *Nelumbo lutea* (Willd.) Pers., reported by McCain (5), should be downgraded to "introduced"—the colony has enlarged but not spread to new locations.

Notes on Corrections

Previous reports for Tippecanoe County were re-examined and their current validity determined. A few should be excluded. For example, *Ambrosia bidentata* Michx. was collected once in the county, according to a specimen in the Kriebel Herbarium. There are also single specimens for *Datura innoxia* P. Mill., *Hieracium venosum* L., *Symphytum officinale* L., and *Vernonia arkansana* DC. Some of these probably were just escapes. Even though there are voucher specimens, they should remain only as historical records until there is confirmation that they persist in the county. The specimens of *Cystopteris fragilis* (L.) Bernh. var. *protrusa* Weatherby lack the diagnostic parts (rhizomes), so only *C. fragilis* var. *fragilis* can be accepted for now.

Botrychium dissectum Spreng. var. *tenuifolium* (Underw.) Farw. is a southern form reported only once for Tippecanoe County, in a Ph.D. thesis (8). However, the voucher specimen in PUL is a better fit for the more-to-be-expected *B. dissectum* var. *obliquum* (Muhl.) Fern. (which was not listed in this thesis). Two other theses report *Melica mutica* Walt. (3) and *Plantago pusilla* Nutt. (6) for Tippecanoe County. The *Melica* species could conceivably be in the county. However, the PUL voucher specimen, from the David Ross Biological Reserve, is actually a bromegrass (possibly *Bromus japonicus* Thunb. ex Murr.). The shattering of most of the upper florets from each spikelet gives the specimen a superficial resemblance to a "two-flowered melic" but the keeled lemmas, with awns arising from beneath the bifid teeth, and the much larger general form of the plant means *Bromus*. The plantain is actually a depauperate *P. aristata* Michx., of the few-flowered, short form known to occur under certain poor conditions, and is north of the expected range for *P. pusilla*. These three identification errors all are understandable mistakes; the authors should be commended for observing the voucher system which permitted reexamination of their results (specimens).

Other New Records

Thelypteris palustris Schott. var. *pubescens* (Lawson) Fern. - Tippecanoe Co.;
Typha angustifolia L. - Tippecanoe; *Potamogeton pectinatus* L. - Tippecanoe; *Bromus*

inermis Leys. - White; *Vulpia octoflora* (Walt.) Rydb. var. *octoflora* - Warren; *Poa chapmanniana* Scribn. - Tippecanoe; *Dactylis glomerata* L. - Kosciusko, White; *Phleum pratense* L. - White; *Phalaris arundinacea* L. - Warren; *Andropogon virginicus* L. - Tippecanoe; *Scirpus americanus* Pers. - Tippecanoe(PUR); *Carex cephalophora* Willd. - Warren; *C. leavenworthii* Dewey - Warren; *C. mesochorea* Mack. - Warren; *C. festucacea* Willd. - Warren; *C. hirtifolia* Mack. - Warren; *C. projecta* Mack. - Tippecanoe; *C. swanii* (Fern.) Mack. - Warren; *Symplocarpus foetidus* (L.) Nutt. - White; *Wolffia columbiana* Karst. - Tippecanoe; *Commelina communis* L. - Kosciusko, White; *Juncus tenuis* Willd. var. *uniflorus* (Farw.) Farw. (*J. dudleyi* Wieg.) - Tippecanoe; *Hemerocallis fulva* (L.) L. - White; *Camassia scilloides* (Raf.) Cory - White; *Ornithogalum umbellatum* L. - Warren; *Asparagus officinalis* L. - Kosciusko; *Trillium flexipes* Raf. f. *walpolei* (Farw.) Fern. - Tippecanoe.

Salix humilis Marsh. - Tippecanoe; *S. bebbiana* Sarg. - Tippecanoe; *Maclura pomifera* (Raf.) Schneid. - Vermilion; *Humulus japonica* Sieb. & Zucc. - Daviess; *Urtica dioica* L. ssp. *gracilis* (Ait.) Seland var. *procera* (Muhl.) Weddell - White; *Rumex crispus* L. - White; *Polygonum cuspidatum* Sieb. & Zucc. - Tippecanoe; *Kochia scoparia* (L.) Schrad. - Kosciusko; *Amaranthus retroflexus* L. - White; *Froehlichia gracilis* (Hook.) Moq. - Tippecanoe; *Phytolacca americana* L. - White; *Stellaria media* (L.) Cyrillo - White; *Holosteum umbellatum* L. - Tippecanoe; *Silene noctiflora* L. - Kosciusko; *Ranunculus hispidus* Michx. - White; *Podophyllum peltatum* L. - White (PUR); *Lepidium campestre* (L.) R. Br. - White; *Thlaspi arvense* L. - Benton; *Alliaria petiolata* (Bieb.) Covara & Grande - White; *Brassica nigra* (L.) W.D.J. Koch - Kosciusko, White; *Hydrangea arborescens* L. var. *deamii* St. John - Tippecanoe (PUR); *Duchesnea indica* (Andr.) Focke - Allen (PUR).

Medicago sativa L. - Warren; *Melilotus alba* Medic. - White; *Trifolium repens* L. - Kosciusko, White; *T. pratense* L. - Kosciusko; *Lotus corniculatus* L. - White; *Robinia pseudoacacia* L. - Kosciusko; *Oxalis europaea* Jord. f. *cyrosa* (Small) Wieg. - Kosciusko; *Zanthoxylum americanum* P. Mill. - Warren; *Croton monanthogynus* Michx. - Fountain; *C. capitatus* Michx. - Washington (PUR); *Impatiens pallida* Nutt. - White; *Abutilon theophrasti* Medic. - White; *Hibiscus laevis* All. (*H. militaris* Cav.) - Tippecanoe; *H. trionum* L. - White; *Passiflora incarnata* L. - Jackson; *Conium maculatum* L. - Kosciusko, White; *Pastinaca sativa* L. - Kosciusko, White; *Aegopodium podagraria* L. - Benton.

Lysimachia thyriflora L. - Tippecanoe; *Fraxinus pennsylvanica* Marsh. - Warren; *F. profunda* (Bush) Bush - Tippecanoe; *Ipomoea nil* (L.) Roth. (*I. hederacea* Jacq.) - White; *Verbena urticifolia* L. var. *leiocarpa* Perry & Fern. - Kosciusko; *Lamium purpureum* L. - Kosciusko; *Blephilia ciliata* (L.) Benth. - Warren; *B. hirsuta* (Pursh) Benth. - Carroll, Fountain (PUR), Henry, Warren; *Solanum carolinense* L. - White; *Datura stramonium* L. - White; *Verbascum blattaria* L. f. *albiflora* (G. Don) House - Tippecanoe; *V. thapsus* L. - White; *Veronica chamaedrys* L. - Tippecanoe; *Plantago rugelii* Done. - White; *P. lanceolata* L. var. *lanceolata* - White; *Lonicera japonica* Thunb. - Tippecanoe; *Campanula aparinoides* Pursh - Benton; *Triodanis perfoliata* (L.) Nieuwland (*Specularia p.* (L.) A. DC.) - White.

Vernonia fasciculata Michx. - Tippecanoe; *V. missurica* Raf. - Tippecanoe; *Solidago rugosa* Mill. var. *rugosa* - Tippecanoe; *Iva annua* L. var. *annua* - Floyd; *Ambrosia bidentata* Michx. - Greene, Orange; *A. trifida* L. - White; *Xanthium strumarium* L. var. *canadense* (P. Mill.) Torr. & Gray - Tippecanoe; *Cirsium vulgare* (Savi) Tenore - Warren, White; *C. arvense* (L.) Scop. var. *horridum* Wimmer & Grab. - White (PUR); *C. altissimum* (L.) Spreng. - Daviess; *Centaurea maculosa* Lam. - Kosciusko, Pulaski, Tippecanoe; *Cichorium intybus* L. - Kosciusko; *Tragopogon dubius* Scop. - White; *Sonchus asper* (L.) Hill. - White.

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Literature Cited

1. Crovello, T. J., C. A. Keller, and J. T. Kartesz. 1983. The vascular plants of Indiana: a computer-based checklist. *American Midl. Nat.*, Univ. Notre Dame Press, South Bend, IN. 136 pp.
2. Deam, C. C. 1940. *Flora of Indiana*. Indiana Dept. of Conservation, Indianapolis, IN. 1236 pp.
3. de Langlade, R. A. 1961. The vegetation and flora of the Ross Biological Preserve. M.S. thesis, Purdue University.
4. Jackson, H. S. 1916-1921. The Uredinales of Indiana, I-III. *Proc. Indiana Acad. Sci.* 1915: 429-475 (1916); 1917: 133-137 (1918); 1920 165-182 (1921).
5. McCain, J. W. 1984. New vascular plant distribution records for Tippecanoe County, Indiana. *Proc. Indiana Acad. Sci.* 93 (1983): 335-337.
6. Miller, C. W. 1951. The vascular flora of the Ross Biological Reserve. M.S. thesis, Purdue University.
7. Muehlenbach, V. 1979. Contributions to the synanthropic (adventive) flora of the railroads in St. Louis, Missouri, U.S.A. *Annals Missouri Bot. Gard.* 66:1-108.
8. von Culin, H. J. 1973. Two decades of vegetational and floristic change in the Ross Biological Reserve, Tippecanoe County, Indiana. Ph.D. thesis, Purdue University.