A NEW SPECIES OF *HYPERICUM* (HYPERICACEAE) AND SOME NEW COMBINATIONS IN THE VASCULAR FLORA OF THE CHICAGO REGION

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ABSTRACT

Hypericum swinkianum, a new species of *Hypericum* L. Sect. *Myriandra* (Spach) R. Keller Subsect. *Centrosperma* R. Keller (Hypericaceae), is described from the western Great Lakes region. It differs from its closest relative, *Hypericum kalmianum* L., in having notably larger vegetative features, dichasia with more than 7 flowers, and a proclivity for acid sandy soils. In addition, 22 new combinations are provided for taxa in the genera *Dichanthelium, Eurybia, Eutrochium, Halerpestes, Hylodesmum, Minuartia, Nuttallanthus, Persicaria, Ranunculus, Salix,* and *Symphyotrichum*.

KEYWORDS: *Hypericum*, new species, new combinations

INTRODUCTION

Preparation of the forthcoming *Flora of the Chicago Region: A Floristic and Ecological Synthesis* (Wilhelm and Rericha, in press) has resulted in the recognition of a new species of *Hypericum* L. In addition, we wish to recognize a number of taxa that do not have names available in the genera we recognize. New combinations for them are effected here.

NEW SPECIES

Hypericum (Hypericaceae Juss.) is a largely temperate genus comprising about 490 species of annuals, perennials, shrubs, and trees (Robson 2015). The new species, like *Hypericum kalmianum* L., is assigned to Subsection *Centrosperma* R. Keller of the Section *Myriandra* (Spach) R. Keller, a group of 14 shrubby species (Robson 1996).

Description

Hypericum swinkianum Wilhelm & Rericha, sp. nov.

Frutex ramosissimus ad 1.8 m altus, cortex vestior exfoliata; folia coriacea, anguste usque late oblonga, latissima prope vel ultra medio, ad marginem infirme revoluta incrassatave, grandior 1–2 cm lata, 3.5–5 cm longa, plerumque

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TABLE 1. Characters that differentiate between *Hypericum swinkianum* and *H. kalmianum*. Measurements are given as the mean ± one standard deviation. Leaf measurements are based on the average of three of the larger cauline leaves on each of 194 specimens sampled.

Character	*H. swinkianum* (n=16)	*H. kalmianum* (n=178)
Leaf width	11.6 ± 1.4 mm	6.6 ± 1.6 mm
Leaf length	42.7 ± 5.8 mm	30.6 ± 5.9 mm
Length × width of leaf	499.7 ± 108.3 mm^2	206.3 ± 81.9 mm^2
Length of sepal of central floret	10.3 ± 1.2 mm	7.4 ± 1.6 mm
Flowers per dichasium	17 ± 8	6 ± 3

fasciculis axiliaribus; paginae foliorum adaxiales viridiae et abaxiales pallidiore; flores 3–3.5 cm in latitudinem, plerumque 7–31 in dichasia terminalia; sepala ovata rotundata, 9–12 mm longa; petala lutea, circum 1.5 cm longa, patientia, late obovata vel subrotundata, sepalis longiora multo; stamina numerosa, androecium 1.6–1.9 cm latis; styli 5; capsulae 5-partite.

Much-branched shrub to 1.8 m high, with exfoliating bark; leaves coriaceous, narrowly to broadly oblong, broadest at or near the middle, weakly revolute or thickened at the margins, the larger ones 1–2 cm wide, 3.5–5 cm long, usually with axillary fascicles; adaxial leaf surfaces green, the abaxial surfaces pale; flowers 3–3.5 cm in diameter, 7–31 in terminal dichasia; sepals rotund-ovate, 9–12 mm long; petals yellow, about 1.5 cm long, persistent, broadly ovate to subrotund, much longer than the sepals; stamens numerous, the androecium 1.6–1.9 cm across; styles 5; capsules 5-parted.

Table 1 shows features that differentiate *Hypericum swinkianum* Wilhelm & Rericha from *Hypericum kalmianum* L. The stature and vegetative measurements, the compound nature of the dichasium, and the notably different habitat suggest that *Hypericum swinkianum* is specifically distinct from *Hypericum kalmianum*. The vegetative measurements of the type specimen of *Hypericum kalmianum* [#943.2] that is depicted by The Linnean Society of London (2016) clearly lie within the range of specimens retained here as *Hypericum kalmianum*. Figures 1 and 2 are photographs of pressed specimens of the type collection of *Hypericum swinkianum*.

Type

Holotype: U.S.A., Illinois, Cook Co., in Thornton, at Jurgensen Prairie, July 8, 2012, *Rericha & Wilhelm 4126* (MOR); Isotypes: IND, MICH, WIS.

Etymology

Hypericum swinkianum is named in honor of Floyd A. Swink (1921–2000), who studied the natural history of the Chicago region for more than half a century and provided students of the region with numerous books and articles and outings on the local flora.

FIGURE 1. Pressed specimen of *Hypericum swinkianum*, Rericha & Wilhelm 4126 (MOR). Photo by L. Rericha.

Relationship

Hypericum swinkianum is in subsection Centrosperma, which is characterized as shrubs with deciduous leaves articulated at the base, prevailingly dichasial inflorescences, 5-parted flowers with mostly unequal deciduous sepals, 30–numerous deciduous stamens, 3–5 styles, and incompletely axile to parietal placentation. Robson (1996) recognizes 14 species in the subsection, including three subspecies of *Hypericum nitidum* Lam., which are distinguished largely on the

FIGURE 2. Pressed specimen of a dichasium of *Hypericum swinkianum*, Rericha & Wilhelm 4126 (MOR). Photo by L. Rericha.

basis of the shape of the leaf apex. There are three species in subsection Centrosperma in the Chicago region, which can be identified using the following key.

1. Gynoecia 3-merous; flowers 1–5 in lateral dichasia from the distal 2–4 axils .....**Hypericum prolificum** L.
1. Gynoecia prevailingly 5-merous; flowers 1–31 in terminal dichasia, nearly or quite absent from the penultimate axils.
   Larger leaves more than 10 mm wide, broadly obtuse, 3.5–5 cm long, the margins flat or scarcely revolute; dichasia prevailingly 15–31 flowered; larger sepals of proximal central flower 10–12 mm long at anthesis .....**Hypericum swinkianum** Wilhelm & Rericha
   Leaves less than 10 mm wide, obtuse to acute, 2.5–3.5 cm long, the margins usually markedly revolute; dichasia 1–7(–15)-flowered; larger sepals usually less than 10 mm long at anthesis .....**Hypericum kalmianum** L.

Even with the segregation of *Hypericum swinkianum, Hypericum kalmianum* remains a rather variable species. Typical *Hypericum kalmianum* has revolute, acute leaves less than 7 mm wide and 1–7-flowered dichasia. Plants from the region of glacial Lake Wisconsin appear to intergrade, and many have obtuse, scarcely revolute leaves 7–10 mm wide and up to 4 cm long, and 3–7 or rarely up to 15-flowered dichasia. Such plants are suggestive of *Hypericum swinkianum,* but are generally smaller-leaved or lack dichasia with more than 15 flowers or both.

Distribution and Habitat

Hypericum swinkianum typically occurs in acid wetlands and sand prairies. In Illinois and Indiana it is found in wet to mesic acid sand prairies, margins of sphagnum bogs, and swales in black oak savannas and sand flatwoods. These habitats in the Chicago region are restricted to older lake plain of the Glenwood and Calumet stages of glacial Lake Chicago and in the Kankakee Sands section. In Michigan, it occurs in a *Spartina*-dominated swale in a *Pinus banksiana–Quercus ellipsoidalis* savanna on an extensive sandy outwash plain in Cheboygan County. The other Michigan specimen, of Mecosta County, is along a road in an area of sandy-loamy till. Conversely, *Hypericum kalmianum* occurs in calcareous habitats: artesian fens, marly pannés, and along the Great Lakes in calcareous sandy swales. It is rare in calcareous mesic prairies of fine-textured soil. In west-central Wisconsin, *Hypericum kalmianum* also occurs in sand prairies with high-water tables that have developed upon sandy outwash in the depression of glacial Lake Wisconsin (Utech & Iltis 1970). It also occurs in sandy outwash at the base of bluffs along the Mississippi River and its tributaries in Wisconsin.

Additional Specimens

Illinois: Cook Co., moist sandy woods, Thornton, July 16, 1898, *Hill 115.1898* (ILL); sandy swamp, Thornton, July 15, 1939, *Fuller 1691* (ILLS, ISM); S. of Thornton-Lansing Road and W. of Calumet Expressway, September 16, 1959, *Winterringer 16453* (ISM); sand pit, woodland border, Thornton, July 17, 1963, *Evers 77218* (ILLS); Thorn Creek Forest Preserve, June 25, 1964, *Dolbeare 13* (ISM); Thorn Creek Forest Preserve, June 25, 1964, *Dolbeare 5186* (ILLS); Thornton Forest Preserve, July 26, 1973, *Shildneck 6182* (ISM); Thornton, at Jurgensen Prairie in wet-mesic sand prairie, August 19, 2009, *Rericha & Wilhelm 3821* (MOR); Thornton, at Jurgensen Prairie in wet-mesic sand prairie, July 8, 2011, *Rericha & Wilhelm 3980* (MOR).

Indiana: Marshall Co., along R. R. south of Culver, August 4, 1935, *McCoy 4185* (BUT); Porter Co., dunes near Mineral Springs, July 2, 1922, *Lyon s.n.* (IND); Starke Co., in an open and low sandy black and white oak woods on the southeast side of Bass Lake, August 22, 1916, *Deam 21033* (IND); in black-pin oak woods 2.5 miles northwest of North Judson, June 26, 1922, *Deam 36718* (NY); west of Ober in moist savanna, July 2, 2010, *Rericha & Wil-*

helm 3976, (MOR); at Hartz Lake in a peaty meadow, July 18, 2010, *Rericha & Wilhelm 3989* (MOR).

Michigan: Cheboygan Co., dryish *Spartina* meadow near upper edge of sandy depression in open Jack Pine-Hill's Oak stand, August 1, 2015, *Reznicek & Fawcett 12378* (MICH, MOR); Mecosta Co., Aetna Twp, 1 Mile Road at 220th Ave, 0.4 mi. south, east side, in dry roadside ditch, July 29, 2000, *Ross 722* (MICH).

NEW COMBINATIONS

The new combinations presented are treated in Wilhelm & Rericha (in press), either as a recognized taxonomic element or mentioned in a taxonomic discussion. Many represent transfers of infraspecific taxa to different genera or species. Others, such as *Dichanthelium deamii*, are recognized as locally distinct both morphologically and phytogeographically.

Dichanthelium deamii (Hitchc. & Chase) Wilhelm & Rericha, *comb. nov.*

Basionym: *Panicum deamii* Hitchc. & Chase in Deam, Grasses of Indiana 284, fig. 18, pl. 75, map 187. 1929. An endemic of northwest Indiana, the significance of this species heretofore has been unrecognized.

Dichanthelium depauperatum (Muhl.) Gould var. ***involutum*** (Torr.) Wilhelm & Rericha, *comb. nov*.

Basionym: *Panicum involutum* Torr., Fl. N. Middle United States 144. 1823.
Panicum depauperatum Muhl. var. *involutum* (Torr.) Alph. Wood, Class-book Bot. (ed. 1861) 786. 1861.

Dichanthelium huachucae (Ashe) Wilhelm & Rericha, *comb. nov*.

Basionym: *Panicum huachucae* Ashe, J. Elisha Mitchell Sci. Soc. 15:51. 1898. Although not recognized by contemporary students of the genus, this grass is quite distinct locally and is the least conservative element of the *Dichanthelium implicatum* complex.

Dichanthelium huachucae (Ashe) Wilhelm & Rericha) var. ***silvicola*** (Hitchc. & Chase) Wilhelm & Rericha, *comb. nov*.

Basionym: *Panicum huachucae* (Ashe) var. *silvicola* Hitchc. & Chase, Rhodora 10:64. 1908.

Dichanthelium sphaerocarpon (Elliott) Gould var. ***inflatum*** (Scribn. & J. G. Sm.) Wilhelm & Rericha, *comb. nov*.

Basionym: *Panicum inflatum* Scribn. & J. G. Sm., Cir. Div. Agrostol. U.S.D.A. 16:5. 1899.
Panicum sphaerocarpon Elliott subsp. *inflatum* (Scribn. & J. G. Sm.) Hitchc., Contr. U.S. Natl. Herb. 15: 253, fig. 275. 1910.
Panicum sphaerocarpon Elliott var. *inflatum* (Scribn. & J. G. Sm.) Hitchc., Man. Grasses U.S. 643, 913. 1935.

Dichanthelium tennesseense (Ashe) Wilhelm & Rericha, *comb. nov.*

Basionym: *Panicum tennesseense* Ashe, J. Elisha Mitchell Sci. Soc. 15:52. 1898. Although not recognized by contemporary students of the genus, this segregate of the *Dichanthelium implicatum* complex is quite distinctive locally and is confined to fen systems and wet calcareous prairies.

Dichanthelium tsugetorum (Nash) Wilhelm & Rericha*, comb. nov*.

Basionym: *Panicum tsugetorum* Nash, Bull. Torrey Bot. Club 25:86. 1898.

Eurybia furcata (E. S. Burgess) G. L. Nesom f. ***elaciniata*** (Benke) Wilhelm & Rericha*, comb. nov.*

Basionym: *Aster furcatus* E. S. Burgess var. *elaciniatus* Benke, Amer. Midl. Naturalist 13:326. 1932.
Aster furcatus E.S. Burgess f. *elaciniatus* (Benke) Shinners, Amer. Midl. Naturalist 26:405. 1941.

Eurybia macrophylla (L.) Cass. var. ***ianthina*** (Fernald) Wilhelm & Rericha*, comb. nov*.
Basionym: *Aster ianthinus* E. S. Burgess, Ill. Fl. N. U.S. (Britton & Brown) 3:360. 1898.
Aster macrophyllus L. var. *ianthinus* (E. S. Burgess) Fernald, Fl. Southington [C.H. Bissell & L. Andrews] 99. 1902.

Eurybia macrophylla (L.) Cass. var. ***pinguifolia*** (E. S. Burgess) Wilhelm & Rericha*, comb. nov*.
Basionym: *Aster macrophyllus* L. var. *pinguifolius* E. S. Burgess, Ill. Fl. N. U.S. [Britton & Brown] 3:360. 1898.

Eurybia macrophylla (L.) Cass. var. ***velutina*** (E. S. Burgess) Wilhelm & Rericha*, comb. nov*.
Basionym: *Aster macrophyllus* L. var. *velutinus* E. S. Burgess, Ill. Fl. N. U.S. [Britton & Brown] 3: 360. 1898.

Eutrochium maculatum (L.) E. E. Lamont f. ***faxonii*** (Fernald) Wilhelm & Rericha*, comb. nov*.
Basionym: *Eupatorium maculatum* L. f. *faxonii* Fernald, Rhodora 47:195. 1945.
Halerpestes cymbalaria (Pursh) Greene f. ***hebecaulis*** (Fernald) Wilhelm & Rericha*, comb. nov*.
Basionym: *Ranunculus cymbalaria* Pursh f. *hebecaulis* Fernald, Rhodora 16:162. 1914.

Hylodesmum glutinosum (Willd.) H. Ohashi & R. R. Mill f. ***chandonnetii*** (Lunell) Wilhelm & Rericha*, comb. nov*.
Basionym: *Meibomia grandiflora* (DC.) Kuntze var. *chandonnetii* Lunell, Amer. Midl. Naturalist 2:128. 1911.
Desmodium glutinosum (Willd.) Alph. Wood f. *chandonnetii* (Lunell) B. G. Schub., Rhodora 52:138. 1950.

Minuartia patula (Michx.) Mattf. f. ***media*** (Steyerm.) Wilhelm & Rericha*, comb. nov.*
Basionym: *Arenaria patula* Michx. f. *media* Steyerm. Rhodora 43:331. 1941.

Nuttallanthus canadensis (L.) D. A. Sutton f. ***albinus*** (Fernald) Wilhelm & Rericha*, comb. nov*.
Basionym: *Linaria canadensis* (L.) Dum. Cours. f. *albina* Fernald, Rhodora 45:476. 1943.

Persicaria hydropiperoides (Michx.) Small var. ***strigosa*** (Small) Wilhelm & Rericha*, comb. nov.*
Basionym: *Polygonum hydropiperoides* var. *strigosum* Small, Bull. Torrey Bot. Club 19:355. 1892.
Polygonum hydropiperoides Michx. f. *strigosum* (Small) Stanford, Rhodora 28:26. 1926.

Ranunculus flabellaris Raf. f. ***rosiflorus*** (Clute) Wilhelm & Rericha*, comb. nov*.
Basionym: *Ranunculus delphinifolius* Eaton f. *rosiflorus* Clute, Amer. Bot. 34:106. 1928. *Ranunculus delphinifolius* Torr. *ex* Eaton is considered by contemporary authors to be conspecific with *R. flabellaris* (Whittemore & Parfitt 1997).

Salix myricoides Muhl. var. ***angustifolia*** (C. F. Wheeler & E. F. Sm.) Wilhelm & Rericha*, comb. nov.*
Basionym: *Salix glaucophylla* (Bebb) Bebb var. *angustifolia* C. F. Wheeler & E. F. Sm., Cat. Phaen. Crypt. Pl. Mich. 72. 1881. *Salix glaucophylla* (Bebb) Bebb is considered synonymous with *S. myricoides* (Argus 2010).

Symphyotrichum ericoides (L.) G. L. Nesom f. ***gramsii*** (Benke) Wilhelm & Rericha*, comb. nov*.
Basionym: *Aster ericoides* L. f. *gramsii* Benke, Amer. Midl. Naturalist 13:328. 1932.

Symphyotrichum novae-angliae (L.) G. L. Nesom f. ***roseum*** (Desf.) Wilhelm & Rericha*, comb. nov*.
Basionym: *Aster roseus* Desf., Tabl. École Bot. (ed. 3). 401. 1812.
Aster novae-angliae L. var. *roseus* (Desf.) DC., Prodr. 5:232. 1836.
Aster novae-angliae L. f. *roseus* (Desf.) Britton, Proc. Nat. Sci. Assoc. Staten Island 2. 1890.

Symphyotrichum puniceum (L.) Áskell Löve & D. Löve f. ***candidum*** (Fernald) Wilhelm & Rericha, *comb. nov*.

Basionym: *Aster puniceus* L. f. *candidus* Fernald, Rhodora 51:95. 1949.

Symphyotrichum shortii (Lindl.) G. L. Nesom f. ***gronemannii*** (Benke) Wilhelm & Rericha, *comb. nov*.

Basionym: *Aster shortii* Lindl. f. *gronemannii* Benke, Rhodora 31:150. 1929.

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