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VASCULAR FLORA OF SHAW PRAIRIE, LAKE COUNTY, ILLINOIS

Charles L. Bushey
Hazelton Environmental Sciences
1500 Frontage Road, Northbrook, Illinois 60035

Robbin C. Moran
Department of Botany
Southern Illinois University, Carbondale, Illinois 62901

ABSTRACT - An annotated catalog of 137 taxa of vascular plants is presented for a relatively undisturbed wet mesic prairie and sedge meadow located in the City of Lake Forest, Lake County, Illinois. The prairie is dominated by *Sporobolus heterolepis* and contains many typical northeastern Illinois prairie plants.

Shaw Prairie is a high quality wet mesic prairie (*sensu* Curtis 1959) located in the City of Lake Forest, Illinois (NEQ, sec. 29, T44N, R12E, Waukegan U.S.G.S. Topographic Quadrangle 7.5' series). The prairie occupies the topographically low Skokie drainage area, located between two glacial moraines of the Lake Border Morainic System (Willman 1971). Presettlement vegetation studies of Lake County show that this prairie is a remnant of the original wet mesic prairies that once existed along the Skokie River in Lake and Cook Counties (Moran 1978). While most of this prairie was destroyed by farming and urban development, this 4 acre tract persisted because it was protected by the Shaw family since 1896 for esthetic reasons. The fact that Shaw Prairie was intentionally preserved by benevolent owners makes it unique from most other Illinois prairies that were preserved only by accident or because they were unsuitable for agricultural use. This paper provides an annotated list of vascular plants found only in the undisturbed portions of wet mesic prairie and sedge meadow at Shaw Prairie.

Two soil types dominate the prairie; Mundelein silt loam (424A), and the more common Pella silty clay loam (153) (Paschke and Alexander 1970). Both types are poorly drained soils formed over calcareous silt, sand, or glacial drift. The soils have moderate permeability and high available moisture. Spring water table levels for these soils is typically 1 to 3 feet below the surface. Drainage is into the Skokie River, approximately 15 meters from the western edge of the prairie.

Shaw Prairie was donated to the Illinois Chapter of the Nature Conservancy in 1976 by Mrs. Sylvia Shaw Haskins. Management of the entire prairie tract by the Lake Forest Open Lands Association began in 1976 and has consisted of annual spring burns and brush removal.

The study area within Shaw Prairie was chosen because it appeared relatively undisturbed. Criteria used in determining undisturbed prairie were: no obvious physical disturbance to the soil, homogeneous cover of prairie grasses and forbs, high species diversity, and low amount of shrub and alien plant invasion. Statements made by the owner (Sylvia Shaw Haskins, personal communication 1977) that the site was never grazed, at least not in the 92 years the property has been owned by the Shaw family, support the authors' use of the above criteria in selecting the study area.

A history of fire suppression was practiced by the Shaw family allowing invasion of woody vegetation, particularly around the edges of the prairie. Typical woody species in the shrubby border surrounding the prairie include *Cornus racemosa*, *Crataegus* spp., *Physocarpus opulifolia*, *Prunus americana*, *P. serrotina*, *Quercus ellipsoidalis*, *Rhamnus cathartica*, *Ulmus rubra*, and *Viburnum lentago*. Mrs. Sylvia Shaw Haskins (Personal communication 1977) who has lived near the prairie for 86 years, has observed a decrease in the abundance of many prairie forbs, in particular *Castilleja coccinea* and *Gentiana andrewsii*. This may, in part, be due to fire suppression within the study area. The eastern third of Shaw Prairie was formerly grazed and is now dominated by *Andropogon gerardii* and *Sorghastrum nutans*, in contrast to the ungrazed portions only a few meters away that are dominated by *Sporobolus heterolepis*. Plants of the grazed portion of Shaw Prairie are not included in this study.

In 1971 two narrow strips of land, one running north-south on the west edge of the prairie and another east-west through the center of the site, were destroyed by trucks and heavy construction equipment when the City of Lake Forest built a sewer through the property. Shortly thereafter, cold calcareous groundwater began percolating up in one location where the ground had been disturbed, and has maintained a relatively constant flow to this date. The constant high water table, indicated by this artesian seepage, is probably an important environmental factor in the presence of certain calciphiles and wet prairie species. Earlier channelization of the near-by Skokie River has undoubtedly affected the water table and hydrology of the study area, perhaps lessening this environmental factor.

The sampling data shown in Table 1 were collected by the junior author and Mr. Keith L. Wilson on 21 June, 1976, while working for the Illinois Natural Areas Inventory. Thirty randomly selected points were sampled with a $1/4M^2$ area circular hoop along a transect through the undisturbed portions of the prairie. These data show that Shaw Prairie is highly diverse and contains many typical northeastern Illinois prairie plants (Swink 1974).

Table 1. Frequency presence data from 30½M^2 Circular plots placed randomly along a transect through the undisturbed portions of Shaw Prairie.

Species	Frequency	Species	Frequency
Sporobolus heterolepis	86.6	*Castilleja coccinea*	10.0
Allium cernuum	80.0	*Solidago riddellii*	10.0
Carex buxbaumii	60.0	*Cornus racemosa*	6.6
Liatris spicata	60.0	*Rosa carolina*	6.6
Andropogon gerardii	56.6	*Schizachyrium scoparium*	6.6
Aster azureus	53.3	*Equisetum arvense*	6.6
Sorghastrum nutans	50.0	*Chrysanthemum leucanthemum*	6.6
Commandra richardsiana	50.0	*Lobelia spicata*	6.6
Fragaria virginiana	46.6	*Bromus ciliata*	6.6
Valeriana ciliata	36.6	*Scutellaria yarvula*	6.6
Lithospermum canescens	36.6	*Tradescantia ohiensis*	6.6
Galium obtusum	36.6	*Luzula multiflora*	6.6
Phlox glaberrima	36.6	*Rudbeckia hirta*	6.6
Pycnanthemum virginianum	36.6	*Smilacina stellata*	6.6
Silphium terebinthinaceum	36.6	*Gentiana andrewsii*	3.3
Lysimachia quadriflora	33.3	*Erigeron philadelphicus*	3.3
Zizia aurea	33.3	*Lilium michiganense*	3.3
Senecio pauperculus	33.3	*Oxypolis rigidior*	3.3
Veronicastrum virginicum	30.0	*Aster spp.*	3.3
Sisyrinchium albidum	30.0	*Equisetum laevigatum*	3.3
Heuchera richardsonii	26.6	*Allium canadense*	3.3
Carex meadii	26.6	*Poa pratensis*	3.3
Panicum lanuginosum	23.3	*Euphorbia corollata*	3.3
Salix glaucophylloides	23.3	*Lactuca canadensis*	3.3
Bromus Kalmii	23.3	*Helianthus grosseserratus*	3.3
Hypoxis hirsuta	20.0	*Eleocharis elliptica*	3.3
Senecio aureus	20.0	*Ratibida pinnata*	3.3
Monarda fistulosa	20.0	*Populus tremuloides*	3.3
Lathyrus palustris	16.6	*Hypericum punctatum*	3.3
Petalostemum purpureum	16.6	*Lespedeza capitata*	3.3
Carex granularis	16.6	*Viola X bernardii*	3.3
Krigia biflora	13.3	*Gentiana quinquefolia*	3.3
Dodecatheon meadia	10.0	*Coreopsis tripteris*	3.3
Silphium integrifolium	10.0	*Juncus dudleyi*	3.3
Solidago nemoralis	10.0	*Thalictrum dasycarpum*	3.3
Viola practincola	10.0		

Typical spring forbs include *Castilleja coccinea, Dodecatheon meadia, Erigeron philadelphicus, Lithospermum canescens, Phlox glaberrima, Senecio pauperculus, Smilacina stellata, Sisyrinchium albidum, Tradescantia ohiensis, Valeriana ciliata,* and *Zizia aurea.*

Prominent summer species include *Allium cernuum, Bromus kalmii, Liatris spicata, Petalostemum purpureum, Pycnanthemum virginianum, Ratibida pinnata, Solidago riddellii,* and *Stachys palustris.*

Commom late summer and fall taxa include *Aster azureus, A. novae-angliae, Rudbeckia hirta, Silphium terebinthinaceum, Solidago nemoralis, S. rigida,* and *Spiranthes cernua.*

The undisturbed portions of Shaw Prairie are dominated by large clumps of *Sporobolus heterolepis.* It is significant that many other high quality prairies in northeastern Illinois are also dominated, or have a high frequency of this grass (Unpublished sampling data, Illinois Natural Area Inventory). These *Sporobolus* - dominated prairies contain soils developed from calcareous glacial parent materials. Because *Sporobolus heterolepis* is a calciphile (Fernald 1950; Steyermark 1963), the calcareous soils and parent materials in northeastern Illinois may have been a factor in promoting the abundance of the grass.

ANNOTATED CATALOG

The following catalog includes 137 species of native and naturalized plants known to occur in the study area. All taxa listed were collected by the authors during field studies conducted during 1976 through 1978. Voucher specimens are deposited in the herbarium at the Morton Arboretum, Lisle, Illinois (MORT).

The order of plant families and nomenclature follow that of Mohlenbrock (1975). For convenience, genera and species have been arranged alphabetically. Species preceded by an asterisk (*) are those that are alien or introduced. Common names and the authors' collection numbers are given, followed by a description of the habitats and relative abundance of each species.

EQUISETACEAE (Horsetail Family)
Equisetum arvense L. Common Horsetail. M764. Rare in prairie.
Equisetum laevigatum A. Br. Smooth Scouring Rush. M302. Common in prairie.
POLYPODIACEAE (Polypody Family)
Onoclea sensibilis L. Sensitive Fern. B167. Occasional in sedge meadow.
Thelypteris palustris Schott var. *pubescens* (Laws) Fern. Marsh Fern. M540. Occasional in sedge meadow.
POACEAE (Grass Family)
**Agropyron repens* (L.) Beauv. Quack Grass. M384. Rare in Prairie.
Andropogon gerardii Vitman. Big Bluestem; Turkeyfoot Grass. B166. Common in undisturbed prairie.
Bromus ciliatus L. Canada Brome Grass. B159. Common in sedge meadow.
Bromus kalmii Gray. Brome Grass. M388. Common in prairie.
Calamagrostis canadensis (Michx.) Beauv. Bluejoint Grass. M525. Occasional to locally abundant in sedge meadow.

Elymus canadensis L. Nodding Wild Rye. M526. Infrequent in prairie.
Glyceria striata (Lam.) Hitch. var. *stricta* (Scribn.) Fern. Fowl Manna Grass. B161, M297. Common in sedge meadow.
Hierochloe odorata (L.) Beauv. Sweet Grass. M575. Rare in prairie.
Muhlenbergia mexicana (L.) Trin. Muhly. M546. Rare in sedge meadow.
Panicum lanuginosum Ell. var. *implicatum* (Scribn.) Fern. Panic Grass. Occasional in prairie.
Panicum virgatum L. Switch Grass. B421. Occasional in prairie.
**Phalaris arundinacea* L. Reed Canary Grass. M424. One small colony seen in the northwest corner of the prairie.
**Poa compressa* L. Canadian Bluegrass. M544. Rare in prairie.
**Poa pratensis* L. Kentucky Bluegrass. M765. Rare in prairie.
Schizachyrium scoparium (Michx.) Nash. Little Bluestem. B417. Common in prairie.
Sorghastrum nutans (L.) Nash. Indian Grass. B415. Occasional in prairie
Spartina pectinata Lind. Prairie Cord Grass. M421. Rare in prairie, common in sedge meadow.
Sporobolus heterolepis Gray. Prairie Dropseed. M387. Dominant grass in prairie.

CYPERACEAE (Sedge Family)
Carex buxbaumii Wahlenb. B106,M9. Common in prairie and sedge meadow.
Carex granularis Muhl. M209. Occasional in prairie.
Carex pensylvanica Lam. M168. Common in Prairie.
Carex stricta Lam. M385. Dominant in sedge meadow.
Carex tetanica Schk. B59, M166. Common in prairie.
Eloecharis elliptica Kunth. var. *compressa* (Sulliv.) Drap. & Mohlenbr. M768. Occasional in prairie.

COMMELINACEAE (Spiderwort Family)
Tradescantia ohiensis Raf. Spiderwort. M390. Common in sedge meadow and prairie.

JUNCACEAE (Rush Family)
Juncus dudleyi Wieg. B160, M307. Common in prairie.
Luzula multiflora (Retz.) Lejeune. Wood Rush. M766. Rare in prairie.

LILIACEAE (Lily Family)
Allium canadense L. Wild Onion. B103. Common in prairie.
Allium cernuum Roth. Nodding Onion. B173. Abundant in prairie.
**Asparagus officinalis* L. Wild Asparagus. B68. Rare in prairie.
Hypoxis hirsuta (L.) Coville. Yellow Star Grass. B52. Occasional in prairie.
Lilium michiganense Farw. Michigan Lily. B141. Occasional in prairie and sedge meadow.
Smilacina stellata (L.) Desf. Small False Solomon's Seal. Common in prairie.

IRIDACEAE (Iris Family)
Iris shrevei Small. Wild Blue Iris. M541. Uncommon in sedge meadow.
Sisyrinchium albidum Raf. Blue-eyed Grass. M164. Common in prairie.

ORCHIDACEAE (Orchid Family)
Spiranthes cernua (L.) Rich. Nodding Ladies Tresses. B412. Our specimen has many morphological characteristics of *S. magnicamporum* Sheviak; however, Dr. C.J. Sheviak (Personal communication 1977) informs us that our specimen is triploid, and therefore, he believes, best put under *S. cernua*.

SALICACEAE (Willow Family)

Salix bebbiana Sarg. Bebb Willow. M10, M29. Occasional in prairie.

Salix discolor Mugl. Pussy Willow. M27. Locally common in prairie.

Populus tremuloides Michx. Quaking Aspen. B58. Locally common around edges of prairie.

FAGACEAE (Beech Family)

Quercus ellipsoidalis E.J. Hill. Hill's Oak. M423. Invading the prairie along its margins; rare.

SANTALACEAE (Sandlewood Family)

Comandra richardsoniana Fern. Fasle Toadflax. B81, M163. Common in prairie.

CARYOPHYLLACEAE (Pink Family)

Arenaria lateriflora L. Sandwort. M202. Local in the southwest corner of the prairie.

RANUNCULACEAE (Crowfoot Family)

Anemone canadensis L. Meadow Anemone. M576. Rare in sedge meadow.

Thalictrum dasycarpum Fisch. & Lall. Purple Meadow Rue. M382. Uncommon in prairie.

Thalictrum dioicum L. Early Meadow Rue. B62. Occasional in Prairie.

CRUCIFERAE (Mustard Family)

Cardamine bulbosa (Schreb.) BSP. M545. Rare in sedge meadow.

SAXIFRAGACEAE (Saxifrage Family)

Heuchera richardsonii R. Br. var. *grayana* Rosend., Butt. & Lak. Prairie Alumroot. B97. Common in prairie.

Rosaceae (Rose Family)

Fragaria virginiana Duchesne. Wild Strawberry. M161. Common in prairie.

**Physocarpus opulifolius* (L.) Maxim. Ninebark. Invading around the edges of the prairie.

Potentilla simplex Michx. Common Cinquefoil. M208. Occasional in Prairie.

Prunus americana Marsh. Wild Plum. M11. Occasional around edges of the prairie.

Rosa carolina L. Pasture Rose. B148. Rare in prairie.

LEGUMINOSAE (Bean Family)

Desmodium canescens (L.) DC. Hoary Tick Trefoil. B155. Rare in prairie.

Lathyrus myrtifolius Muhl. Vetchling. M301. Rare in sedge meadow and prairie.

Lathyrus palustris L. Marsh Vetchling. M299. Common in prairie.

Lespedeza capitata Michx. Round-headed Bush Clover. B414. Occasional in prairie.

Petalostemum purpureum (Vent.) Rydb. Purple P-airie Clover. B169. Common in prairie.

Vicia americana Muhl. American Vetch. B66, M206. Common in prairie and sedge meadow.

GERANIACEAE (Geranium Family)

Geranium maculatum L. Wild Geranium. B63. Occasional around the edges of the prairie and sedge meadow.

EUPHORBIACEAE (Spurge Family)

Euphorbia corollata L. Flowering Spurge. B70. Frequent throughout the prairie.

RHAMNACEAE (Buckthorn Family)

Ceanothus americanus L. New Jersey Tea. B144. Rare in prairie.

**Rhamnus cathartica* L. Common Buckthorn. M157. Frequently found invading the prairie along its edges.

VIOLACEAE (Violet Family)

Viola X Bernardii Greene. M767. Rare in prairies; a hybrid between the following species.

Viola pedatifida G. Don. Prairie Violet. M15. Uncommon in prairie.

Viola pratincola Greene. Common Blue Violet. M165. Common in prairie.

LYTHRACEAE (Loosestrife Family)

Lythrum alatum Pursh. Winged Loosestrife. B163. Occasional in sedge meadow.

Zizia aurea (L.) Koch. Golden Alexanders. B60. Common in prairie.

CORNACEAE (Dogwood Family)

Cornus racemosa Lam. Gray Dogwood. M567. Locally abundant, the most frequent woody invader along prairie edges.

PRIMULACEAE (Primrose Family)

Dodecatheon meadia L. Shooting Star. M201. Locally common in prairie.

Lysimachia quadriflora Sims. Loosestrife. B142. Common in prairie.

GENTIANACEAE (Gentian Family)

Gentiana andrewsii Griseb. Closed Gentian. M465. Uncommon in prairie.

Gentiana quinquefolia L. var. *occidentalis* (Gray) Hitch. Striff Gentian. B402, M549. Uncommon in prairie.

ASCLEPIADACEAE (Milkweed Family)

Asclepias incarnata L. Swamp Milkweed. B197. Occasional in sedge meadow and prairie.

Asclepias purpurascens L. Purple Milkweed. B151, M296. Rare around edges of the prairie.

Asclepias sullivantii Englem. Prairie Milkweed. B100. Uncommon but throughout the prairie.

Asclepias tuberosa L. var. *interior* (Woodson) Shinners. Butterfly-weed. B147. Rare in prairie.

POLEMONACEAE (Phlox Family)

Phlox glaberrima L. ssp. *interior* (Wherry) Wherry. Smooth Phlox. B104. Common in prairie.

Phlox pilosa L. Downy Phlox. B64. Infrequent in prairie.

BORAGINACEAE (Borage Family)

Lithospermum canescens (Michx.) Lehm. Hoary Puccoon. B56, M12. Frequent in prairie.

LABIATAE (Mint Family)

Lycopus americanus Muhl. Common Water Horehound. B442,M383. Common in sedge meadows.

Monarda fistulosa L. Wild Bergamot. B158. Infrequent in prairie.

Prunella vulgaris L. var. *lanceolata* (bart.) Fern. Self-heal. M398. Common in prairie.

Pycnanthemum virginianum (L.) Dur. & Jacks. Common Mountain Mint. M368. Abundant in prairie.

Scutellaria parvula Michx. var. *leonardii* (Epling) Fern. Small Skullcap. B53, M204. Common in prairie.

Stachys palustris L. var. *homotricha Fern.* Woundwort. B154, M295. Common in prairie.

SCROPHULARIACEAE (Figwort Family)

Castilleja coccinea L. Indian Paintbrush. B54, M159. Common in prairie

f. *lutescens* Farw. M160. Always found with the above but less common.

Mimulus ringens L. Monkey-flower. M419. Occasional in sedge meadow.

Pedicularis canadensis L. Lousewort. M162. Infrequent in prairie.

Veronicastrum virginicum (L.) Farw. Culver's-root. B157. Abundant in prairie.

RUBIACEAE (Madder Family)

Galium obtusum Bigel. Wild Madder. B98. Common in sedge meadow.

CAPRIFOLIACEAE (Honeysuckle Family)

**Lonicera* X *bella* Zabel. M158. Invading the prairie along edges.

Vibernum lentago L. Nannyberry. M205. Occasionally invading the prairie.

**Vibernum opulus* L. European High-bush Cranberry. M207. Rarely invading the prairie along its edge.

VALERIANACEAE (Valerian Family)

Valeriana ciliata Torr. & Gray. Valerian. M13. Common in prairie.

**Valeriana officinalis* L. Garden Heliotrope. B71. Locally common in the southeast corner of the prairie.

CUCURBITACEAE (Cucumber Family)

Echinocystis lobata (Michx.) Torr. & Gray. Wild Balsam-apple. B409. Rare, with invading shrubs along the prairie's edge.

CAMPANULACEAE (Harebell Family)

Lobelia spicata Lam. Spiked Lobelia. B156, M300. Common in prairie.

COMPOSITAE (Sunflower Family)

Achillea millefolium L. Common Yarrow. B101. Rare in prairie.

Antennaria plantaginifolia (L.) Richards. Pussytoes; Lady's tobacco. M156. Rare in prairie.

Aster azureus Lindl. Sky Blue Aster. B408, M546. Abundant in prairie.

Aster ericoides L. Heath Aster. M552. Occasional in prairie.

Aster lateriflorus (L.) Britt. Side-flowering Aster. M563. Commonly found under shrubby thickets that are invading the prairie.

Aster laevis L. Smooth Aster. M550. Rare in prairie.

Aster novae-angliae L. New England Aster. B406, M547. Common in sedge meadow and prairie.

Aster ontarionis Wieg. Ontario Aster. M564. Occasional around prairie edges.

Aster puniceus L. var. *lucidulus* Gray. Swamp Aster. B400, M545, M565. Locally abundant in sedge meadow.

Aster sagittifolius Wedem. ex Willd. var. *drummondii* (Lindl.) Shinners. M541. Common in prairie near shrubby edges.

Aster umbellatus Mill. Flat-top Aster. B401. Rare in sedge meadow.

Cacalia tuberosa Nutt. Prairie Indian Plantain. B165, M305. Occasional in prairie.

Cirsium discolor (Muhl.) Spreng. Field Thistle. M464. Infrequent in prairie.

Coreopsis tripteris L. Tall Tickseed. B413. Rare in prairie.

Erigeron philadelphicus L. Marsh Fleabane. M203. Common in prairie.

Eupatorium perfoliatum L. Common Boneset. B423. Rare in prairie and sedge meadow.

Helenium autumnale L. Autumn Sneezeweed. B418. Occasional in prairie and sedge meadow.

Helianthus grosseserratus Martens. Sawtooth Sunflower. B407. Occasional in sedge meadow.

Liatris spicata (L.) Willd. Marsh Blazing-star. B419. Abundant in prairie. f. *albiflora* Britt. Rare at northern edge of prairie.
Parthenium integrifolium L. Wild Quinine. B152. Rare in prairie.
Prenanthes racemosa Michx. White Lettuce. B403. Rare in prairie.
Ratibida pinnata (Vent.) Barng. Drooping Coneflower; Yellow Coneflower. B168. Common in prairie.
Rudbeckia hirta L. Black-eyed Susan. B99. Common in prairie.
Rudbeckia subtomentosa Pursh. Fragrant Coneflower. B416. Occasional in prairie.
Senecio aureus L. Golden Ragwort. B57. Occasional in prairie.
Senecio pauperculus Michx. Northern Ragwort. B105. Common in prairie.
Silphium integrifolium Michx. Rosinweed. B153. Occasional in prairie.
Silphium terebinthinaceum Jacq. Prairie Dock. B143. Common in prairie.
Solidago canadensis L. Tall Goldenrod. M544. Rare in prairie.
Solidago juncea Ait. Early Goldenrod. B146. Common in prairie.
Solidago nemoralis Ait. Field Goldenrod. M543. Common in prairie.
Solidago riddellii Frank. Riddell Goldenrod. M548. Common in prairie.
Solidago rigida L. Rigid Goldenrod. B411. Common in prairie.
Vernonia fasiculata Michx. Common Ironweed. B424. Infrequent in prairie and sedge meadow.

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