

PLANTS NEW OR RARE TO INDIANA. VII.

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All species reported in this paper are new to Indiana, unless mention is made to the contrary. Specimens of the species reported are deposited in my herbarium under the numbers given. The *Equisetum* and *Isoetes* were determined by L. S. Hopkins; the Gramineae by Agnes Chase; the Carices by K. K. Mackenzie; the *Juncus* by H. H. Bartlett; the *Rubus* and *Viola* by Ezra Brainerd; the *Chamaesyce* by C. F. Millspaugh; the determination of the remainder was made or checked at the Gray Herbarium.

*Equisetum hyemale* var. *intermedium* A. A. Eaton.

Lake County, July 28, 1907. No. 2,349. Border of a slough near Pine.

*Isoetes Braunii* Durieu.

Crawford County, October 12, 1916. No. 22,385. In a small pond on the north side of the road about one mile east of Pilot Knob hill. The pond is usually filled with water, but was dry when the specimen was taken, which was at an unusually dry time. It was associated with young plants of *Eleocharis* from which it was not easily distinguished. The specimens were determined by L. S. Hopkins, and his notes are given.

Number of plants examined, 3.

Number of leaves per plant, 10, 10, 10, 11, 16, 16, 16, 17.

Average number of leaves per plant, 13.

Length of leaves up to 20cm.: average about 12 cm.

Color of leaves, green.

Peripheral bundles none. Stomata abundant. Trunk distinctly bilobed.

Macrospores fairly uniform in size and shape, 486 to 504 microns.

Microspores 24, 26, 28 microns.

The plants were so covered with mud that it was impossible to get clean macrospores for measurement. The fruiting leaves, i. e. the ones of this season's growth have been pretty well detached from the parent plants while the leaves retained are those which will bear the next season's fruit. Nevertheless I feel pretty sure the determination is correct. It was from the detached leaves that the spores were secured for measurement.

*Isoetes foveolata* A. A. Eaton.

Harrison County, June 25, 1916. No. 20,467. Found in a low place in a woods four miles south and one mile east of Palmyra. The colony was about three feet wide and twenty-five feet long; and was located in an old wagon road through the woods. The plants formed a carpet of green. In wet seasons the water would course over the colony, and the place was only moist at this time which was a rather dry time. The nearby trees were *Liquidambar*;

*Acer rubum* and *Quercus palustris*. The only herbaceous plants noted were *Isnardia palustris* and *Samolus floribundus*. The determination was made by L. S. Hopkins, and his notes are given.

Number of plants examined, 3.

Number of leaves, 31, 46, 49; average number, 42.

Average length of leaves, about 20cm.; longest leaf, 28cm.

Color, reddish or olive green.

Peripheral bundles, none. Stomata, a few near the tips of the leaves; not plentiful.

Trunk bilobed in one: the other two look as if the plants had been pulled in two and only half of each plant collected, or as if they might have been attached to a stone or root.

Macrospores, 450, 468, 486, 522 and 540 microns.

Microspores, 20, 22, 24, 26, 28, 20, 32, microns.

The preceding are actual measurements.

*Sparganium diversifolium* Graebner.

Allen County, October 1, 1916. No. 22,109. In a small branch which empties into Cedar Creek about ten miles northeast of Fort Wayne. Newton County, August 30, 1916. No. 21,497. In a dredged ditch four and a half miles north and two miles west of Morocco. Noble County, Sept. 14, 1916. No. 21,883. In a slough on the south side of a black and white oak ridge about one mile south of Indian Village. Warren County, August 31, 1916. No. 21,643. In shallow water in Kate's Pond about one and a half miles northwest of Independence.

*Sagittaria cuneata* Sheldon.

Howard County, September 2, 1916. No. 21,663. On the boggy shore of Wild Cat Creek three miles east of Kokomo. Lagrange County, August 20, 1916. No. 20,968. Boggy border of Pigeon River three miles east of Mongo. Whitley County, September 11, 1916. No. 21,713. In a mucky Salix swamp on the south side of Blue River Lake.

*Sagittaria longirostra* (M. Micheli) J. G. Smith.

Vigo County, October 5, 1916. No. 22,193. Low muddy border of the north end of the Greenfield bayou about ten miles northwest of Pimento.

*Lophotocarpus calycinus* (Engelm.) J. G. Smith.

Posey County, October 8, 1916. No. 22,278. In a small pond in a field on the east side of the New Harmony and Mt. Vernon Road about three miles south of New Harmony. No. 22,291 in Pitcher's pond which is about six miles northwest of Mt. Vernon.

*Echinodorus radicans* (Nutt.) Engelm.

Posey County, October 8, 1916. No. 22,303. In a low place in Pitcher's pond about six miles northwest of Mt. Vernon.

*Paspalum circulare* Nash.

Clark County, September 6, 1910. No. 7,538. Roadside through the Forest Reserve near the Medsger bottoms. Jefferson County, September 9, 1915. No. 18,846. Roadside ditch four miles north of Madison. Posey County, September 20, 1911. No. 10,155. Roadside and adjoining meadow about three miles west of Hovey Lake.

*Paspalum repens* Berg. (*Paspalum mucronatum* Muhl.)

Schneck reported this species as occurring in the Lower Wabash bottoms. The following are definite localities: Gibson County, October 7, 1916. No. 22,247. Low border of a pond, bordering the Patoka River about three miles southwest of Patoka. Knox County, October 6, 1916. No. 22,201. In a low woods, bordering the west end of Dan's pond. Associated with *Eclipta alba*; *Phyllanthus caroliniensis* and *Homalocenchrus virginicus*. Posey County, October 8, 1916. No. 22,309. Low wooded border of Pitcher's pond which is about six miles northwest of Mt. Vernon.

*Alopecurus geniculatus* L.

Gibson County, May 27, 1899. Specimen taken by Dr. J. Schneck in a low sandy meadow near Lyle's Station. Greene County, May 26, 1912. No. 10,660. Common in a low place in a fallow field three-fourths miles east of Bushrød.

*Stipa avenacea* L.

Lagrange County, July 9, 1916. No. 20,709. Frequent in an open black and white oak woods on the south side of Pigeon River one mile east of Mongo.

*Aristida purpurascens* Poir.

Newton County, Aug. 30, 1916. No. 21,463. In very sandy soil along the roadside, bordering a black and white oak clearing three and a half miles south of Thayer. This species is given by Troop in his "Grasses of Indiana," but no definite locality is given.

*Leptochloa floribunda* Doell.

Posey County, October 8, 1916. No. 22,293. In the dried up mud basin of Pitcher's pond which is about six miles northwest of Mt. Vernon.

*Cyperus dentatus* var. *clenostachys* Fernald.

Starke County, September 1, 1914. No. 15,164. On the low border of the southeast side of Bass Lake.

*Scirpus smithii* var. *setosus* Fern.

Noble County, September 13, 1916. No. 21,851. On the low sandy border of the south side of Bear Lake. Associated here with *Juncus canadensis*; *Drosera longifolia*; *Bidens trichosperma*, etc.

*Carex tonsa* (Fernald) Bicknell.

Porter County, May 25, 1913. No. 12,959. On a dry open wooded dune half mile north of the Mineral Springs stop on the South Shore Traction line. Taken again in 1916 in the same county on the top of a wooded dune just east of Mud Lake. My No. 20,177.

*Carex trisperma* Dewey.

Kosciusko County, June 5, 1912. No. 10,923. Growing in deep sphagnum in a tamarack swamp about one mile south of Leesburg. Taken again in the same swamp on July 23, 1908. No. 5,095.

*Commelina augustifolia* Michx.

Knox County, July 8, 1915. No. 17,087. In the Knox sand in a cut along the railroad about four miles south of Vincennes. Associated with *Cyperus filiculmis*; *Bouteloua curtipendula*; *Stylosanthes biflora hispidissima*; *Petalostemum purpureum*; *Asclepias verticillata*; etc. Marshall County, August 19, 1915. No. 17,944. On the high sand hill on the southwest side of Lake Maxinkuckee. Associated with *Monarda punctata*; *Cycoloma atriplicifolia*; *Polygonum tenue*; *Rosa humilis*; *Rhus arbuscula* Greene; etc. Newton County, August 30, 1916. No. 21,511. Growing in almost pure sand in a roadside cut, four and a half miles north and one and a half miles west of Morocco. Porter County, August 25, 1916. No. 21,165. At the base of a wooded dune about two and a half miles northwest of Porter.

*Commelina longicaulis*, Jacq.

Gibson County, August 29, 1915. No. 18,328. In sandy soil in a cultivated field on the Gordon Hills six miles west of Patoka. I do not regard this as a migrant since I have specimens from other parts of the same county and from Posey County that match this specimen, but somewhat too immature to have well developed seed.

*Juncus tenuis* var. *anthelatus* Wiegand.

Clark County, June 30, 1910. No. 6,889. In an open ditch on the Forest Reserve. DuBois County, July 6, 1912. No. 11,625. In a roadside ditch half mile north of Birdseye. Jefferson County, June 21, 1915. No. 16,266. Roadside one mile west of Clifty Falls. Knox County, July 7, 1915. No. 16,940. Low place along the roadside six miles north of Decker. Perry County, July 4, 1912. No. 11,515. Roadside ditch six miles west of Derby. Spencer County, June 28, 1915. No. 16,594. Roadside two miles south of Fulda. Washington County, June 29, 1916. No. 20,581. In very dry sterile soil on a *Quercus* *Prinus* ridge about twelve miles north of Salem.

*Sisyrinchium albidum* Raf.

Allen County, June 27, 1914. No. 14,358. In sandy soil in the clearing on the Godfrey Reserve just south of Ft. Wayne. Cass County, May 7, 1916. No. 19,366. In dry sandy soil in an open black and white oak woods on the south side of Lake Cicott. Gibson County, June 10, 1913. No. 13,289.

In a dry sandy woods four miles southwest of Owensville. Jasper County, May 8, 1916. No. 19,424. In very sandy soil on a low hill along the right of way of the Penna Ry. about two miles east of Goodland. Associated with *Ranunculus fascicularis*; *Viola pedatifida*; etc. Lagrange County, June 5, 1915. No. 15,982. In very sandy soil in a low black and white oak clearing just north of Pigeon River and about half a mile west of the Steuben County line. Flowers white. Abundant here and albino plants not infrequent. Frequent in similar habitats throughout the county. Laporte County, June 1, 1916. No. 19,957. In a prairie habitat along the railroad a half mile east of Wanatah. Associated with *Hypoxis hirsuta*; *Phlox pilosa*; etc. Common here as well as *Phlox pilosa*, and albino forms of both species frequent. Starke County, June 1, 1916. No. 19,925. In sandy soil in an open black and white oak woods one fourth mile southeast of the southeast side of Bass Lake.

*Silene dichotoma* Ehrh.

Switzerland County, June 19, 1915. No. 16,170. In poor soil on a hill along the Bennington Road four miles north of Vevay. Abundant here.

*Cheirinia inconspicua* (S. Wats.) Britt.

Marshall County, May 30, 1913. Collected in Plymouth along the railroad by E. L. Greene during a wait to change cars. This illustrates the ceaseless activity of this peer of botanists.

*Rubus Baileyanus* Britton.

This species was reported in Coulter's Catalogue, but recent studies of the genus *Rubus* have given a different meaning to many of the species of the genus. The following records are given to set forth the known range of the species in our area. The names of the counties and the number of the specimens are given only. Allen County, No. 20,229. Bartholomew County, No. 20,608. Clark County, No. 20,336. Crawford County, No. 20, 431. Elkhart County, No. 19,949. Harrison County, No. 20,499. Lagrange County, No. 18,884 and 19,887. Marshall County, No. 19,935. Starke County, No. 19,963. Steuben County, No. 20,226.

*Rubus betulifolius* Small.

Pike County, July 7, 1915. No. 16,967. In a beech woods one mile east of Union. Posey County, July 5, 1915. No. 16,850. In sandy soil along the roadside one mile south of Cynthiana.

*Rubus Enslenii* Tratt.

Starke County, June 1, 1916. No. 19,932. Low sandy border of the southeast side of Bass Lake.

*Rubus floridus* Tratt.

Harrison County, June 26, 1916. No. 20,518. In rather moist soil along the roadside one and a half miles west and three-fifths of a mile south of Elizabeth.

*Rubus frondosus* Bigel.

Crawford County, Nos. 20,389 and 20,400. Harrison County, No. 20,509. Jackson County, No. 20,605. Noble County, No. 20,085. Starke County, No. 19,923. Steuben County, No. 20,211.

*Rubus allegheniensis x recurvans.*

Allen County, No. 19,871. DeKalb County, No. 20,235. Elkhart County, No. 19,948. Franklin County, No. 20,283. Lake County, No. 20,088.

*Rubus argutus x recurvans.*

Porter County, No. 20,032. Wayne County, No. 20,249.

*Acalypha ostryaefolia* Riddell.

Clark County, September 29, 1909. No. 5,474. In a catalpa planting on the Forest Reserve. Harrison County, October 14, 1916. No. 22,457. In a potato field along the Ohio River about one mile west of Locust Point. Posey County, September 28, 1910. No. 7,676. In a cultivated field about three miles south of New Harmony. Collected in 1916 in the same county in a corn field about three miles east of Mt. Vernon.

*Chamaesyce Lansingii* Millsbaugh.

Randolph County, September 13, 1914. No. 15,447. Bank of the Salamonie River south of Redkey. Tipton County, August 2, 1913. by Mrs. Chas. C. Deam. No. 13,897. Right of way of the Lake Erie Ry. about one mile west of Goldsmith.

*Lechea Leggettii* Britton and Hollick.

Allen County, August 2, 1914. No. 14,515. Locally abundant in sandy soil in the clearing on the Godfrey Reserve just south of Ft. Wayne. Newton County, August 30, 1916. No. 21,395. In sandy soil in a black and white oak woods, just west of Tbayer. Starke County, September 1, 1914. No. 15,161. In rather moist sandy soil in a black and white oak woods on the southeast side of Bass Lake.

*Viola hirsutula* Brainerd.

Clark County, June 29, 1916. No. 20,567. On a wooded slope bordering the road about two miles west of Bennettsville. Associated with *Quercus velutina* and *Pinus virginiana*. A hybrid of this species was found at the same place.

*Viola pratincola* Greene.

Lake County, May 9, 1916. No. 19,473. In a low woods bordering the Kankakee River one mile south of Schneider. Associated with *Quercus palustris*; *Quercus bicolor*; *Acer saccharinum*, etc. Porter County, June 3, 1916. No. 20,050. On the moist wooded bank of the Calumet River, just north of the Gary School property.

*Viola cucullata x sagittata.*

Lagrange County, May 31, 1916. No. 19,894. In a dry place in a tamarack swamp bordering Pigeon River one mile east of Mongo.

*Viola hirsutula x papilionacea.*

Brown County, May 18, 1913. No. 12,822. In moist soil at the base of a wooded ravine one mile east of Helmsburg.

*Viola papilionacea x pedatifida.*

Jasper County, May 8, 1916. No. 19,418. In rather moist soil on the right of way of the Penna Ry. about two miles east of Goodland.

*Viola triloba* var. *dilatata* (Ell.) Brainerd.

Harrison County, June 26, 1916. No. 20,519. In a beech woods two miles south of New Middletown. *Cimicifuga racemosa* which is infrequent in Indiana was abundant at this place.

*Rhexia mariana* L.

Spencer County, June 30, 1915. No. 16,654. Abundant in sandy soil along the road leading to the residence of Floyd Thurman about two miles west of Grand View.

*Ludwigia sphaerocarpa* Ell.

Porter County, August 26, 1916. No. 21,191. In a sedge marsh between wooded dunes a short distance east of Mud Lake. Newton County, August 30, 1916. No. 21,425. In a ditch through the marsh just west of Thayer. Starke County, August 22, 1916. No. 21,066. Low border of the northwest side of Bass Lake.

*Pyrola asarifolia incarnata* (Fisch.) Fernald.

Steuben County, June 14, 1916. No. 20,203. In a tamarack swamp on the southwest side of Tamarack Lake about four miles southeast of Orland.

*Apocynum medium* Greene.

Clarke County, June 29, 1916. No. 20,571. Near the base of a wooded slope in a thick beech and oak woods about one mile northwest of St. Joe.

*Convolvulus fraterniflorus* Mack and Bush.

Knox County, July 8, 1915. No. 17,059A. Low wooded border of Clay-pole pond.

*Mentha longifolia mollississima* Borkh.

Noble County, July 9, 1916. No. 20,722. Abundant along the sandy roadside on the Lindsay Farm about one-fourth mile north of Wolf Lake.

*Ruellia parviflora* (Nees.) Britton.

Crawford County, September 4, 1915. No. 18,584. Wooded slope of Dry Run about one mile northeast of Leavenworth.

*Galium labradoricum* Wiegand.

Lagrange County, July 9, 1916. No. 20,688. Growing in sphagnum in a wet opening in a tamarack marsh along Pigeon River one mile east of Mongo. Associated with *Sarracenia*; *Calopogon*; *Triglochin maritima*; *Eriophorum viridi-carinatum*; *Pogonia ophioglossoides*; etc. Porter County, June 3, 1916. No. 20,044. In a tamarack swamp about two and a half miles northwest of Porter.

*Kuhnia corymbosum* Ell.

Lagrange County, August 29, 1914. No. 14,940. Common in very sandy soil along a roadside about one mile east of Howe.

*Antennaria occidentalis* Greene.

Cass County, May 7, 1916. No. 19,363. Abundant in dry sandy soil in the Davis cemetery about two and a half miles west of Cicott. In the Midland Naturalist Vol. 2:89:1911, E. L. Greene refers to a specimen of this species in the National Herbarium, which was collected by Dr. W. S. Moffatt in Lake County on May 29, 1879.

*Iva ciliata* Willd.

Posey County, October 9, 1916. No. 22,316. Roadside along the Wabash River near "Bone Bank," about thirteen miles southwest of Mt. Vernon.

*Rudbeckia Sullivantii* Boynton and Beadle.

Decatur County, August 13, 1911. No. 9,551. Collected by Mrs. Chas. C. Deam on the wooded and boggy bank of Flat Rock River about one-half a mile above St. Paul. Huntington County, September 18, 1916. No. 22,042. On the boggy wooded bank of the Salamonie River about four miles north of Warren. Kosciusko County, September 16, 1916. No. 21,968. Moist sandy shore of the east side of Little Chapman Lake. Marion County, August 24, 1914. No. 14,069. Boggy slope in a woods bordering White River, about eight miles north of Indianapolis. Parke County, September 2, 1911. No. 9,904. Moist rocky wooded slope of Sugar Creek at Turkey Run.

*Sonchus arvensis* L.

Wells County, August 7, 1916. No. 20,842. In the alley back of Lee Mart's residence in Bluffton. There was quite a colony of it, which indicated that it had persisted for several years. When I informed Mr. Martz that it was a new weed, he at once set to work to exterminate it.