Diversity and Floristics of Monocots
orchids and spiny worts

Iridaceae - iris family
A family primarily of Mediterranean climate geophytes. Leaves are basal and equitant - folded and overlapping.

Iris virginica - Blue flag, iris

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Tepals 6, the 3 inner (petals) forming the “flags or standards”
The 3 outer (sepals) forming the “falls”
Note the nectar guides for insects
The 3 stamens are positioned under the 3 petal-like styles
The gynoecium is inferior and forms a 3-parted capsule

Iris versicolor - Blue flag
Iris pseudacorus - Yellow flag
Introduced and potentially invasive
Iridaceae - iris family

*Iris lacustris*
Dwarf lake iris
Endangered species restricted to fringe areas of northern Great Lakes; clonal growth

*Sisyrinchium campestre* - blue-eyed grass
Sisyrinchium found in drier areas than *Iris*

*Crocus vernalis* - Crocus cultivated
Crocuses are all introduced but are some of the earliest flowering plants in the spring. The dried styles of *C. sativus* yields the expensive saffron.

Hypoxidaceae - star grass family

*Hypoxis hirsuta* - Yellow star grass
Family has been placed in Liliaceae or Amaryllidaceae but is now known to be near Iridaceae
Orchidaceae - orchid family
Orchids are mycotrophic (= fungi dependent) lilioids, some are mycotrophic parasites

The family is diverse with about 800 genera and over 19,000 species, mainly of the tropics

Main features of the family:

- Pollen masses or pollinia
- Specialized floral structure and pollination biology
- Reduced stamen number
- Many, minute, dust-like seeds in capsules

Cypripedium acaule - stemless lady-slipper
Corallorhiza striata - Striped coral root

Cypripedium acaule - stemless lady's-slipper

Other lady's-slippers . . .
Cypripedium arietinum - Ram's-head lady's-slipper threatened
Cypripedium calceolus - Yellow lady's-slipper

Lady's-slippers have two functional stamens with pollen masses

The lower petal is elaborated into the labellum - the landing platform
Orchidaceae - orchid family

Cypripedium reginae
showy lady’s-slipper

Orchidaceae - orchid family

Cypripedium candidum
white lady’s-slipper
Threatened, fen or calcareous soils

Orchidaceae - orchid family

All our other orchids have only 1 functional stamen with one or two pollinia

The stamen is situated on a column formed by fusion with the top of the inferior gynoecium

labellum

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Other floral parts . . .
Orchidaceae - orchid family

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labellum
Other petals
Other floral parts . . .

Aplectrum hyemale
Putty root, Adam and eve

Arethusa bulbosa - Dragon's mouth [Special concern]

Calypso bulbosa - calypso orchid [threatened]
Orchidaceae - orchid family

Calopogon tuberosus - grass pink: note the labellum on top!

Goodyera pubescens
Rattlesnake plantain

Goodyera tesselata
Rattlesnake plantain

Corallorhiza trifida - Early coral root

Corallorhiza striata - Striped coral root

Galearis spectabilis - showy orchid

Malaxis monophylla - adder’s mouth
Orchidaceae - orchid family

Platanthera leucophaea - Prairie fringed orchid
State endangered, Federally threatened

Pogonia ophioglossoides - snake mouth
Spiranthes cernua - nodding ladies’-tresses

Dioscoreaceae - yam family

Dioscorea villosa - wild yam
Small family, mostly of the tropics, with viney stems and net-veined leaves. Fruits are 3-winged.
Source of edible yam; sources of steroidal, cortisones, first oral contraceptives (diosgenin, progesterone)

Commelinid Monocots

Tradescantia ohiensis - spiderwort
Carex pensylvanica - Pennsylvania sedge
The last group of monocots that start with spiderworts with showy flowers but no nectar and ends with grasses and sedges with reduced florets for wind pollination
The group shows trends in reduced flowers, bracted inflorescences, loss of perianth, and shift to wind pollination
Commelinaceae - spiderwort family

*Tradescantia ohiensis* - spiderwort

Family of small herbs with succulent stems, stems jointed; leaves sheathing. Family does not produce nectar, but showy flowers for insect pollen gathering.

Commelinaceae - spiderwort family

*Commelina communis* - day flower

Inflorescence often bracted

Flowers actinomorphic or zygomorphic

*Commelina erecta* - Erect dayflower

Special concern native of cliffs of Driftless Region

*Tradescantia bracteata* - Bracted spiderwort

*Tradescantia occidentalis* - Prairie spiderwort

*Tradescantia ohiensis* - spiderwort
Pontederiaceae - pickerel weed family

Aquatic family of emergents or floaters. Water hyacinth (*Eichhornia*) from tropical America is invasive species in subtropical areas of the world.

*Eichhornia crassipes* - Water hyacinth

Invading Florida

Pontederiaceae - pickerel weed family

Pickerel weed has glossy heart-shaped leaves, superficially like *Sagittaria* but without net venation. Flowers are in congested showy purple inflorescences.

*Pontederia cordata* - Pickerel weed

Flowers are showy, insect pollinated, often with trimorphic heterostyly

*Pontederia* has somewhat fused perianth

*Heteranthera dubia* - Water star grass

(*= Zosterella dubia*)

*Heteranthera* is a widespread but often overlooked emergent perennial aquatic with yellow flowers