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Vascular Plant Taxa Originally Described From Iowa

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Forty-seven taxa of vascular plants were originally described in whole or in part on the basis of type specimens collected in Iowa. These taxa were described in various scientific journals and books between 1861 and 1966, largely by botanists affiliated with institutions outside the state. For each taxon, information is provided on the basionym, nomenclatural synonyms, place of publication, and type specimen(s). References to current taxonomic interpretation are provided for taxa not treated in the standard regional manuals. Brief biographic notes are provided for persons honored by eponyms.

INDEX DESCRIPTORS: Iowa flora, plant taxonomy, type localities, type specimens, herbaria, botanical history, eponyms, biography.

When a taxonomist describes a plant as new to science and wishes to formally publish a name for it, the International Code of Botanical Nomenclature (Voss *et al.* 1983) requires that a *type* be designated. A type is defined as some element, generally an herbarium specimen, to which the new name is permanently attached. It serves as a reference point for the correct application of the name and as a standard against which other specimens may be compared. As such, type specimens play a key role in taxonomic studies. The purpose of this paper is to present information on plant taxa based in whole or in part on type specimens collected in Iowa. Although this information is largely of historical interest, it will also be useful in a variety of Iowa floristic studies.

The method used to locate these taxa was simply to search the appropriate literature. Many were discovered in the treatment of Illinois vascular plants by Jones and Fuller (1955). Others were found in Iowa scientific journals, i.e., *Iowa Naturalist*, *Iowa State Journal of Science*, *Proceedings of the Davenport Academy of Natural Sciences*, *Proceedings of the Iowa Academy of Science*, and *University of Iowa Studies in Natural History*. The bibliographies of Hippler (1951) and Eilers (1975) were also useful. For certain large genera (i.e., *Crataegus*, *Panicum*, *Rubus*) I also searched the Gray Herbarium Card Index of North American Plants.

This search yielded 47 taxa which were based on a holotype, lectotype, or syntype (cf. Voss *et al.* 1983 for definitions) collected in Iowa. These taxa were described in various scientific journals and books between 1861 and 1966. The majority were described by botanists not affiliated with Iowa institutions. W. W. Ashe (North Carolina Geological Survey) and P. A. Rydberg (New York Botanical Garden) were particularly prolific, naming eight and six taxa respectively. Among Iowa botanists, T. J. Fitzpatrick (Graceland College) and L. H. Pammel (Iowa State University) each described three taxa. Several of the names are eponyms honoring such Iowa botanists as R. I. Cratty, B. Fink, T. J. Fitzpatrick, and L. H. Pammel.

Nearly 75% of these taxa have not been recognized by later authors. There are several reasons for this: (1) the characters used to distinguish the taxon fall within the range of variability of another taxon; (2) the taxon is a minor variant considered unworthy of nomenclatural recognition; (3) the taxon is based on a teratological type specimen; (4) the type specimen is missing and the identity of the taxon cannot be determined from the description; and (5) the taxon is recognized but a name based on a non-Iowa type has priority. This leaves only 11 taxa which are generally recognized by recent authors: *Bromus latiglumis* (Scribn. ex Shear) A. S. Hitchc., *Carex gravida* L. H. Bailey, *Chrysosplenium iowense* Rydb., *X Elyhordeum iowense* R. W. Pohl, *Isoetes melanopoda* Gay & Durieu, *Lespedeza leptostachya* Engelm. ex Gray, *Panicum leibergii* (Scribn. ex Vasey) Scribn., *Prunus munsoniana* Wight & Hedrick, *Pyrus ioensis* (Wood) Carruth, *Sagittaria cristata* Engelm., and *Zizania aquatica* var. *interior* Fassett. Cantino and Lammers (1983) noted that the name *Physostegia virginiana* var. *arenaria* Shimek would

have priority if *P. virginiana* ssp. *praemorsa* (Shinners) Cantino were recognized at varietal level.

The catalogue is arranged alphabetically by basionym. Nomenclatural synonyms follow. The place of publication is cited for both the basionym and synonyms. Abbreviations of books and journals follow Stafleu and Cowan (1976-83) and Lawrence *et al.* (1968) respectively. The type specimen is cited next. Herbarium acronyms follow Holmgren *et al.* (1981). An exclamation point after an acronym indicates that I examined that specimen, except for types at NY, which were examined for me by Dr. John J. Furlow of The Ohio State University. References to current taxonomic interpretations are given for taxa not treated (as either accepted taxa or as synonyms) in the standard regional manuals (Fernald 1950, Gleason and Cronquist 1963). Intraspecific taxa not treated in these manuals are presumed to be taxonomic synonyms of the species to which they belong, unless otherwise stated. Brief biographic information is provided for persons honored by eponyms.

ANNOTATED CATALOGUE

Asarum canadense var. *acuminatum* Ashe, Contrib. my Herb. 1:2. 1897. *Asarum acuminatum* (Ashe) Bickn. in Britt. & Brown, Illus. Fl. N. US 3:513. 1898. TYPE: Minnesota and Iowa; W. W. Ashe 2008 (not located).

Aster finkii Rydb., Brittonia 1:102. 1931. TYPE: Iowa; [Fayette Co.] Fayette, woods, Sep 1895, *B. Fink s.n.* (Holotype ISC!). Shinners (1941) regarded this as an endemic of the "Driftless Area" (cf. Hartley 1966). However, A. G. Jones in 1978 annotated the holotype as a variant of *A. drummondii* Lindl. "which has, by way of hybridization and back-crossing, acquired characteristics of both *A. cordifolius* L. and *A. shortii* Lindl." The name commemorates Dr. Bruce Fink (1861-1927) who was Professor of Botany at Upper Iowa University, Fayette, from 1892 to 1903 (Pammel 1928).

Aster woldeni Rydb., Brittonia 1:103. 1931. TYPE: Iowa; Emmet Co., Ellsworth Twp. [along road between sections 30 and 31], prairie roadsides in dry soil, 6 Sep 1924, *B. O. Wolden 1068* (Holotype NY! Isotype ISC!) The isotype was annotated as *A. nebraskensis* Britt. by A. G. Jones in 1978. The name honors Bernt Olaf Wolden (1886-1968), an amateur botanist at Estherville, Iowa (Barnhart 1965). The information cited above in brackets is taken from Wolden (1932).

Bromus purgans var. *latiglumis* Scribn. ex Shear, USDA Div. Agrostol. Bull. 23:40. 1900. *Bromus latiglumis* (Scribn. ex Shear) A. S. Hitchc., Rhodora 8:211. 1906. *Forasaccus latiglumis* (Scribn. ex Shear) Lunnell, Amer. Midl. Naturalist 4:225. 1915. *Bromus ciliatus* var. *incanus* subvar. *latiglumis* (Scribn. ex Shear) Farw., Amer. Midl. Naturalist 10:204. 1927. *Zerna latiglumis* (Scribn. ex Shear) Henr., Blumea 4:498. 1941; TYPE: Iowa; [Humboldt Co.] Dakota City, 8 Aug 1896, *L. H. Pammel s.n.* [Iowa Agric. Coll. Distrib. 222]

(Holotype US! Isotypes IA! ISC! MO!)

Campanula americana f. *albiflora* M. L. Grant, Proc. Iowa Acad. Sci. 60:148. 1954. TYPE: Iowa; Emmet Co., High Lake, NE¼ NW¼ S14 T98N R33W, oak-hickory forest, 14 Jul 1949, M. L. Grant 11193 (Holotype ISTC!).

Camptosorus rhizophyllus var. *intermedius* Arthur, Bot. Gaz. (Crawfordsville) 8:200. 1883. *Camptosorus rhizophyllus* f. *intermedius* (Arthur) Clute ex Broun, Index N. Amer. Ferns 45. 1938. TYPE: Iowa; Muscatine Co., limestone cliffs, J. G. Haupt s.n. (not located).

Carex grvida L. H. Bailey, Mem. Torrey Bot. Club 1:5. 1889. SYNTYPE: Iowa; [Emmet Co.] Estherville, 12 Jun 1881, R. I. Cratty s.n. (BH!). The other syntypes were collected in northern Illinois by M. S. Bebb and G. Vasey.

Chrysosplenium iowense Rydb. in Britt., Man. Fl. N. States 483. 1901. *Chrysosplenium alternifolium* f. *iowense* (Rydb.) Rosendahl, Bot. Jahrb. Syst. 37:86. 1905. *Chrysosplenium alternifolium* var. *iowense* (Rydb.) Boivin, Naturaliste Canad. 93:642. 1966. TYPE: Iowa; [Winneshiek Co., Canoe Twp. Sec. 8, in the Canoe Creek Valley, six miles due north of] Decorah, north side, shady hill, in moss, 1 Jul 1888, E. W. D. Holway s.n. (Holotype GH!). The information in brackets is from Rosendahl (1947).

Claytonia multicaulis var. *robusta* Somes, Iowa Naturalist 2:68. 1910. *Claytonia robusta* (Somes) Rydb., Brittonia 1:87. 1931. *Claytonia virginica* f. *robusta* (Somes) Palmer & Steyerl., Rhodora 40:132. 1938. TYPE: Iowa; Johnson Co., Iowa City, rich woodland, 8 Jun 1908, M. P. Somes s.n. (Holotype ISC!). This taxon is characterized as larger and more robust than typical *C. virginica* L. and may represent polyploids of that species. Lewis and Semple (1977) indicate that diploids, triploids, and tetraploids occur in southeastern Iowa, but do not discuss possible correlations of cytology and morphology.

Cnicus iowensis Pammel, Proc. Iowa Acad. Sci. 8:231. 1901. *Cirsium iowense* (Pammel) Fern., Rhodora 10:94. 1908. TYPE: Iowa; Boone Co., Ledges [State Park], 22 Aug 1896, L. H. Pammel & C. R. Ball s.n. [Iowa Agric. Coll. Distrib. 65] (Holotype ISC! Isotypes GH! MO! US!).

Cnicus iowensis var. *crattyi* Pammel, Proc. Iowa Acad. Sci. 8:231. 1901. *Cirsium iowense* var. *crattyi* (Pammel) Wolden, Proc. Iowa Acad. Sci. 39:131. 1932. SYNTYPES: Iowa; Dickinson Co., Spirit Lake, 29 Jun 1897, C. R. Ball s.n. (ISC!). Iowa; Emmet Co., 27 Aug 1887, R. I. Cratty s.n. (IA!). Iowa; Lyon Co., Little Rock, 29 Jun 1897, C. R. Ball s.n. (ISC!). This epithet honors Robert Irvin Cratty (1853-1940), who served as Curator of the Herbarium at Iowa State University from 1918 to 1932 (Hayden 1940).

Crataegus amabilis Ashe, J. Elisha Mitchell Sci. Soc. 19:15. 1903. TYPE: Iowa; [Lee Co.] Keokuk, bluffs of the Mississippi River (not located). Kruschke (1965) considered this a synonym of *C. mollis* (Torr. & Gray) Scheele var. *mollis*.

Crataegus margaretta f. *xanthocarpa* Sarg., J. Arnold Arbor. 3:200. 1923. TYPE: Iowa; [Hardin Co.] Steamboat Rock, 28 Sep 1901, L. H. Pammel s.n. (Holotype A!).

Crataegus mcgeeae Ashe, J. Elisha Mitchell Sci. Soc. 18:20. 1902. TYPE: Iowa; open woods and fields, southeastern part of state, E. R. McGee s.n. (not located). This name honors Emma Rachel McGee, an amateur botanist who collected in Ohio and Iowa in 1892 (Barnhart 1965). This species is not treated in recent revisions of the genus (Palmer 1946, Kruschke 1965) and I am unable to determine the presently accepted taxon to which it belongs.

Crataegus pubifolia Ashe, North Carolina Agric. Exp. Sta. Bull. 175:114. 1900. TYPE: Iowa; middle part of state, Aug 1899, W. W. Ashe s.n. (not located). Kruschke (1965) considered this a synonym of *C. calpodendron* (Ehrh.) Medic var. *calpodendron*.

Crataegus redolens Ashe, J. Elisha Mitchell Sci. Soc. 19:14. 1903. SYNTYPE: Iowa; [Clinton Co.] Clinton, L. H. Pammel s.n. (not located). The other syntypes were collected by Ashe in Minnesota and Wisconsin. Kruschke (1965) considered this a synonym of *C. mollis* (Torr. & Gray) Scheele var. *mollis*.

Crataegus vesca Ashe, J. Elisha Mitchell Sci. Soc. 19:13. 1903. TYPE: Iowa; [Lee Co.] near Keokuk, fertile slopes and bluffs along the Mississippi River (not located). Kruschke (1965) considered this a synonym of *C. mollis* (Torr. & Gray) Scheele var. *mollis*.

Delphinium tricornis var. *grandiflorum* Fitzpatrick, Bull. Lab. Nat. Hist. Iowa State Univ. 5:104. 1901. TYPE: Iowa; [Decatur Co.] Lamoni, T. J. Fitzpatrick & M. F. L. Fitzpatrick s.n. (not located).

Dentaria laciniata f. *hexifolia* Wolden, Amer. Bot. 23:19. 1917. TYPE: Iowa; [Emmet Co.] High Lake, B. O. Wolden s.n. (not located).

Elodea ioensis Wylie, Bull. Lab. Nat. Hist. Iowa State Univ. 6(4):48. 1913. TYPE: Iowa; Dickinson Co., East Okoboji Lake, 1911, R. B. Wylie s.n. (Holotype GH!). St. John (1965) considered this a synonym of *E. canadensis* Michx.

X Elyhordeum iowense R. W. Pohl, Brittonia 18:255. 1966. TYPE: Iowa; Story Co., Washington Twp. Sec. 7, east side of county line road, ca. 0.5 mi. S of US Hwy 30, west of Ames, open grassy roadside adjacent to cornfield, with *Elymus villosus* and *Hordeum jubatum*, 21 Jun 1965, R. W. Pohl 9743 (Holotype ISC! Isotype ISC!). This taxon is an intergeneric hybrid between *Elymus villosus* Muhl. ex Willd. and *Hordeum jubatum* L. The type locality was destroyed several years ago by the relocation of US Hwy 30 (R. W. Pohl, pers. comm.).

Elymus striatus var. *ballii* Pammel, Iowa Geol. Surv. Suppl. Rep. 1903: 347. 1905. LECTOTYPE (Hitchcock 1935): Iowa; Johnson Co., woods, 6 Jul 1894, T. J. Fitzpatrick & M. F. L. Fitzpatrick s.n. (ISC!). Hitchcock (1935) considered this a synonym of *E. villosus* Muhl. ex Willd. The epithet honors Carleton Roy Ball (1873-1958), USDA agronomist and authority on *Salix* L. (Barnhart 1965).

Galium triflorum f. *hispidum* Leyendecker, Iowa State Coll. J. Sci. 15: 180. 1941. TYPE: Iowa; Boone Co., Ledges [State Park], 25 Jul 1903, L. H. Pammel, R. E. Buchanan & C. M. King s.n. [Iowa Agric. Coll. Distrib. 3949] (Holotype ISC! Isotype ISC!).

Hordeum pammelii Scribn. & Ball, Iowa Geol. Surv. Suppl. Rep. 1903:335. 1905. TYPE: Iowa; [Humboldt Co.] Dakota City, prairies along the Chicago and Northwestern Railroad tracks, 8 Aug 1896, L. H. Pammel s.n. [Iowa Agric. Coll. Distrib. 3824] (Holotype US! Isotype ISC!). Pohl (1966) considered this a synonym of *X Elyhordeum montanense* (Scribn. ex Beal) Bowden, an intergeneric hybrid between *Elymus virginicus* L. and *Hordeum jubatum* L. The epithet honors Dr. Louis Herman Pammel (1862-1931), Professor of Botany at Iowa State University from 1889 to 1931 (Shimek 1931).

Isœtes melanopoda Gay & Durieu, Bot. Soc. France 11:102. 1864. SYNTYPES: Iowa; [Clinton Co.] Clinton, 1863, G. Vasey s.n. (GH! MO!). The other syntypes were collected in Illinois by E. Hall. This species was recently recollected in Clinton County, presumably at the type locality (Peck 1983).

Kuhnia fitzpatricki A. Nels., Bot. Gaz. (Crawfordsville) 31:402. 1901. TYPE: Iowa; Decatur Co., prairies, 25 Sept 1899, T. J. Fitzpatrick & M. F. L. Fitzpatrick s.n. (Holotype RM!). Shinners (1946) considered this a synonym of *K. eupatorioides* var. *corymbulosa* Torr. & Gray. The name honors Thomas Jefferson Fitzpatrick (1868-1952), Professor of Mathematics and Botany at Graceland College, Lamoni, Iowa, from 1895 to 1899, and a collector for the Iowa Historical Society from 1904 to 1907 (Lommasson 1952).

Lespedeza leptostachya Engelm. ex Gray, Proc. Amer. Acad. Arts 12:57. 1876. LECTOTYPE (Clewel 1966): Iowa; Emmet Co.,

1871, *C. E. Bessey s.n.* (MO!).

Lilium lanceolatum Fitzpatrick, Proc. Iowa Acad. Sci. 13:131. 1906. TYPE: Iowa; Decatur Co., prairies, 7 Jun 1896, T. J. Fitzpatrick & M. F. L. Fitzpatrick *s.n.* (not located). Britton and Brown (1913) considered this a synonym of *L. umbellatum* Pursh, which Fernald (1950) treated as a synonym of *L. philadelphicum* var. *andinum* (Nutt.) Ker.

Linum sulcatum f. *albiflorum* M. L. Grant, Proc. Iowa Acad. Sci. 60:147. 1954. TYPE: Iowa; Osceola Co., south of Iowa Hwy 9, 4.5 mi. W of Ocheydan, high prairie, 8 Aug 1949, M. L. Grant 11247 (Holotype ISTC! Isotype F!).

Oxalis europaea var. *bushii* f. *subglabrata* Wieg., Rhodora 27:136. 1925. TYPE: Iowa; [Story Co.] Ames, 25 Jul 1896, L. H. Pammel & C. R. Ball *s.n.* [Iowa Agric. Coll. Distrib. 4] (Holotype GH. Isotypes F, ISC, US). Lourteig (1979) regards this as a synonym of *O. fontana* var. *bushii* (Small) Hara.

Panicum iowense Ashe, North Carolina Agric. Exp. Sta. Bull. 175:115. 1900. TYPE: eastern Iowa to Kansas; dry prairies (not located). Hitchcock and Chase (1910) were unable to locate an unequivocal type specimen and stated that the application of the name was uncertain.

Panicum pammeli Ashe, North Carolina Agric. Exp. Sta. Bull. 175:116. 1900. TYPE: Iowa; Emmet Co., Armstrong, dry prairies, 12 Jun 1881, R. I. Cratty *s.n.* (Holotype NCU! Isotypes IA! ISC!). Gould and Clark (1979) treated this as a synonym of *Dichanthelium linearifolium* (Scribn.) Gould. As with *Hordeum pammeli* Scribn. & Ball, this name honors Dr. L. H. Pammel.

Panicum scoparium var. *leibergii* Scribn. ex Vasey, USDA Div. Bot. Bull. 8:32. 1889. *Panicum scribnerianum* var. *leibergii* (Scribn. ex Vasey) Scribn., USDA Div. Agrostol. Bull. 6:32. 1897. *Panicum leibergii* (Scribn. ex Vasey) Scribn., USDA Div. Agrostol. Bull. 8:6. 1897. *Milium leibergii* (Scribn. ex Vasey) Lunell, Amer. Midl. Naturalist 4:213. 1915. *Dichanthelium leibergii* (Scribn. ex Vasey) Freckmann, Phytologia 39:271. 1978. TYPE: Iowa; Plymouth Co., 1878, J. Leiberg 34 (Holotype US!). This name honors John Bernhard Leiberg (1853-1913) who botanized in western Iowa during the 1870's (Barnhart 1965).

Persicaria iowensis Rydb., Brittonia 1:87. 1931. *Polygonum iowense* (Rydb.) Cratty, Proc. Iowa Acad. Sci. 39:87. 1932. Type: Iowa; [Story Co.] Ames, 29 Jul 1902, R. E. Buchanan *s.n.* (Holotype ISC! Isotype NY!).

Physostegia virginiana var. *arenaria* Shimek, Bull. Lab. Nat. Hist. Iowa State Univ. 6(2):223. 1911. LECTOTYPE (Cantino and Lammers 1983): Iowa; Louisa Co., near Fruitland, sand mound, 25 Sep 1909, B. Shimek *s.n.* (DAO!). Cantino and Lammers (1983) treat this as a synonym of *P. virginiana* ssp. *praemorsa* (Shinners) Cantino, but note that Shimek's name would have priority if that taxon were treated at the varietal level.

Polygonum exsertum Small, Bull. Torrey Bot. Club 21:172. 1894. SYNTYPE: Iowa; [Dickinson Co.] Spirit Lake, at the source of the Little Sioux River, sandy banks, 30 Sep 1839, C. A. Geyer *s.n.* [Nicollet's Northw. Exped. 138] (not located). The other syntypes were collected in Nebraska (J. M. Bates), Missouri (G. Engelmann), Rhode Island (E. P. Bicknell), and Maine (S. T. Olney). The visit to Spirit Lake by the Nicollet Expedition was described by Shimek (1915).

Prunus munsoniana Wight & Hedrick in Hedrick, Plums New York 88. 1911. SYNTYPE: Iowa; [Story Co.] Ames, Iowa Experiment Station, 15 Sep 1909, W. F. Wight 4178 (not located). This specimen represents the foliage of the species. The other syntype, collected at the New York Experiment Station, Geneva, New York, represents the flowers. The epithet honors Thomas Volney Munson

(1843-1913), a Texas nurseryman and viticulturist (Barnhart 1965).

Pyrus coronaria var. *ioensis* Wood, Classbook Bot. 333. 1861. *Pyrus ioensis* (Wood) Carruth, Trans. Kansas Acad. Sci. 5:48. 1877. *Malus ioensis* (Wood) Britt. in Britt. & Brown, Illus. Fl. N. US 2:235. 1897. TYPE: Iowa; Dr. Cousens *s.n.* (not located).

Rubus flagellaris var. *occidualis* L. H. Bailey, Gentes Herb. 2:318. 1932. *Rubus occidualis* (L. H. Bailey) L. H. Bailey, Gentes Herb. 5:264. 1943. LECTOTYPE (Davis *et al.* 1968): Iowa; [Story Co.] Ames, near Lynn Ave., 30 May 1924, R. I. Cratty *s.n.* (BH! Isolectotype ISC!). Davis *et al.* (1968) treat this as a synonym of *R. roribaccus* (L. H. Bailey) Rydb.

Sagittaria cristata Engelm. in Arthur, Proc. Davenport Acad. Nat. Sci. 4:29. 1886. *Sagittaria graminea* var. *cristata* (Engelm.) Bogin, Mem. New York Bot. Gard. 9:210. 1955. LECTOTYPE (Bogin 1955): Iowa; Emmet Co., Armstrong's Grove Twp., near shore of lake, Aug 1881, R. I. Cratty *s.n.* (MO! Isolectotypes ISC! MO! NY!). The type locality was destroyed by draining early in this century (Wolden 1932).

Solidago somesii Rydb., Brittonia 1:101. 1931. TYPE: Iowa; [Johnson Co.] Elmira, Aug, M. P. Somes 3687 (not located). This species is not treated in the regional manuals (Fernald 1950, Gleason and Cronquist 1963) and the application of the name is uncertain. It possibly refers to a variant or hybrid in the *S. canadensis* L. complex. The epithet commemorates Melvin Philip Somes (1878-1928), curator of the Webster County Botanical Club in Fort Dodge, Iowa (Barnhart 1965, Somes 1905).

Sparganium chlorocarpum Rydb., N. Amer. Fl. 17:8. 1909. TYPE: Iowa; Emmet Co., marshes, Sep 1898, A. Cratty *s.n.* (Holotype NY!). Packer (1983) treats this species as a synonym of *S. angustifolium* Michx.

Stachys palustris var. *phaneropoda* Weatherby ex Fern., Rhodora 45:475. 1943. TYPE: Iowa; Emmet Co., Estherville, riverbank, 31 Jul 1925, B. O. Wolden 1118 (Holotype GH! Isotype ISC!). Gill (1980) treated this as a synonym of *S. palustris* ssp. *arenicola* (Britt.) L. S. Gill.

Taraxacum paradoxum Somes, Amer. Bot. 15:27. 1909. TYPE: Iowa; [Johnson Co.] near Iowa City, spring 1908, M. P. Somes *s.n.* (not located). Sherff (1920) regarded this as a teratological form of the ubiquitous *T. officinale* Weber.

Viburnum pubescens var. *petiolum* Fitzpatrick & Fitzpatrick, Proc. Iowa Acad. Sci. 7:198. 1900. TYPE: Iowa; Jefferson Co., along Rock Creek, T. J. Fitzpatrick & M. F. L. Fitzpatrick *s.n.* (not located). McAtee (1956) considered this a synonym of *V. molle* Michx.

Viola lucidifolia Newbro, Stud. Nat. Hist. Iowa Univ. 17:56. 1936. TYPE: Iowa; Johnson Co., Iowa City, 6 Apr 1935, G. Newbro *s.n.* (Holotype IA!). N. H. Russell annotated the holotype as *V. missouriensis* Greene in 1956.

Zizania aquatica var. *interior* Fassett, Rhodora 26:158. 1924. *Zizania interior* (Fassett) Rydb., Brittonia 1:82. 1931. TYPE: Iowa; Emmet Co., Armstrong, 27 Aug 1897, L. H. Pammel & R. I. Cratty *s.n.* [Iowa Agric. Coll. Distrib. 764] (Holotype GH! Isotype ISC!).

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