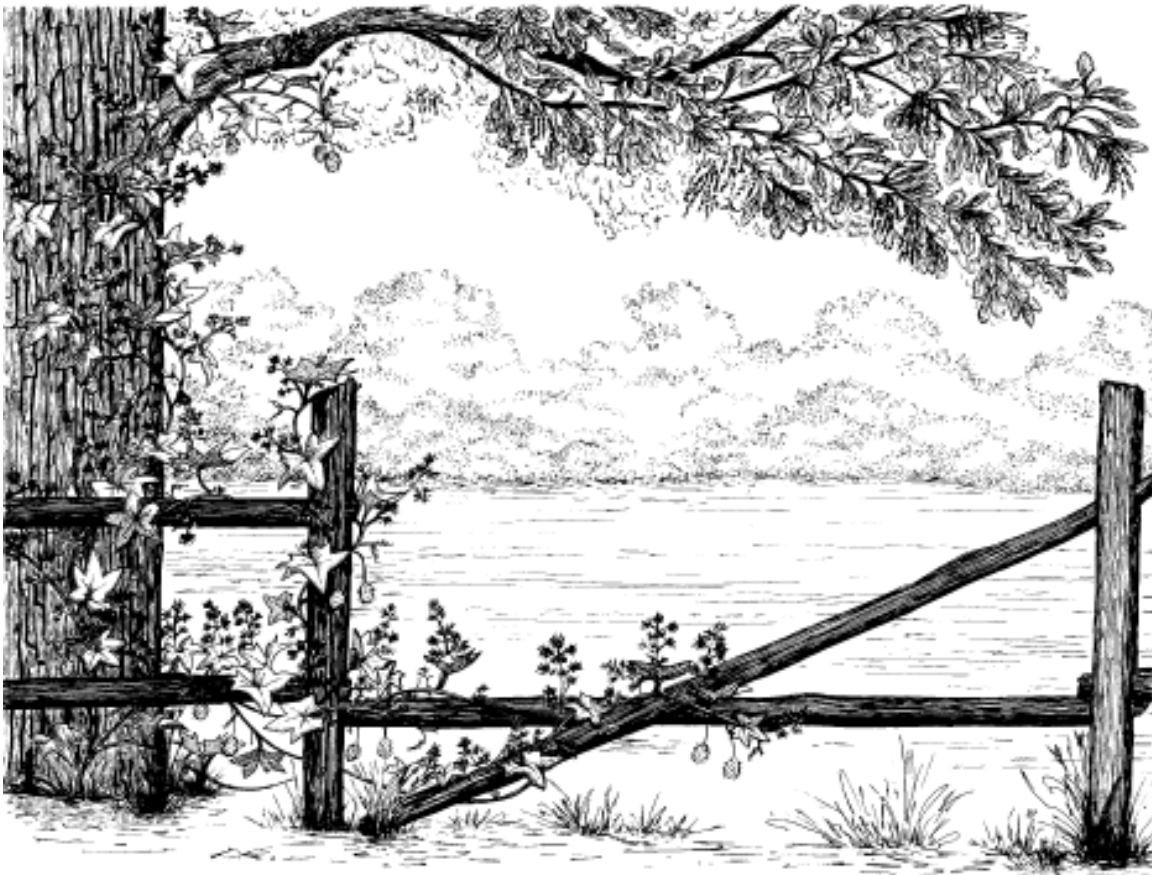


A-Z Plants

Introduction, ferns & related plants

revised 16 January 2015



INTRODUCTION

The following information is a product of nursery operations & customer service at Genesis Nursery, Inc. It is privately produced & distributed. The plant data is arranged in taxonomic groups, in a somewhat traditional order. In each taxonomic group, the plants are arranged alphabetically by family, & alphabetically by genus within the family, then by species alphabetically.

The outline below is an idealized list of information for the individual species. A species that is of interest to you may not have been treated or updated yet, some information has not been located yet, or certain information maybe obscure or unknown.

FAMILY Author's name & date **Family Common Name** Comments. Family characteristics culminating in fruit description when available.

GENUS Author **Genus Common Name** *Family Etymology* genus name. Comments. Genus characteristics culminating in fruit description. X = base chromosome number. Current alternate then former *Family* assignments. Current, alternate, then former *Family* assignments. Former *Genus* assignments. Additional genus common names with orthographic variants

Genus species Linnaeus (authors not abbreviated here) *State abbreviation (status) [**new or pending botanical names**] COMMON NAME, aka MORE COMMON NAMES [ORTHOGRAPHIC VARIANTS INCLUDED, (AF) = AFRIKAANS, (CH) = CHINESE, (D) = DANISH, (DU) = DUTCH, (E) = ESTONIAN, (F) = FRENCH, (FC) = FRENCH CANADIAN, (FI) = FINNISH, (G) = GERMAN, (GR) = GREEK, (I) = ITALIAN, (J) = JAPANESE, (K) = KOREAN, (N) = NORWEGIAN, (PO) = POLISH, (P) = PORTUGUESE, (PB) = PORTUGUESE BRAZIL, (R) = RUSSIAN, (SC) = SPANISH CUBAN, (SP) = SPANISH, (SW) = SWEDISH],* *Native American names* & translation, (etymology species epithet) Common name origins. Lower Taxonomic units, *subgenera*, etc.,

Habitat: Verbal accounts of natural habitats. **distribution/range:** Mohlenbrock notes verbatim, including fractions of Illinois, ¼, ½, &c. Fractions are not used in any other section. Various comments, to leave this blank is sin against the patron saint Carl Sauer. Say three Hail Barrows, & bow & make obeisance towards The Berkley School. GIS, we don't need no stinking GIS. Illinois county distribution map.

Culture: propagation: Seed set; methods from seed (greenhouse & bareroot plant production; field sown seed).

Growth patterns (Growth rate . Seedling vigor . Vegetative spread rate . Seed spread rate/self sowing .) **Seed counts** (shorten names & dates, no 4-digit dates, replace with , replace : with , .) **Seed longevity.**

Kew Royal Botanic Garden Seed information Database

Storage behavior, average 1000 seed weight, germination, oil content, protein content.

seed counts & rates: Seeding rates as published or as GNI recommends.

availability: Plant & seed seasonal commercial availability notes.

Ray Schulenburg prop notes.

asexual propagation: Vegetative methods, from division or cuttings, seasons.

cultivation: Plant spacing. Tolerances (Tolerant of textured soils. Anaerobic tolerance. CaCO₃ tolerance . Drought tolerance.

Fertility requirement . Fire tolerance . Salinity tolerance . Shade tolerant. pH .) Hardiness Zone. **Gardening recommendations.** **Season & method of planting/transplanting,** etc. Recommended companion plants (not natural associates) for plugged plantings. Chemical controls.

bottom line: Field establishment timing & method, ultimately green house from seed. (In 2010, we added a (literal) bottom line of guidelines for the field establishment of natives. The Bottom Line is a no-nonsense recommendation of seasonal planting of native species. The data is summarized in "Split Seeding Guide The Bottom Line: The Guide to the Timing & Placement of Native Seeds for Field Establishment" (Genesis Nursery 2010), also on our CD, & updated as additional data become available. The Guide also covers the broadcast or drilling needs of each species. No more guessing! No more job specs with "drill grasses, broadcast forbs". Data is being updated in 2014.)

greenhouse & garden: Optimum greenhouse timing & methods from seed.

Description: General plant form, i. e. growth habit, height, spread; underground parts & depth; bark, trunk, twigs & wood for trees); stems or culms; leaves (for grasses sheaths, auricles, collar, ligule, blade, heads)(for sedges) peduncles, stipules, spikes; inflorescence; flowers (alternate color descriptions)(for asters ray fls, disk fls) X-merous (not for grasses); calyx; fruit (for aster achene, pappus); seed; N chromosome counts. **key features:** Characteristics helpful in identifying the species.

Comments: status: ET or Nox, weedy **phenology:** Ultimately to include as available the phenophases: emerges, flower buds, bloom, maturing, die back, carbon metabolism, C3, C4, CAM; Ripening & harvest dates. **Miscellanea, including uses, importance, facts.** Genetic seed sources. Local authorities including Mead, Short, Fell, Dobbs, Kibbe, Lapham, Patterson, Nuttall, &c..

Associates: Listing interactions with other organisms, including you. Associated plants are rarely mentioned, except as potential symbionts for hemi- & holoparasites. Pollinators, insects, birds, mammals, microorganisms, including symbiosis, pests.

ethnobotany: Human associations, such as edible, allergens, toxins, technological uses.

VHFS: Varieties, hybrids, formas, synonyms, homonyms, antonyms, *nomina nuda*, & other nomenclatural woes. Some synonym lists anticipate impending nomenclature changes. Horticultural cultivars or varieties. In synonym lists, repeated generic & specific term are reduced to their 1st letter. Form may be abbreviated f or fo. (Authors are abbreviated here)

Species specific bibliographic sources.

Photos, line drawings, North American county distributions.

* Dangling commas are intentional, indicating the common name list is incomplete, as all the information in this manuscript is open ended & incomplete.

Conservation & noxious status are largely from <http://plants.usda.gov> & <http://www.ars-grin.gov>.

Plant distribution maps are being added. The maps include Illinois county records, northern North America county records, some genus distributions, & some specialty maps. Much thanks to Dr. John Kartesz & his BONAP project & to the maps of [usda.plants.gov](http://plants.usda.gov) & ILPIN. "It is often said that a picture is a thousand words. If that is true, then a map is worth a million, & maybe more." Harm J. de Blij, *Why Geography Matters More Than Ever*, 2012.

Chromosome counts are largely from *fna*, some from Jepson eFlora or Flora of China online.

The opinions & information presented below is not necessarily the opinion of Genesis Nursery, Inc., or its employees. Listing a cultural suggestion or seeding rate does not mean we would recommend or endorse it!

An increasing amount of botanical name etymology is being periodically added. The meaning & origin of plant names are a significant part of the body of knowledge of our flora. Understanding these names helps to understand the plants, & their relationship to other plants, peoples, places, & cultures.

In the manuscript, our botanical nomenclature is inconsistent & evolving, initially somewhat after Swink & Wilhelm, 1994, *Plants of the Chicago Region*, with influence from Mohlenbrock & Gleason & Cronquist, Reznicek et al (2011) & a strong leaning towards the Flora of North America, BONAP, plants.usda.gov, & a lot of a Weakley (2007, 2008, 2010, 2011, 2012). We use a taxonomy of the rich & famous. If you're paying for the project, honey, you call that plant anything your little old heart desires.

Immediately after some species names there is an asterisk & a state abbreviation following the botanical name. This indicates the species is endangered, threatened, or special status in that state (or noxious weed), as we are aware at press time. (Much of the status data is drawn from <http://plants.usda.gov> & Freckmann & is incidental to other work.)

Common names have been collected from many sources & are not credited. Some unusual & foreign names are from <http://www.ars-grin.gov> & <http://luirig.altervista.org>. Most French names are French Canadian & are from the *Flora of North America*.

We do not include numerical coefficients in the species list. As Edward Abbey says, "anything reduced to numbers or algebra is not very interesting."

Detailed explanations of the propagation recommendations are in the closing section.

This is a draft. If something doesn't make sense, or is out of context, don't worry. The universe is insane. Everything else is redundant. It may not make sense in the final draft either. There is a lot of apparently contradictory information in restoration.

The following list is intended for in-house use at Genesis Nursery, Inc., its employees, future management personnel, & friends of the nursery. Prerequisites to receiving this manuscript are an abiding concern for our flora, monetary or otherwise, & a I don't give a @&^~ attitude about proper punctuation, capitalization, & sentence structure, & an appreciation of creative spelling of taxonomic terms. Remember, the Queen's English is now in the hands of the stockholders. If you can only spell a word one-way, you have precious little imagination. Mark Twain said something like that. &, having typed all this myself, I'm sure they're no Mohr type O graphical eros. {Bad Kurt Vonnegut joke: Restaurant patron to waiter "What's that needle doing in my soup?" Waiter "I'm sorry sir, that's a typographical error, that should be a noodle."}

The choice of species & data is strictly arbitrary. There is a bias towards northwest Illinois in many of the historic sources, which will eventually include Kibbee, the Fells, Dobbs, & Patterson. These sources merit inclusion if only for their historic perspective.

The selection includes those species that we grow, & other plants in the trade, native & introduced, & some weeds, ethnobotanical species, neat things from nearby natural areas, & data from local published floras. Introduced ethnobotanical species are included because some plants were adopted quickly (in response to the post-Columbus Great Dying?), or, as some think possible pre-Columbian introductions. Aggressive introductions are included with some control guidelines, to avoid having to talk about this on the phone with customers. Nurse crops, turf products, "annuals" & some weeds are included for a better overall understanding of their nature. The most dangerous enemy is the one you do not know.

Others have expressed that it would be nice to have a source where it was possible to find many things about a native plant. This was a project Jock Ingels (friend & mentor) of La Fayette Home Nursery felt strongly about. Many excellent (& several bad) books on prairie have been written, with more published every day, but good basic information on a single species is spread through a dozen volumes or websites. (Too much synecology, not enough autecology.)

Morphological variation is one measure of genetic diversity. Variation within a species, subspecies, variety, & *forma*, is one measure of genetic diversity. Yarnell noted that the ethnologically utilized species in the Great Lakes basin had a higher incidence of varieties & forms than the flora as a whole. Presumption aside, this is an expansion of this to the Illinois flora & any other plants that I like. I hope to expand on this them, one reason for all the nonsense with *var.* & *f.* In pre-Columbian farms, *Zea* was turned into a biological monstrosity in 2500 years. What have we done to plants inadvertently, & what has been done advertently in Indian orchards, vineyards, & nut farms? This is a reason for all the crazy $x = 7$ & $2n = 14, 28, 42$, etc. You may notice that some species that have a range of chromosome numbers & a number of subspecies or varieties.

Ambrosia, *Rubus*, *Cucurbita*, *Craetagus*, *Rosa*, melons, & lagenerias. Is there any relationship between the ethnobotanical species, how & when they were harvested & the plants reproductive strategies & capabilities, ---- heavy seed production, rhizomes, stolons, rooting at the nodes? Did 10,000 years of pulling stems of *Hierochloë* & *Apocynum* select for rhizomatous individuals? (*10,000 years is not enough to change the genetics of plants, but it is enough time to select for certain traits.*) Is the use of BASSWOOD bark & bast select for the ability to sprout from the stump, or did some species of ecological partner/megafauna also eat the bark? Did the use of COMMON MILKWEED stems for fiber select for rhizomatous plants? How many fruits were eaten before *Fragaria* put out its first runners? If it matters, *Fragaria* is not a good analogy; cause seeds are widely spread by birds & small mammals. Or, humans may merely be post-Pleistocene proxies for some missing megafaunal partners.

4) Many plants have a sometimes-questionable nativity, i.e. *Poa pratense*, *Chenopodium albidum*, *Portulaca oleracea*. Many Eurasian plants were quickly adapted for ethnobotanical uses. Is there linguistic evidence for pre-Columbian origins? Did Vikings bring LAMBS QUARTER to Lake Huron? Well, of course they did.

The following information contains basic data relevant to establishing native plants in the landscape. Those writing native landscape & restoration projects have an obligation to write the most accurate, the most potentially successful specifications possible. This industry is now & has historically been based on dry stored seed installed without artificial moist stratification. The writers of projects must be familiar with the horticultural needs of the native species they are using in order to write effective, economical projects. Designers need to use materials that will flourish in the context of the project & the timing of the seeding & planting. If the industry continues to ignore the basics, it will be doomed to ever more mediocre or failed projects. Filling job specifications with fluent legalese does not make a successful planting, knowing your natives does. No more cutesy woodland ephemerals under 2" dbh lollypop trees on baked clay urban "topsoils".

"Some of them will saye, seeing that I graunte that I have gathered this booke of so many writers, that I offer unto you a heape of other mennis laboures, and nothing of mine own ... To whom I answere that if the honye that the bees gather out of so many floure of herbes, shrubbes, and trees, that are growing in other mennes meadowes, feldes, and closes may justelye be called the bee's honye ... so maye I call that I have learned and gathered of so many good autores ... my booke."

William Turner, 1551, Suggested by A. W. Anderson in *The Coming of the Flowers*, from Jones & Fuller, 1955.

List of Families

PTERIDOPHYTA

“Ferns are remarkably rare on the prairies; indeed I do not recollect having met with a single specimen of any species of that extensive tribe in the more open prairies. This may, perhaps, be owing to the absence of that shade & constant moisture in which most of these plants delight. On the skirts of the timbered tracts, several kinds occur, which are usually found in the barrens, as *Pteris aquiline*, *Polypodium dryopteris*, & *P. hexagonopterum*; & in the ‘groves’ I observed many other species common in the Western States. The same remarks will apply, in a good degree, to the tribe of mosses.” (Short 1845)

ASPLENIACEAE Frank 1877 **SPLEENWORT FAMILY** A single genus of about 720 species.

ASPLENIUM Linnaeus 1753 **SPLEENWORT** *Aspleniaceae* *Asplenium* (a-SPLAY-nee-um) From Greek *a*, not, without, & *splen*, spleen, referring to supposed medicinal powers, or New Latin, alteration of Latin *asplenium* spleenwort, from Greek *asplēnon*, irregular from *splēn* spleen, akin to Latin *lien* spleen, thought by Dioscorides to aid spleen disorders. Hardy & tender ferns, a large cosmopolitan genus of about 720 species, with centers of diversity in the Appalachians, the mountains of Central America, the Andes, & the Himalayas. Formerly included in the *Polypodiaceae*.

Asplenium platyneuron (Linnaeus) Britton, Sterns & Poggenburg *ME, NY EBONY SPLEENWORT, aka *DORADILLE ÉBÈNE* (*platyneuron* (pla-tee-NEWR-ron) with broad veins or broad nerves.) The common name is a reference the stalk turns a shining black with age, & to the supposed medicinal use of the plant.

Habitat: Moist to dry soils of forests, woodlands, oldfields, on outcrops, especially of calcareous rocks (w07). Forest floor or on rocks. Shady sandstone. distribution/range: “Rare in northern Illinois. An old station in a wood south of Argyle is now lost. There are 2 present stations in Shirland Township, one in Section 28 & one in Sugar River Forest Preserve. We know of it in Boone County, & in Ogle County at Castle Rock, White Pines State Park & 2 miles east of Camp Lowden.” (ewf55) Maine to Florida, west to Iowa & eastern Texas. “This species is migrating northward on the northern portions of its range in the upper Great Lake states” (WH Wagner Jr & DM Johnson 1981). *A platyneuron* is the only North American fern that also grows in South Africa.

Culture: asexual propagation: Root division while dormant or by spores.

cultivation: Partial shade to full shade. Best in gritty, humusy dry to mesic, well drained soils in partial shade. pH 6.8-7.2. Avoid overwatering, needs excellent drainage. Does not tolerate flooding. Tolerates some drought, but water to keep green in hot dry summers.

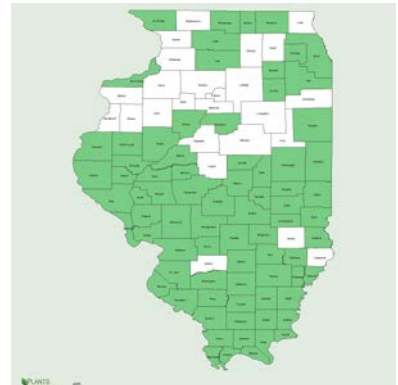
Description: Evergreen, 15(12-18)” tall; fertile leaves dark green, infertile leaves paler.

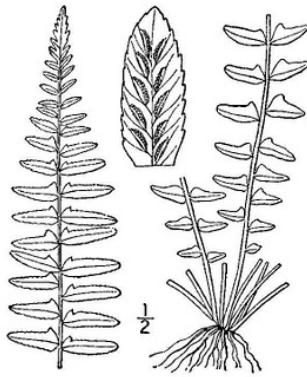
Comments: status: Special Concern in Maine. Exploitably vulnerable in New York. phenology:

Species is an ecological generalist characteristic of disturbed woodlands.

Associates: No serious problems. Susceptible to crown rot & slugs.

VHFS: [*A platyneuron* (L) Oakes]



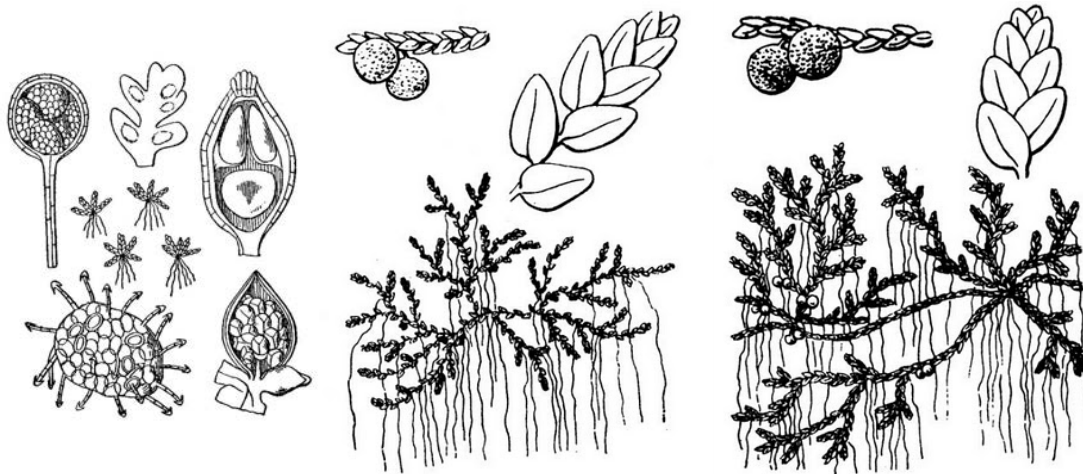


Asplenium platyneuron

AZOLLACEAE Wettstein 1903 **MOSQUITO FERN FAMILY**

AZOLLA Lamarck 1783 **WATER FERN** *Azollaceae* *Azolla* (a-ZOL-la) from Greek *azo*, to dry, & *oulla*, to kill, or death by drought, for drying kills the plants. 7 species of floating, aquatic ferns (3 in northern North America) of tropical to temperate regions. $x = 22$. Formerly *Salviniaceae*??

Azolla spp. **WATER FERN**, aka **AZOLLA**, **FAIRY MOSS**, **FERN AZOLLA**, **MOSQUITO PLANT**, Sometimes found in quiet waters among the duckweeds, small floating aquatic fern that can fix nitrogen with a symbiotic blue-green algae *Anabaena azollae*.



Azolla spp.

BLECHNACEAE (C Presl) Copeland 1947 or *Blechnaceae* C Presl. From Greek a kind of fern, from Greek *blechnon*, an ancient name for ferns in general. A family of 9 or 10 genera, & about 250 species, mostly tropical & south temperate, 2 genera & 6 species in northern North America. *Woodwardia* is north temperate. Characteristics of the family are “the anastomoses of veins along the axes of the blade to form a series of areoles or a single continuous vein along which the *sorus* is borne, elongate sori with indusia opening toward midvein, bilateral spores, & chromosome base numbers of generally $x = 28-36$.” (Cranhill in fna)

WOODWARDIA JE Smith 1793 **CHAIN FERN** *Blechnaceae* New Latin, in honor of Thomas Jenkinson *Woodward* 1745-1820, English gentleman botanist, FLS, & New Latin *-ia*. A genus of 14 species (3 in northern North America), of North America, Central America, Mediterranean Europe, & east Asia. **CHAIN FERNS** having linear lanceolate pinnae & sori in rows. $x = 34, 35$. Formerly placed in *Polypodiaceae*, *Anchistea* C Presl, or *Lorinseria* C Presl.

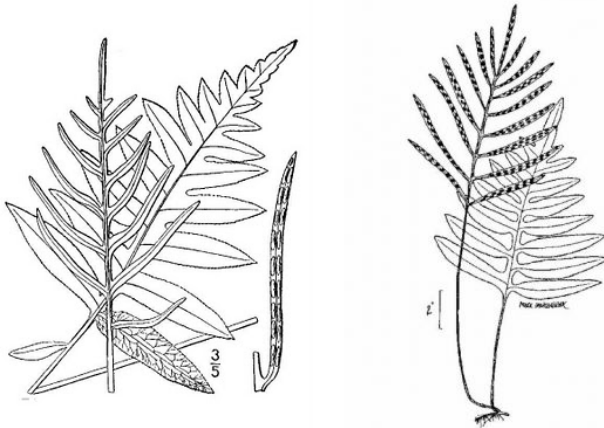
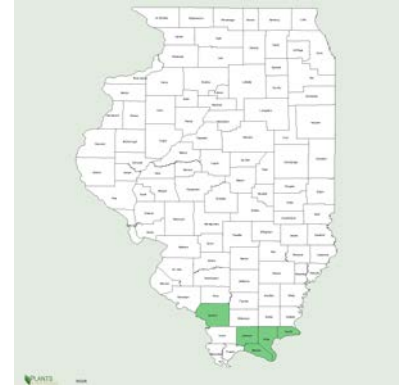
Woodwardia areolata (Linnaeus) T Moore *IN, ME, MI, NH, NY, PA NETTED CHAIN FERN, (Latin *areolatus*, with small open places, from *areola*, *areol-*, a small open place, & *-atus*, possessive of or likeness of something.)

“Acidic bogs, seeps, & wet woods, rarely on rock of siliceous cliffs & ledges on northern edge of range; 0-600 m” (Cranfill in fna).

Description: N 2n = 70. key features:

Comments: status: Rare species in Indiana. Possibly extirpated in Maine & Michigan. Endangered in New Hampshire. Exploitably vulnerable in New York. Threatened in Pennsylvania. Sterile specimens are easily confused with *Onoclea sensibilis*.

VHFS: [*Acrostichum areolatum* Linnaeus, Sp. Pl. 2: 1069. 1753; *Lorinseria areolata* (L) C Presl, *L areolata* (L) K Presl]



Woodwardia areolata

Woodwardia virginica (L.) Sm. - VIRGINIA CHAINFERN,



DENSTAEDTIACEAE Ching (or Pichi Sermollii 1970) **BRACKEN OR HAY-SCENTED FERN FAMILY**

Denstaedtia named after A. W. *Dennstaedt*, 1776-1826, German botanist. A family of 20 (16) genera & about 400 (370) species, cosmopolitan, mostly tropical. The circumscription is controversial & uncertain. “The family is variously circumscribed, in the strict sense including only eight genera, while in the broadest sense encompassing about half the recognized genera of higher ferns” (RE Holttum 1947).

RE Holttum, 1947. A revised classification of the leptosporangiate ferns. J Linn Soc, Bot 51: 123-158.

PTERIDIUM Gleditsch ex Scopoli 1760 **BRACKEN** *Denstaedtiaceae* *Pteridium* New Latin, *pterido-*, from Hellenistic Greek *περιδ-*, *περίς*, *pterid-*, *pteris*, & *-ιον*, *-ion*, a diminutive suffix, or Greek *pteridion*, a small fern, a diminutive of *Pteris*, a fern genus. X = 28.

Pteridium aquilinum (Linnaeus) Kuhn in Decken BRACKEN FERN, aka BRACKEN, EASTERN BRACKEN, FOUGÈRE-AIGLE COMMUNE, (*aquilinus -a -um* aquiline, eagle-like, from *aquila*, an eagle & *-inus, -ium*, belonging to or resembling, characteristic of.)

Habitat: Dry open woods, pastures, recently burned clearings, &c. A worldwide weed, one of the most widespread species of vascular plants.

Culture: cultivation: Said to be difficult to transplant. Tolerates moderate to strongly acid soils.

Description: Perennial fern forming large colonies. $2n = 104$.

Comments: status: phenology: Blooms ?

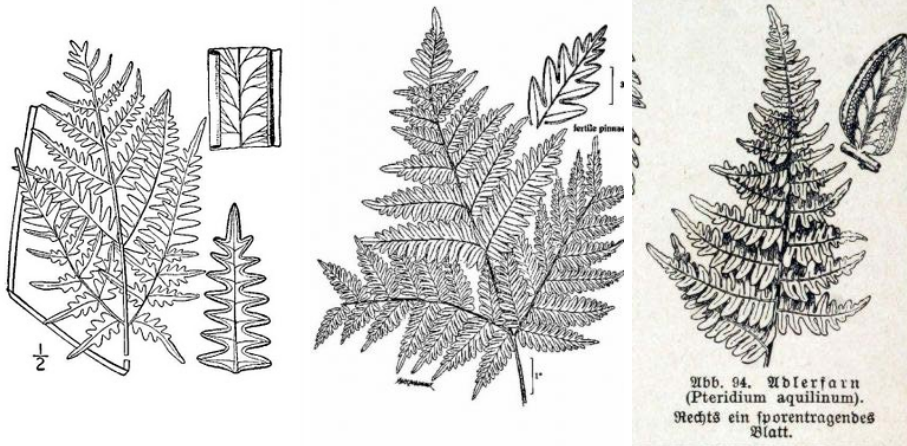
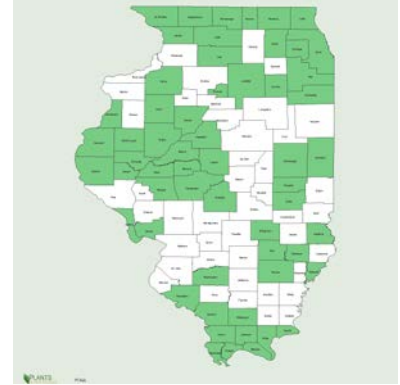
As *P. latiusculum* (Desv) Hieron “Our only weedy fern, but it adds to the beauty of the landscape by the artistic shape of the plants & its habit of growing in large patches either open or wooded. The young sprouts are often cut down several times by frost before growth is established.”

(ewf55)

Associates:

ethnobotany: ☞. BRACKEN has been shown to contain thiaminase, shikimic acid, & other compounds with mutagenic & highly carcinogenic properties. Young sprouts are available in spring (May to June), & are widely consumed in some areas. When cattle graze on BRACKEN, some of these compounds are transmitted to humans through the milk. (w07) Young sprouts used in soup by Ojibwa (sm32). Roots used by Ojibwa & Menominee as medicinal beverage (sm32, 23). Found growing at several archaeological sites by Yarnell.

VHFS: One species, somewhat controversial, almost worldwide, twelve varieties world wide, four in northern North America. “*Pteridium aquilinum* var *pubescens*, var *latiusculum*, & var *pseudocaudatum* are in subsp *aquilinum*, & var *caudatum* is in subsp *caudatum* (Linnaeus) Bonaparte.” fna.

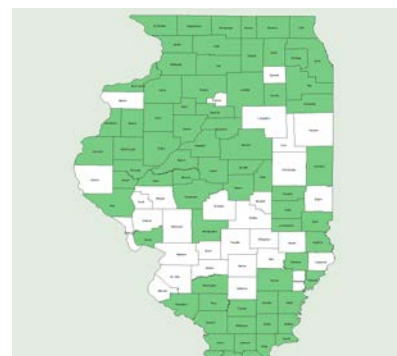


Pteridium aquilinum

DRYOPTERIDACEAE Herter (or *Dryopteridaceae* Ching 1965) **WOOD FERN FAMILY** *Dryopteris* from the Greek *dryos* oak, or tree, & *pteris* a kind of fern, from *pteron*, a feather, a wing. A worldwide family, concentrated in temperate & montane areas. A family of about 60 genera & 3000 species, or 40-45 genera & 1700 species if *Onocleaceae* & *Woodsiaceae* are excluded.

ATHYRIUM Roth 1799 **LADY FERN** *Dryopteridaceae* *Athyrium* (a-THI-ree-um) possibly from Greek *athyros*, doorless, referring to the late opening indusium of *A. filix-femina*. A genus of 180 species worldwide, concentrated in east & southeast Asia, with 2 species in northern North America. $x = 40$. Sometimes placed in the *Athyriaceae* or in *Woodsia* Herter 1949.

Athyrium filix-femina (Linnaeus) Roth. The species name will also be spelled as *filix-foemina* in some older reports. **LADY FERN**, aka **ASPLENIUM** **LADYFERN**, **ATHYRIE FOUGÈRE-FEMELLE**, **COMMON LADYFERN**, **FELCE FEMINA**, **NORTHEASTERN LADY FERN**, **NORTHERN LADY FERN**, **SOUTHERN LADYFERN**, **SUBARCTIC LADYFERN**, *A'sawan* (Ojibwa), (*filix-femina* (FI-likes-FAY-mi-na) fern & lady, referring to the relatively delicate fronds of **LADY FERN** as compared to *Dryopteris filix-mas* **MALE FERN**)



Habitat: Damp thickets, meadows, swamps, & brooksides. In the se USA, W12 recognizes 2 varieties as species, which grow “Moist forests, rock outcrops on grassy balds at high elevations, & in moist forests.”
distribution/range: Circumboreal.

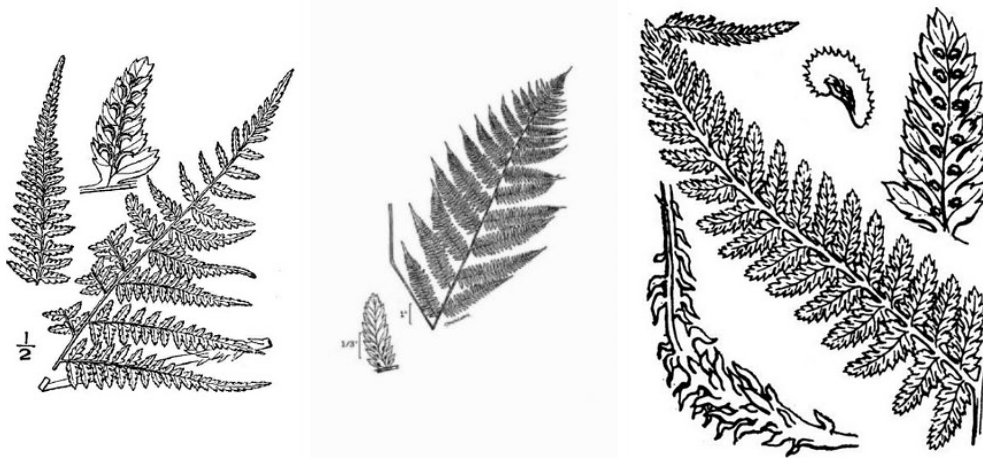
Tolerates dense shade.

Description: N 2n = 80. key features:

Associates: Reported as rabbit tolerant.

ethnobotany: Reputed taeniocide, an agent that destroys tapeworms. Roots used by Ojibwa & Pottawatomie (den28; sm33). Ojibwa used for stoppage of urine (den28).

VHFS: [*Polypodium filix-femina* Linnaeus] Several varieties exist, some of which have been treated as varieties, subspecies, & species.



Athyrium filix-femina

DEPARIA Hooker & Greville 1829 *Dryopteridaceae*

DRYOPTERIS Adanson 1763 **BUCKLER FERN. WOOD FERN, SHIELD FERN, DRYOPTÈRE** *Dryopteridaceae*
Dryopteris Dryop'teris (dry-OP-ter-is, or dree-OP-te-ris) oak fern, the wood-fern genus, from the Greek *drys* oak, or tree, & *pteris* a kind of fern, from *pteron*, a feather, a wing, Sanskrit *patati* he flies, falls, in possible reference to the plants habitat. *Dryopteris* is a genus of about 250 species, principally in temperate Asia, with 14 species & numerous hybrids in northern North America. X = 41. Formerly placed in *Aspidiaceae* or *Aspleniaceae*, or seen in the *Polypodiaceae*.

Dryopteris carthusiana (Villars) HP Fuchs [Formerly *Dryopteris spinulosa* (Muell.) Watt.] *AR, KY, NY, TN **SPINULOSE WOOD FERN, aka SPINULOSE SHIELD FERN, WOOD FERN,**

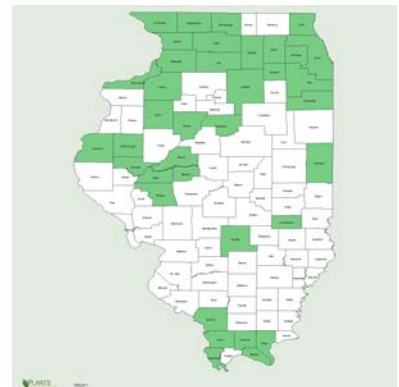
“Rather common in moist woods & ravines, replacing, to a great degree, the preceding (*D. intermedia*) which is more common south of us. In favorable places, as in Campbell woods in Rockton Township, the fronds are large & the lower pinnae are large & long. It is frequently found in moist open places, having survived the removal of the shade.” (ewf55)

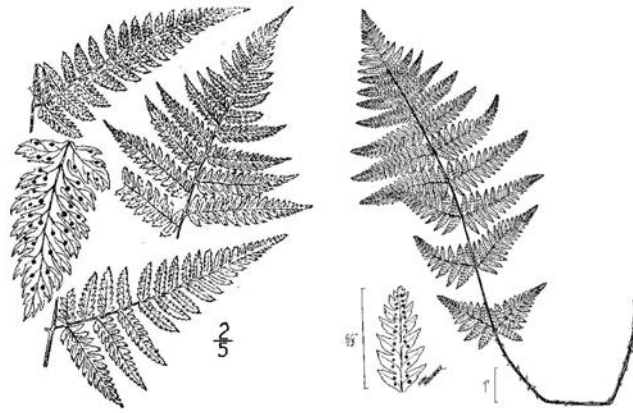
Threatened in Arkansas & Tennessee. Special Concern in Kentucky.

Exploitably Vulnerable in New York.

VHFS: Now known as *Dryopteris carthusiana* (Vill) HP Fuchs.

[*Dryopteris austriaca* (Jacq) Woyнар ex Schinz & Thell var *spinulosa* (OF Müll) Fisch, *D. spinulosa* (OF Müll) Watt]





Dryopteris carthusiana

Dryopteris cristata (Linnaeus) Gray *GA, NY, TN, WA CRESTED SHIELD FERN, aka CREST FERN, CRESTED BUCKLER FERN, CRESTED WOOD FERN, *DRYOPTÈRE À CRÊTES*, SHIELD FERN, (*cristatus -a -um* kris-TAH-tus crested, comb-like)

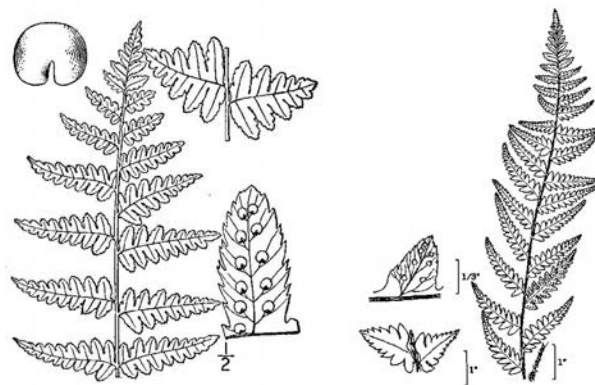
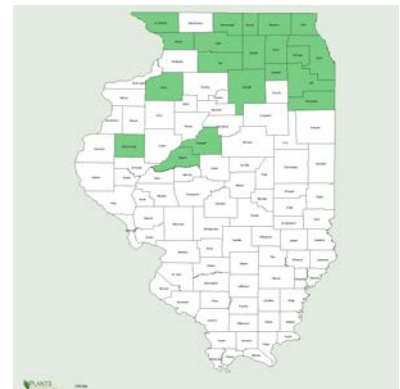
Habitat: Boggy or swampy open ground & thickets or woods.

“Uncommon. In two rather different situations: a damp gully in Mulford woods on Kishwaukee River above the Forest preserve & a similar place in the sandy woods east of Roscoe; in open boggy places in Rockton Township. It is also known in Ogle County in the Castle Rock area & in White Pines State Park but it is most frequent in boggy places in northern Boone County.” (ewf55) distribution/range: Circumboreal.

Comments: status: Special Concern in Georgia (?). Exploitably vulnerable in New York. Threatened in Tennessee. Sensitive in Washington.

Associates: ethnobotany: Root used by Ojibwa for medicinal beverage (sm32)

VHFS: [*Aspidium cristatum* (L) Sw, *Polypodium cristatum* L, *Thelypteris cristata* (L) Nieuwl]



Dryopteris cristata

Dryopteris filix-mas (Linnaeus) Schott *ME, VT, WI MALE FERN, aka *DRYOPTÈRE FOUGÈRE MÂLE* (*felix-mas* FIL-iks-mas, literally FERN MALE, to distinguish it from the more delicate LADY FERN.)

Habitat: distribution/range: Rare in Illinois, Cook County.

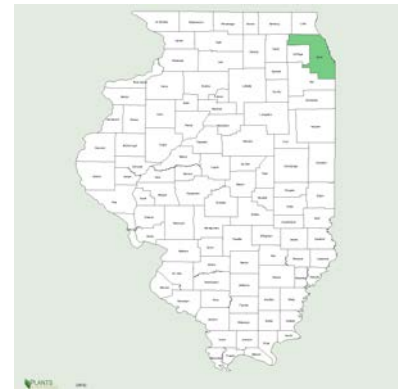
Description: Leaves monomorphic, dying back in the winter. $N 2n = 164$.

Comments: status: Endangered in Maine. Threatened in Vermont. Special Concern in Wisconsin. phenology: Blooms

Associates:

ethnobotany:

VHFS: [*Polypodium filix-mas* L.] “The taxonomy of *Dryopteris filix-mas* is not well understood. In North America, this fern has been considered both an auto- & an allopolyploid & may be composed of at least two closely related taxa (fna).”



Dryopteris filix-mas

Dryopteris intermedia (Muhlenberg ex Willdenow) A. Gray *IA, NY WOOD FERN, aka DRYOPTÈRE SPINULEUSE, EVERGREEN WOOD-FERN, FANCY FERN, INTERMEDIATE WOODFERN, (*intermedius -a -um* intermediate between two forms, as in shape or color, indicating that a species was halfway between two other species in regard to one or more characteristics; a space between two parts; or in reference to a hybrid being intermediate between its parents.)

Habitat: “Moist rocky woods, especially hemlock hardwoods, ravines, & edges of swamps; 0--2000 m” (Montgomery & Wagner in fna). distribution/range: “Less common than the next (*D. spinulosa*) & likely to be found in drier places. Not known in the Shirland sand area. There is some variation in the leaf cutting but the short lower pinnae & the glandular indusia in this separates it readily from the next.” (ewf55)

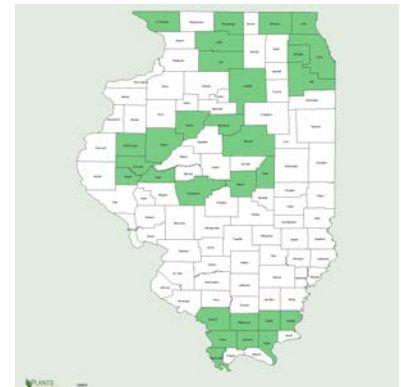
Description: N 2n = 82. key features: Leaves are green through the winter.

Comments: status: Threatened in Iowa. Exploitably vulnerable in New York.

VHFS: “*Dryopteris intermedia* & the other taxa in the “*D. spinulosa* complex” have long confounded taxonomists. *Dryopteris intermedia* is diploid & is one of the parents of the allotetraploids *D. carthusiana* & *D. campyloptera* .

Dryopteris intermedia hybridizes with eight species. All hybrids are easily detected by the distinctive glandular hairs on the indusia &, usually, on the costae & costules.” (fna)

[*Aspidium intermedium* Muhl ex Willd, *A spinulosum* (OF Müll) Sw var *intermedium* (Muhl ex Willd) DC Eaton, *Dryopteris austriaca* (Jacq) Woynt var *intermedia* (Muhl ex Willd) CV Morton, *D spinulosa* (OF Müll) Watt var *intermedia* (Muhl ex Willd) Underw, *Thelypteris spinulosa* (OF Müll) Nieuwl var *intermedia* (Muhl ex Willd) Nieuwl]





Dryopteris intermedia

Dryopteris thelypteris (Linnaeus) Gray *NY [New nomenclature this is *Thelypteris palustris* var. *pubescens* (Lawson) Fernald.] MARSH FERN, aka EASTERN MARSH FERN, (*thelypteris* from the Greek *thelys*, female, & *ptēris*, fern.)

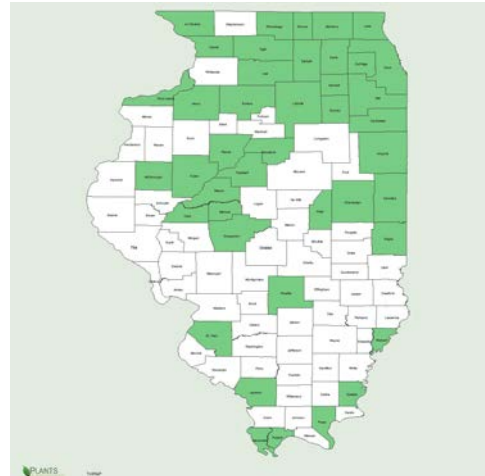
Habitat: Wet to wet-mesic prairies & savannas. “Terrestrial in swamps, bogs, & marshes, also along riverbanks & roadside ditches, & in wet woods; 0--1000 m” (Smith in fina).

Culture: asexual propagation: Divide & transplant in spring. (he99)
Humus soils.

Description: 12-30”. N 2n = 70. key features:

“Common in our sandy areas that are moist. Less common in the peat areas in Kent Creek bottom. It is a plant of wet open places but it is at times found in unusual situations. In a sandy oak wood in Coon Creek bottom the fronds resemble those of the New York fern in that the lower pinnae become increasingly shorter; the veins, however, are not simple. It grows in a dry thicket on the bank of a C & NW Ry cut near Cherry valley. In abnormal situations few sporophylls are developed.” (ewf55)

VHFS: In Britton & Brown (1913), this is called *Dryopteris thelypteris*. New nomenclature this is *Thelypteris palustris* var. *pubescens* (Lawson) Fernald. [*Dryopteris thelypteris* auct non (L) Sw, *D thelypteris* (L) Sw var *haleana* (Fern) Broun & Weath, *D thelypteris* (L) Sw var *pubescens* (G Lawson) AR Prince ex Weath, *Lastrea thelypteris* (L) Bory var *pubescens* Lawson, *Thelypteris confluens* (Thunb) Morton var *pubescens* (G Lawson) Pringle, *T palustris* Schott var *haleana* Fern]



Thelypteris palustris var. *pubescens*

ONOCLEA Linnaeus 1753 **SENSITIVE FERN** *Dryopteridaceae* *Onoclea* (o-NOK-lee-a) from the Greek *onokleia*, name used by Dioscorides for some probably boraginaceous plant from Greek *onos*, a vessel, & *kleio*, *kleios*, *kleien*, to close, referring to the pinnules of fertile fronds curling round the sori, enclosing them. Monotypic genus, relictual distribution in temperate eastern North America & eastern Asia. $x = 37$. Formerly placed in *Polypodiaceae*, *Athyriaceae*, or *Aspleniaceae*.

Onoclea sensibilis Linnaeus SENSITIVE FERN, aka BEAD FERN, MEADOW BRAKE, *ONOCLÉE SENSIBLE*, (*sensibilis* -is -e (sen-SI-bi-lis) sensitive to early frosts, sensitive; manifesting irritability; the leaves are sensitive to & wither from light frosts.) The specific epithet & common name are in reference to the plants sensitivity to late spring & early fall frosts. “Young fronds are often killed by frost a number of times before growth gets started in the spring” (ewf55). facw

Habitat: Marshes, fens, moist woods, muddy shores. Acid soil of marshes, swamps, moist open woods & wet meadows. Wet meadows, thickets, & woods; stream & riverbanks; swamps & bogs; usually in slightly acidic soil. Forests. “Frequent in low damp, open places & in low woods but nowhere abundant enough to be weedy.” (ewf55) distribution/range: Native to eastern North America & eastern Asia, naturalized in Western Europe. In most Illinois counties.

Culture: Division, spore propagation, successional restoration. Spores should be stored in intact fertile fronds in ziplocks in refrigerators.

17,000,000 spores per gram or 7.7 billion per pound. (Plant Reproductive

Ecology: Patterns & Strategies, Jon & Lesley Lovett-Doust 1988). In garden cultivation, *Onoclea* may become weedy.

asexual propagation: Division of mature plants in fall or early spring.

cultivation: Shade or partial shade. Moist, average garden soil, best if slightly acidic. Best in moist soils; can be planted near water. Hardy to Zone 3. Winter survival is best if fronds are left on the plant.

bottom line: Spores should be dormant seeded (dormant spored?). Germination is in early spring.

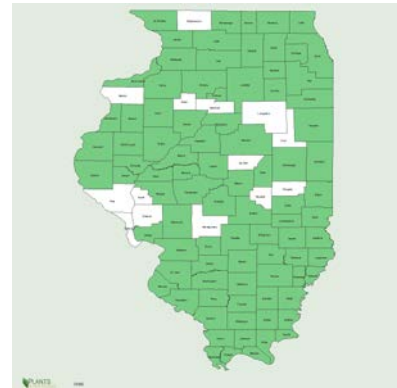
Description: 1.0-1.5(2.0)', 1.0-2.0' wide; colonial, spreads by long rhizomes, often forming thick stands. $2n = 74$. Leaf forms intermediate between sterile leaves & sporophylls are sometimes found (ML Fernald 1935)

Comments: phenology: Blooms, as it were 5,6,7,8,9,10. Sporophylls are produced from May to October. harvest September to November. Attractive dried fertile fronds (spore capsules) are used in fall arrangements. Landscaping, wetland restoration, moist or bog gardens, woodland drifts, shaded groundcovers, & shaded rain gardens. The large, green leaves add a nice filler & texture to wetland & woodland gardens. Spore source Walnut, Bureau Co & Tampico, Whiteside Co.

Onoclea has green spores, or spores that contain chlorophyll. Green spores are viable for a few days to a few months, where nongreen spores are viable for three to many years. Green spores are metabolically active & germinate within a few days of sowing. (Moran 2004) As with *Matteuccia struthiopteris*, the sporophylls of *Onoclea sensibilis* are persistent through the winter & the green spores are released in spring before the sterile leaves expand. (fna, www.rook.org/earl/bwca/nature/ferns/onoclea.html)

“Two contrasting phenologic & morphologic patterns for temperate pteridophytes bear special mention. In the first of these, green spores are shed in early spring from sporophylls that were produced by stored photosynthate from the previous year. These sporophylls may either flush in early spring (as in several *Equisetum* species & *Osmunda cinnamomea*) or may have persisted from the previous fall, with spores stored in contracted pinnae (as in *Equisetum hyemale*, *Onoclea sensibilis*, *Matteuccia struthiopteris*). Green spores are capable of immediate germination &, in nature, have very brief periods of viability. In contrast, in a greater number of pteridophytes, fertile leaves are produced from the current year's growth photosynthate, & the nongreen spores are shed from midsummer to fall. An intermediate strategy is seen in *Lorinsera areolata* in the Gulf Coastal Plain. This fern sheds most of its non-green spores in midwinter & stores a low portion in dead erect sporophylls that release spores slowly through the following summer. Nongreen spores lack enforced dormancy & require a few days of hydration prior to germination. Such spores are known for their remarkable retention of viability over prolonged periods of laboratory & herbarium storage. It is now clear that several mechanisms may operate to form a “spore bank” in nature. Spores stored in soil or on dead erect or prostrate fertile leaves have retained viability for at least a year.” (Lovett-Doust & Lovett-Doust 1988 page 319)

Onoclea & other genera store starch grains in long-persistent petiole bases (trophopods) (WH Wagner Jr & DM Johnson 1983)



Early Tertiary *Onoclea* fossils (55 million years old) have been found in Canada, Greenland, Japan, eastern Russia, the United Kingdom, & the western United States (Rothwell & Stockey 1991).

Associates: Provides food for game birds & deer.

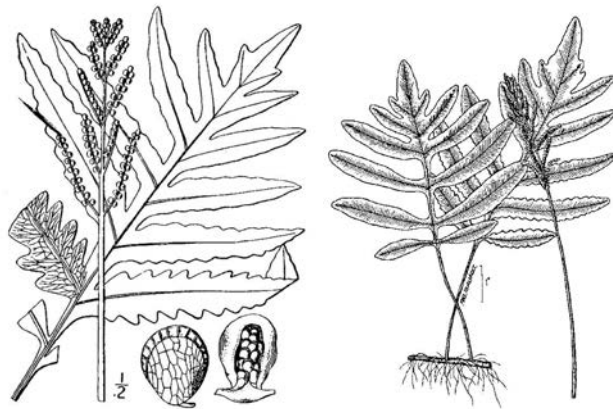
ethnobotany: Root used as medicinal plant by Ojibwa (sm32)

VHFS: [*Angiopteris sensibilis*, *Calypterium sensibile*, *Onoclea augescens*, *O interrupta*, *O obtusilobata*, *Ragiopteris obtusilobata*, *R onocleoides*, *Riedlea sensibilis*] [*Onoclea sensibilis* forma *hemiphylloides* (Kiss & Kümmerle) Gilbert; *O sensibilis* forma *obtusilobata* (Schkuhr) Gilbert; *O sensibilis* var *obtusilobata* (Schkuhr) Torrey]

The variety *sensibilis* in North American; variety *interrupta* is Asian. Molecular evidence supports the two varieties.

GW Rothwell & RA Stockey 1991. *Onoclea sensibilis* in the Paleocene of North America, a dramatic example of structural & ecological stasis. Review of Paleobotany & Palynology 70: 113-124

WH Wagner, Jr & DM Johnson, 1983, Trophopod, a Commonly Overlooked Storage Structure of Potential Systematic Value in Ferns, Taxon, Vol 32, No 2 (May, 1983), pp. 268-269



Onoclea sensibilis

MATTEUCCIA Todaro 1866 **OSTRICH FERN** *Dryopteridaceae* *Matteuccia* (ma-TOO-kee-a) after Carlo Matteucci, 1863, 19th century Italian physicist at the University of Florence. A genus of three (1 in northern North America) species of the north temperate regions. $x = 40$. *Matteuccia* is one of several genera known to store starch grains in long-persistent petiole bases (trophopods) (WH Wagner Jr & DM Johnson 1983). Some current authors place this in *Onocleaceae* Pichi Sermoli 1970. Formerly placed in the *Aspidiaceae*.

Matteuccia struthiopteris (Linnaeus) Todaro *IN, NY, RI OSTRICH FERN, aka AMERICAN OSTRICH FERN, AMERIKANSK STRUTBRÄKEN (SW), FOUGÈRE-À-L'AUTRUCHE, MATTEUCCIA FOUGÈRE-À-L'AUTRUCHE, STRUTBRÄKEN (SW), (*struthiopteris* (stoo-thee-OP-teris) from Greek *struthokamelos*, an ostrich, & *pteris*, a fern, for the resemblance of the fronds to ostrich feathers.)

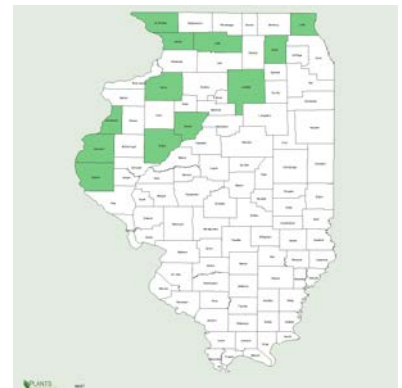
Habitat: Forests. "Rich woods, often in alluvial or mucky swamp soils; 0--1500 m" (Johnson in fna). Distribution – Range: Native to North America & Eurasia.

"The sporangia dehisce in the spring before the new sterile leaves have expanded, thus releasing the spores into an unimpeded airstream (RW Hill & WH Wagner Jr 1974). The green spores germinate in two to five days (RM Lloyd & EJ Klekowski Jr. 1970)" (Johnson in fna).

Clay soil tolerant; prefers rich, organic soils in partial shade to shade; pH 6.8-7.2.

Leaf forms intermediate between sterile leaves & sporophylls are sometimes found (ML Fernald 1935). 2.0-5.0(6.0)'; $N 2n = 80$.

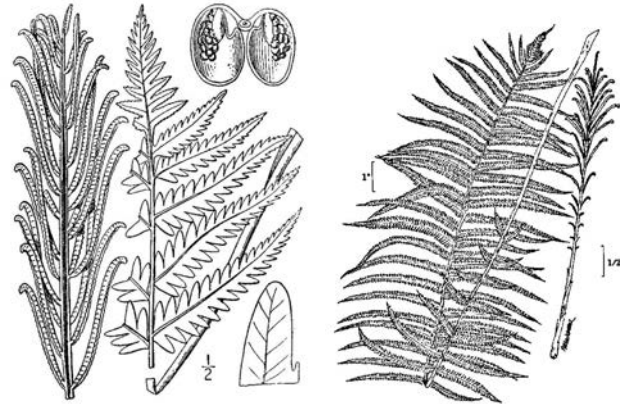
Rare in Indiana. Exploitably vulnerable in New York. Special Concern in Rhode Island. phenology: "Sporophylls produced in mid to late summer, persisting through winter" (Johnson in fna).



Often planted as a foundation planting around homes. Very effective planted in groupings; moist rain gardens with rich soil. Species can be rhizomatically aggressive & not suited for small spaces. The fertile fronds provide winter interest.

The edible fiddleheads are the state vegetable of Vermont.

VHFS: North America has variety *pensylvanica* (Willdenow) CV Morton. *Osmunda struthiopteris* L basionym. [*Matteuccia pensylvanica* (Willd) Raymond, *M struthiopteris* (L) Todaro var *pensylvanica* (Willd) Morton, *M. struthiopteris* (L) Todaro var *pubescens* (Terry) Clute, *Onoclea struthiopteris* (L) Hoffm pp, *O struthiopteris* (L) Hoffm var *pensylvanica* (Willd) B Boivin, *Pteretis nodulosa* (Michx) Nieuwl, *P pensylvanica* (Willd) Fern, *Struthiopteris pensylvanica* Willdenow]



Matteuccia struthiopteris

POLYSTICHUM Roth 1799 **SWORD FERN, CHRISTMAS FERN, HOLLY FERN** *Dryopteridaceae*

Polystichum Polystich'um (pol-ee-STY-kum or po-LI-sti-kum) from Greek *polys*, many, & *stichos*, a row, referring to the arrangement of the rows of sori, or spore cases on each pinna. A genus of about 180 species of ferns, nearly cosmopolitan. $x = 41$. Formerly placed in *Aspidiaceae*.

Polystichum acrostichoides (Michaux) Schott *MN, NY CHRISTMAS FERN, aka HOLLY FERN, *POLYSTIC FAUX-ACROSTIC*, (*acrostichoides* (a-kro-sti-KOI-deez) resembling elk's-horn fern, like *Acrostichum*, a related genus, from *ακρος*, *akros*, extreme, upper, topmost, -o-, Greek connective vowel, & *στιξ*, *stix*, a row, line, rank, & *οειδες*, *oeides*, like, resemble.) The common name refers to the formerly popular use of the tough, evergreen fronds in Christmas decorations. The fronds are available throughout the year.

Habitat: "Forest floor & shady, rocky slopes; 0--1500 m" (Wagner in fna).

distribution/range:

Culture: Propagation:

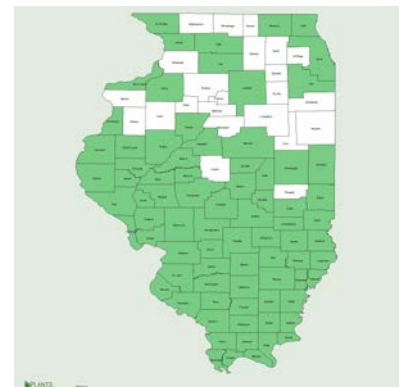
Description: $N 2n = 82$. key features:

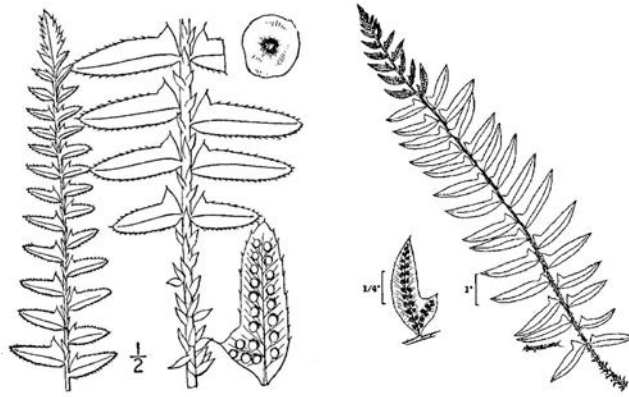
Comments: status: Threatened in Minnesota. Exploitably Vulnerable in New York. phenology: Blooms

Associates:

ethnobotany:

VHFS: [*Nephrodium acrostichoides* Michaux]





Polystichum acrostichoides

EQUISETACEAE LC Richard ex de Candolle 1805 HORSETAIL FAMILY

EQUISETUM Linnaeus 1753 **HORSETAIL, SCOURING RUSH, PRÊLE** *Equisetaceae Equisetum* from Latin *equus*, horse, & *seta*, bristle, animal hair, for the resemblance of some branched species to a horse's tail, or for the coarse black roots of *E. fluviatile*. The synonym *Hippochaete* means horse tail, from ἵππος, *hippos*, & χαίτη, *khaitē*, bristle, long hair, the Greek equivalent & synonym for the Latin *Equisetum*, now used as a subgenus name. HORSETAIL is a 300 million year old genus currently of ca 15 species, 11 species & 5 hybrids in northern North America, nearly cosmopolitan. $x = 108$.

Spores are equipped with elaters, long appendages that expand & contract with changes in humidity. Elaters function to dig the spore into the soil & to tangle spores together, thereby creating a larger propagule & increasing the probability that prothalli will be close enough to ensure fertilization. Elaters may also aid in wind dissemination, acting as parasails when expanded in dry weather. Spores released by the cone bearing stems are dispersed by wind or water, i. e. anemochory or hydrochory. The spores are green, thin-walled, & quickly germinate under moist, illuminated conditions. Spores remain viable for 5 to 17 days (Hauke 1963).

Due to their ephemeral lifespan, Equisetum spores are not suited for use in commercial restoration.

RL Hauke, 1963. A taxonomic monograph of the genus *Equisetum* subgenus *Hippochaete*. *Nova Hedwigia* 8:1-123.

CE Husby, 2002, An Introduction to the Genus *Equisetum* & the Class *Sphenopsida* as a whole; http://www.fiu.edu/~chusb001/GiantEquisetum/Intro_Equisetum.html

CE Husby, 2002, Ecology & Physiology of the Giant Horsetails; <http://www.fiu.edu/~chusb001/GiantEquisetum/Ecophysiology.html>

Equisetum arvense Linnaeus SCOURING RUSH, aka FIELD HORSETAIL, COMMON HORSETAIL, CORN HORSETAIL, HORSETAIL, BOTTLEBRUSH, FOXTAIL, HORSE PIPES, PIPE WEED, JOINTED RUSH, CAT'S TAIL, MARE'S TAIL, PINETOP, PINE GRASS, SNAKE GRASS, SHAVE GRASS, PADDY'S PIPE, *PRÊLE DES CHAMPS*, TOADPIPE, (*arvensis* -is -e (ar-VEN-sis, ar-VEN-see) of cultivated or planted fields, of farmland, by extension, growing in fields, from Latin *arvum*, noun, field, cultivated land, plowed land, & -ensis, adjectival suffix for nouns denoting country or place of origin or habitat.)

Habitat: Open low ground, fields, sterile meadows, roadsides, damp open woods, & thickets, generally common. "Common in pastures & meadows & on roadsides & railroads." (ewf55) "Roadsides, riverbanks, fields, marshes, pastures, tundra; 0--3200 m" (Hauke in fna) **distribution/range:** Circumboreal. In every Illinois county.

Culture: propagation: Scatter freshly gathered stems on bare ground in early summer.

asexual propagation: Clone. Spore count not available.

Description: $N 2n = ca. 216$

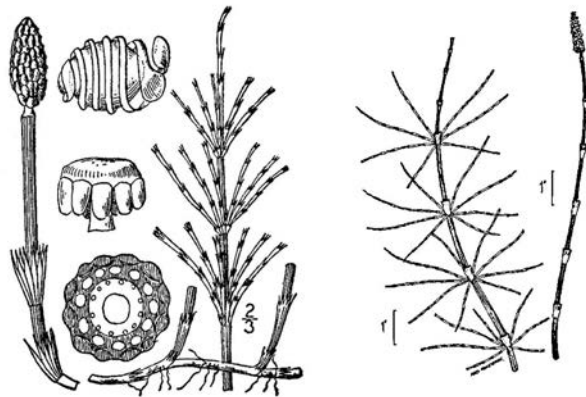


Comments: status: WEEDY. Species is considered weedy or aggressive by some sources. phenology: Cones mature early spring. Collect spores in se Wisconsin in July - August (Heon et al 1999). In areas where gold is present, this species can accumulate gold in its tissues, up to 4.5 ounces of gold per ton of fresh plant material. Its value in this regard is primarily as an indicator plant rather than as a commercial source of gold. Rhizomes regularly extend to 40 inches, some to 6 feet. Source wet ditches, Green River Lowland.

Associates: This species contains high levels of alkaloids, which may be toxic to surrounding vegetation. ☠ It is also considered poisonous to horses.

ethnobotany: Medicinal beverage of Ojibwa & Pottawatomie (sm32, 33). Ojibwa also used it as a charm.

VHFS: Hybridizes with WATER HORSETAIL, *Equisetum fluviatile*.



Equisetum arvense

Equisetum fluviatile Linnaeus *MD, RH WATER HORSETAIL, aka RIVER HORSETAIL, PIPES, *PRÊLE FLUVIATILE*, (*fluviatilis* -is -e Latin adjective, pertaining to a river, of or from a river.)

Habitat: "Standing in water, in ponds, ditches, marshes, swales; 0--1500 m" (Hauke in fna).

distribution/range: Circumboreal. Northern ½ of Illinois, which is at the southern limit of the species range.

Culture:

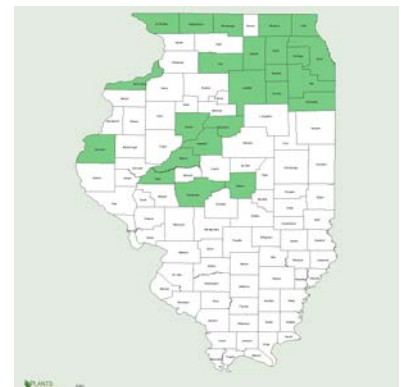
Description: N 2n = 216. key features:

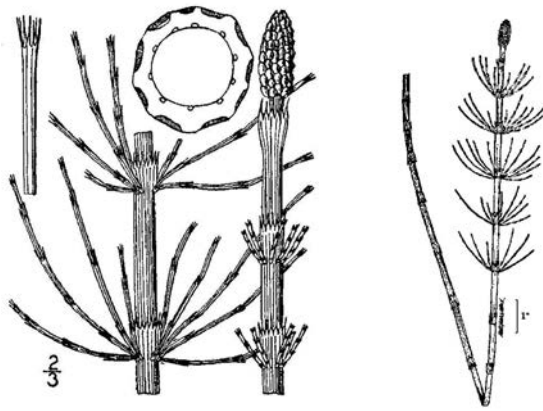
Comments: status: Endangered in Maryland. Special Concern in Rhode Island. phenology: Blooms Cones mature in summer. "Frequent in shallow water in Sugar River sand area but uncommon elsewhere in the county. Annual as to stems." (ewf55)

Associates:

ethnobotany:

VHFS: [*Equisetum fluviatile* L *linnaeanum* (Döll) M Broun, *E f L f minus* (RBr) M Broun, *E. f L f natans* (Vict) M Broun, *E f L var limosum* (L) Gilbert, *E limosum* L]





Equisetum fluviatile

Equisetum hyemale Linnaeus SCOURING RUSH, aka COMMON SCOURING RUSH, ROUGH SCOURING RUSH, BOTTLEBRUSH, HORSETAIL, FIELD HORSETAIL, PEWTERWORT, PIPES, ROUGH HORSETAIL, DUTCH RUSH, SCOURING RUSH HORSETAIL, TALL SCOURING RUSH, (*hyemalis* -is -e of winter, flowering in winter, may be spelled *hiemalis* in older literature; from Latin *hyemalis*, of winter, from *hiemalis*, of winter, wintery. The letter ‘y’ was a late adoption into the Roman alphabet to accommodate Greek loan words, hence the ‘i’ spelling is older, hence, more classical.)

Habitat: distribution/range: This is one of those plants with a hidden geopolitical agenda. In the map below, note the concentration in Illinois & Iowa. In every Illinois county.

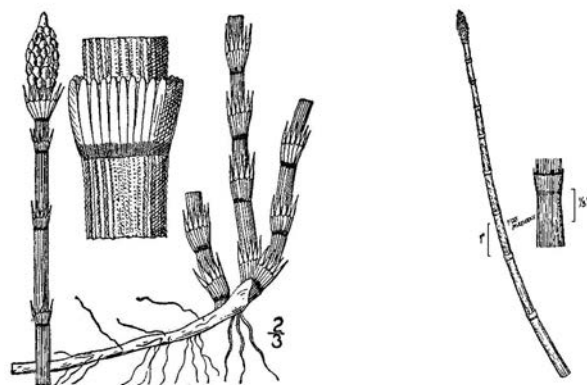
Culture: Propagation: (Code? Ken Schaal)

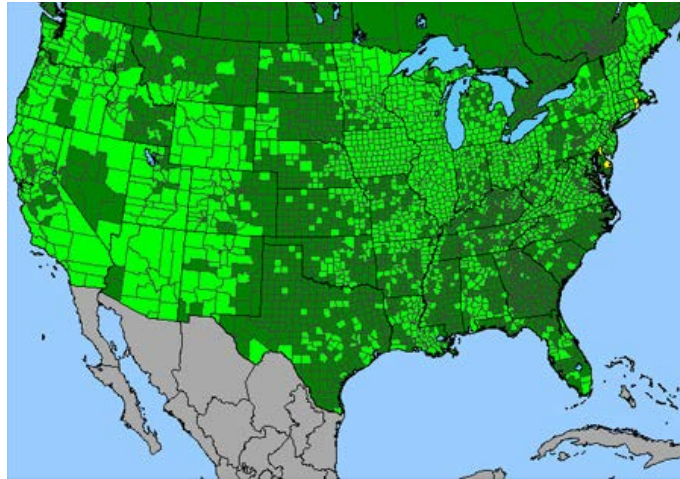
Description: n = 216. key features:

Comments: status: phenology: Cones maturing in summer, old stems sometimes developing branches with cones in spring (fna). “Particularly common in moist sandy places but also frequent in dry places often forming dense thickets. Perennial as to stems.” (ewf55)

Associates: ethnobotany: Den28 *Equisetum hiemale* Linnaeus, SCOURING-RUSH, *gijib'inuskon'*, “it is round”, Ojibwa utility plant.

VHFS: [*Hippochaete hyemalis* (Linnaeus) Bruhin] [*E prealtum* Raf]





Equisetum hyemale

Equisetum laevigatum A Braun SMOOTH SCOURING RUSH, aka SCOURING RUSH, SMOOTH HORSETAIL, (*laevigatus -a -um*, Latin smooth, slippery, free from hairs or roughness.)

Habitat: “Moist prairies, riverbanks, roadsides; 1530--3500 m” (Hauke in fna, except 1530 meters is higher than 3 Illinois stacked on top of each other. Another senseless Social Studies victim.) distribution/range: Species is common in Illinois except the southeast 1/3rd.

Culture: Clone, or scatter freshly gathered stems on bare ground in early summer.

Description: $N 2n = 216$.

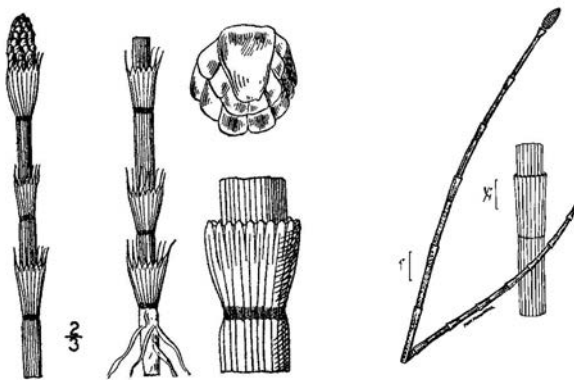
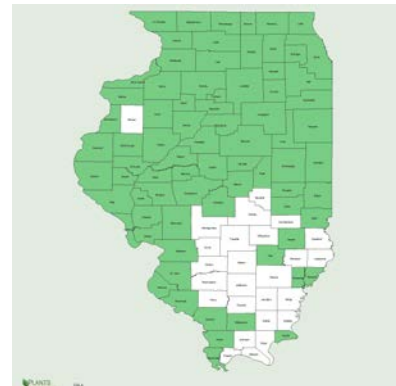
Comments: status: Endangered in New York. Species is considered weedy or aggressive in some applications or parts of its range (Whitson et al 1996.). phenology: Blooms Cones maturing in spring–early summer. Collect spores in se Wisconsin in July - August (he99). Seed count not available or applicable.

“Common in ditches & on railroad embankments particularly in sandy soil. Annual as to stems. On roadsides the rhizome is often injured & there is abundant growth of thin stems resembling *E. variegatum*, which we do not have, a peculiarity that is mentioned by Jones” (ewf55)

Associates:

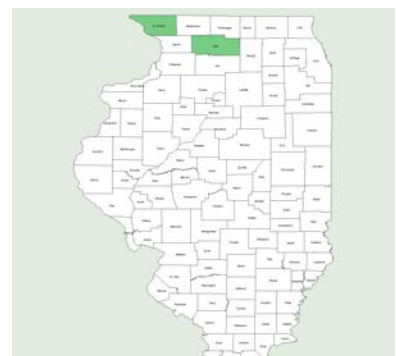
ethnobotany:

VHFS: [*Equisetum funstonii* AA Eaton, *E kansanum* Schaffn, *E laevigatum* A Braun ssp *funstonii* (AA Eaton) Hartm, *Hippochaete laevigata* (A Braun) Farw]



Equisetum laevigatum

Equisetum pratense Ehrhart *CT, IL, NH, NJ, HY MEADOW HORSETAIL, aka PRÊLE DES PRÉS, SHADE HORSETAIL, SHADY HORSETAIL, (*pratensis -is -e* (prah-TAYN-sis) of or growing in meadows, from Latin *pratensis -is -e*,



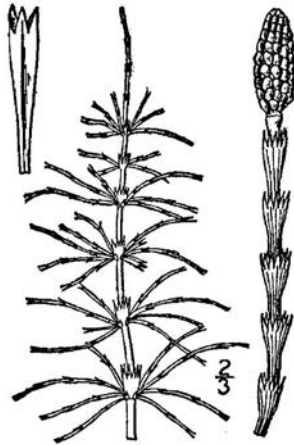
adjective, growing or found in meadows, from *pratium, prati* n., meadow, meadowland; meadow grass or crop; broad expanse, field of plain of land or sea, possibly from possibly from Greek *περῶ, πείρω, pero, peiro.*)

Habitat: Boreal relict in Illinois. Alluvial woods, thickets, & calcareous meadows. “Meadows, wet woodlands; 0--2000 m” (Hauke in fna). distribution/range: Circumboreal. Rare in northwest Illinois, Jo Daviess & Ogle counties. NW Illinois is at the southern limit of the species distribution.

Description: key features: Distinguishing features are horizontal to drooping branches in whorls, & deltoid teeth on branches.

Comments: status: Special Concern in Connecticut. Threatened in Illinois, New Hampshire, & New York. Endangered in New Jersey. phenology: Cones maturing in late spring.

Associates: ethnobotany: Medicinal tea by Ojibwa (Reagan 1928). Ojibwa also used tuber (?) for food (ibid.)



Equisetum pratense

Densmore 1928 *Equisetum praealtum* Raf., SCOURING-RUSH, *Gijib'inuskon'*, “it is round”, Ojibwa utility plant.

Equisetum sylvaticum Linnaeus *II, IA, MD, RH WOOD HORSETAIL, aka *PRÊLE DES BOIS*, SYLVAN HORSETAIL, WOODLAND HORSETAIL, (*sylvaticus - a -um* of or growing in woods, forest-loving, sylvan, wild, growing in the wild(?), from the Latin, *sylva*, woods, forest, & *-aticus* habitat.)

Habitat: Woodlands, thickets, & openings. distribution/range: Very rare in Illinois, known only from Castle Rock State park, where it is threatened by deer overpopulation.

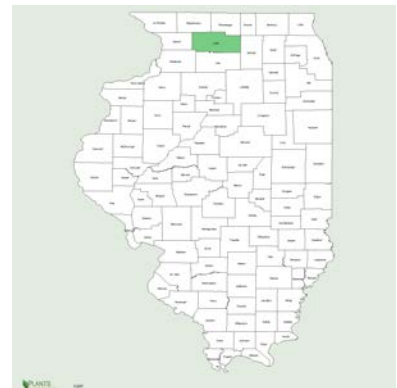
(To the tune of Bite Me, Doughboy, by Mimi of the Drew Carey Show, Buh- Buh, Buh- Bite me, Bambi! Buh- Buh, Buh- Bite me, Bambi!)

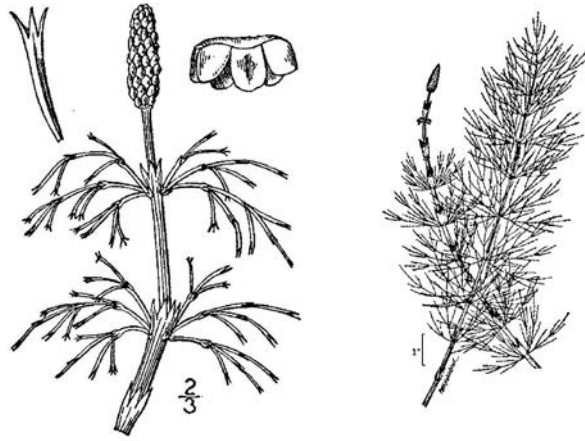
Description: Several elegant whorls of slender, recurved branches, generally twelve or more branches to a whorl, which are very about 5 inches long, quadrangular & with several secondary whorls so that the plant resembles a miniature pine tree. $N 2n = 216$. key features: Distinguishing features are the branches that commonly & regularly re-branch & reddish brown leaf sheaths.

Comments: status: Endangered in Illinois & Maryland. phenology: Cones maturing in late spring.

Associates: ethnobotany: Used as medicinal beverage by Ojibwa (sm32).

VHFS: []





Equisetum sylvaticum

ISOËTACEAE Dumortier 1829 (fna has this as *Isoëtaceae* Reichenbach) **QUILLWORT, MERLIN'S GRASS** A monogeneric family of about 300 species. *Isoëtaceae*, *Selaginellaceae*, & *Lycopodiaceae* are only distantly related to other extant pteridophytes & seed plants. (w07)

ISOËTES LINNAEUS 1753 **QUILLWORT, MERLIN'S GRASS, ISOËTE** *Isoëtaceae* *Isoëtes* New Latin, from Latin, the name for a small houseleek or ayegreen, *Sempervivum tectorum*, from Greek, from neuter of *isoetes* equal in years, from *is-*, *isos*, equal, & *etos* year. Widely distributed cosmopolitan genus of about 300 (150) species of fern allies comprising the primarily aquatic, marsh-growing, or terrestrial ephemeral QUILLWORTS that have a short buried lobed stem from which arises a tuft of quill-shaped leaves bearing sporangia in their axils. 24 species in northern North America. QUILLWORTS are some of the last living relatives of the fossil tree lycophytes, with which they share some unusual features including the development of both wood & bark, a modified shoot system acting as roots, bipolar growth, & an upright stance. These plants are the only living plants exhibiting rhizotaxy (the orderly arrangement of lateral roots), which also occurred in lycophytes. x = 11.

Isoetes often have vesicular arbuscular mycorrhizae, even when growing as a submerged aquatic (Beck-Nielsen & Madsen 2001 in Brundrett 2002).

The USDA/NRCS website calls this a graminoid! If you do not know what a box is, you can not think outside one, can you?

Isoëtes melanopoda Gay & Durieu ex Durieu *GA, IN, IA, KT, MN, NJ, TN **BLACKFOOT QUILLWORT**, aka **BLACK-BASED QUILLWORT**, (*melanopodus -a -um* with black foot-stalks, from Greek μελαν-, μέλας, *melan-*, *melas*, black, & πους, ποδος, *pous*, *podos*.)

Habitat: Noncalcareous soils; meadows, fields, ditches, soil pockets on rock outcrops. This *Isoëtes* appeared in formerly farmed wetland north of our office.

Description: From a 'cormlike' base with fibrous roots, diploid species; $2n = 22$. key features: Leaf bases are blackish or sometimes pale (Ilpin).

Comments: status: Special Concern in Georgia. Endangered in Indiana, Iowa, Kentucky, Minnesota, New Jersey, & Tennessee. phenology: Spores mature in late spring. C3?

VHFS: Subspecies *sylvatica* Brunton & Britton grows in clay soils in low woods, seeps on sandstone or granitic rocks (w07)



Isoëtes melanopoda, hydric soils, Tampico

LYCOPODIACEAE Mirbel 1802 CLUB MOSS FAMILY

LYCOPODIUM Linnaeus 1753 **CLUB MOSS** *Lycopodiaceae* *Lycopodium* New Latin, from *lyc-*, & *-podium*, or Greek *lykos*, wolf, & *pous*, *podes*, foot; in reference to the resemblance of the branch tips to a wolf's paw. Some species are referred to the genus *Diphasiastrum* (false *Diphasium*, from the genus name *Diphasium* & *astrum*, noting an incomplete resemblance or inferior type), or the genus *Huperzia* Bernhardt (for Johann Peter Huperz, early 19th century German botanist & fern specialist.) X = 34.

Lycopodium clavatum Linnaeus CLUBMOSS, aka COMMON CLUBMOSS, FORKS & KNIVES, FOXTAIL CLUBMOSS, *LYCOPODE À MASSUE*, ROBIN HOOD'S HATBAND, RUNNING CLUBMOSS, RUNNING CLUB-MOSS, RUNNING GROUND PINE, RUNNING PINE, RUNNING MOSS, STAGHORN CLUBMOSS, WOLF'S CLAW CLUBMOSS, (*clavatus -a -um* club-like, from *clava* for knotty stick or club; club-like.)

Description: Branching, multiple cones on extremely long stems, & horizontal stem on surface of ground. N 2n = 68. key features:

Associates: ethnobotany: Spores used as medicine by Pottawatomie (sm33).

Lycopodium complanatum Linnaeus GROUND PINE, aka CHRISTMAS GREEN, FLAT-BRANCHED CLUB-MOSS, *LYCOPODE APLATI*, NORTHERN RUNNING PINE, (*complanatus -a -um* flattened, flat, compressed, from *complano*, I level, raze.)

Associates: ethnobotany: Used as medicinal plant by Ojibwa (sm32)

VHFS: New nomenclature this is *Diphasiastrum complanatum* (L) Holub.

Lycopodium lucidulum Michaux SHINING CLUB-MOSS, aka *HUPERZIE BRILLANT*, SHINING FIR MOSS, (*lucidulus -a -um* somewhat shining, or somewhat clear, from Latin *lucid*, bright, shining, clear, transparent & *-ulus*, diminutive suffix for adjectives.)

“Very rare, being found in the county only in Winnebago-Boone County line woods & in a scrub black oak thicket in the north part of Shirland Township. Abundant in a few places on the sandstone at Castle Rock in Ogle County.” (ewf55)

VHFS: New nomenclature *Huperzia lucidula* (Michx) Trevis.

Lycopodium obscurum Linnaeus GROUND PINE, aka FLAT-BRANCHED GROUND PINE, *LYCOPODE OBSCUR*, PRINCESS'-PINE, RARE CLUBMOSS, TREE CLUBMOSS, ROUND BRANCHED CLUBMOSS, (*obscurus -a -um* obscure, hidden; indistinct, dark, undistinguishable, dull, dingy.)

Description: Round branches; pine-like rather than flattened & cedar-like. N 2n = 68. key features:

Associates: ethnobotany: Spores used as medicine by Ojibwa & Pottawatomie (sm32, 33). Ojibwa medicine for stiff joints (den28).

Lycopodium selago Linnaeus MOUNTAIN CLUBMOSS, aka FIR CLUBMOSS, *HUPERZIE SÉLAGINE*, NORTHERN FIR-MOSS, (*selago* an ancient name for *Lycopodium selago*, a club-moss.)

Description: N 2n = 268. key features:

Associates: ethnobotany: Species was used by Ojibwa as food (Reagan 1928).

VHFS: New nomenclature this is *Huperzia selago* (Linnaeus) Bernhardt ex Schrank & Martius.

OPHIOGLOSSACEAE (R. Brown) Agardh 1822 **ADDER'S TONGUE FAMILY** A family of 7-8 genera & ca. 75-115 species. They are closely related to the *Psilotaceae* & distantly related to the Leptosporangiate ferns.

BOTRYCHIUM Swartz 1801 **MOONWORT, GRAPE FERN, BOTRYCHE** *Ophioglossaceae* *Botrychium* New Latin, from Latin *botrus*, *botrus*, n., a bunch of grapes, from Greek *botrychos*, stalk or a bunch of grapes, & New Latin *-ium*; from the grapelike cluster of sporangia. A genus of 25-30 (50-60) species, almost cosmopolitan, but primarily temperate & concentrated in North America & east Asia. The greatest diversity is at high latitudes & high elevations. X = 44, 45, 92. Traditionally this genus has included *Botrypus* & *Sceptridium*.

Botrychium dissectum Sprengel CUT-LEAVED GRAPE FERN, aka *BOTRYCHE DÉCOUPÉ*, DISSECTED GRAPE FERN, LACE-FROND GRAPE FERN, (*dissectus -a -um* dissected, deeply divided, deeply cut, cut up, cut into many segments.)

Description: $2n = 90$. key features:

“Rare. The sandy oak woods east of Roscoe, the oak-hickory woods on Meridian Road near Kent Creek & in a boggy thicket in Shirland Township. All the plants are quite small. It grows with *B. obliquum* which outnumbers it. The two intergrade to the degree that it cannot always be said definitely which species is in hand. We know of it in Boone but not in the other contiguous counties.” (ewf55)

Botrychium multifidum (Gmel.) Rupr. COMMON GRAPE FERN, aka *BOTRYCHE À FEUILLE COUCHÉE*, LEATHER GRAPE FERN, LEATHERY GRAPE FERN, LEATHER-LEAVED GRAPE FERN, (*multifidus -a -um* many times parted, many-cleft, with many divisions, much-divided, divided into many segments.)

Description: $2n = 90$. key features:

“With us less common than the next & it is larger & coarser. It prefers more open places & is less common in sandy places than is *. obliquum*. There is a definite tendency to intergrading between these species.” (ewf55)

Botrychium obliquum Muhl. (*obliquus -a -um* (o-BLEE-kwus) oblique, slanting, sideways, awry, lopsided.)

“Compared with the preceding it is of thinner texture, has fewer leaf divisions, & the ultimate ones are acute. Most common in sandy oak woods in the Sugar River area but not unusual in oak-hickory woods over the county & in Boone, Ogle & DeKalb counties. There is a marked tendency to grow in groups of a dozen or more plants which are of about the same size in a group but varying with different groups. The largest we have found grow singly in the black oak woods in the sand area. There is a variation in the size of the blade from year to year but prolonged observation has convinced us that it grows very slowly, there being no appreciable increase in the size of the blade over a period of years.” (ewf55) FNA includes this in *Botrychium dissectum* Sprengel.

Botrychium virginianum (Linnaeus) Swartz RATTLESNAKE FERN, aka COMMON GRAPEFERN, *BOTRYCHE DE VIRGINIE*, SANG-FIND,

Habitat: Shaded forests & scrubby second growth. The most widely distributed *Botrychium* in North America. “Common in dry & also mesophytic woods.” (ewf55)

Description: $2n = 184$. key features:

Comments: status: “There is a great variation in the size of plants: very small ones are often fertile. It is not evergreen as are our other grape ferns.” (ewf55)

Associates: ethnobotany: Used as medicinal plant by Ojibwa & Pottawatomie (sm32, 33). Used as medicine for bites by Ojibwa (den28).

VHFS: [*Botrychium virginianum* (L) Sw subsp *europaeum* (Ångstr) Jav, *B. virginianum* (L) Sw var *europaeum* Ångstr, *Osmunda virginiana* L]

Sometimes placed in the genus *Botrypus* Richard 1801 as *Botrypus virginianus* (Linnaeus) Holub.

OSMUNDACEAE Berchtold & J.C. Presl 1820 ROYAL FERN FAMILY

OSMUNDA Linnaeus **ROYAL FERN, CINNAMON FERN, INTERRUPTED FERN** *Osmundaceae* *Osmunda* (os-MUN-da) Possibly from New Latin, from post-classical Latin, from Old French *osmonde* (or Anglo-Norman *osmond*). Or, from Saxon (not Celtic, but there are a couple of Celtic references out there), *Osmunder*, surname of Thor, the god of war; or from the Saxon god *Osmunder* the Waterman, who hid his family from danger in a clump of these ferns. Possibly from the Scandinavian writer Asmund (c. 1025) who helped prepare the way for Swedish acceptance of Christianity. More likely from any of many old Germanic language group versions of *osmunder*, (see OED), a possible place name indicating where bog iron was produced, or a term for bog iron itself. Also folk etymology from Latin *os mundi*, bone of the world. It is possible *Osmunda* grew where bog iron ore was mined. The name also has as a possible root in the Greek verb *osmeo*, to smell, & Linnaeus did name the cinnamon fern, so ... It has also been suggested by more than one source the derivation is unknown.

CJ Phipps, TN Taylor, EL Taylor, N Rubén Cúneo, LD Boucher, & X Yao. 1998 *Osmunda* (*Osmundaceae*) from the Triassic of Antarctica: an example of evolutionary stasis. *American Journal of Botany* 85: 888-895.

Osmunda cinnamomea Linnaeus CINNAMON FERN, aka BUCKTHORN, FIDDLE HEADS, *OSMONDE CANNELLE*, (*cinnamomeus -a -um* (kin-a-MO-mee-us) cinnamon-like, hence cinnamon-brown, resembling cinnamon, light brown with red & yellow)

Habitat: Swamps, low woods, & thickets (Yarnell) “Found in the boggy places in the Shirland-Rockton sand area but not known elsewhere in the county.” (ewf55)

Description: N 2n = 44. Fiddleheads are cinnamon brown, becoming green.

VHFS: New nomenclature *Osmundastrum cinnamomeum* (Linnaeus) C Presl. *Osmundastrum* would denote a relatively inferior or wild *Osmunda*, or an incomplete resemblance to *Osmunda*.

Associates: Walnut tolerant.

ethnobotany: Used for food by Menominee (sm32). Fiddle heads (immature fronds) available in spring when beginning to sprout.

Osmunda claytonia Linnaeus INTERRUPTED FERN, (*claytonia* (klay-ton-ee-AH-na) New Latin, from John Clayton (1686-1773) Virginia botanist & physician & New Latin *-ia*.)

Habitat: “Uncommon but more frequent than the preceding. In boggy places in the open & in the low woods in Coon Creek bottom; very uncommon in the Kishwaukee River gorge. This & the preceding are common in the Castle Rock area.” (ewf55)

Description: N 2n = 44.

Comments: status: phenology: Blooms

Late Triassic *Osmunda claytonia* fossils, about 200 million years old have been found in Antarctica (Phipps et al 1998).

Osmunda regalis Linnaeus ROYAL FERN, aka AMERICAN ROYAL FERN, FLOWERING FERN, *OSMONDE ROYALE*, “More frequent than the other species, in the same boggy areas & the same low woods in Coon Creek bottom. Also in other low places in the sand area. Unknown elsewhere in the county. Uncommon at Castle Rock.” (ewf55)

Description: N 2n = 44.

VHFS: var. *spectabilis* (Willdenow) A Gray

POLYPODIACEAE Berchtold & JC Presl 1820 **POLYPODY FAMILY** A family of about 35-40 genera & 500-700 species, cosmopolitan, especially tropical & subtropical. Seven genera & 25 species in North America north of Mexico.

ATHYRIUM Roth 1799 **LADY FERN** *Polypodiaceae* *Athyrium* (a-THI-ree-um) possibly from Greek *athyros*, doorless, or from *a-*, without, & *thyrium*, shield, referring to the enclosed sori, the sporangia only tardily push back the outer edge of the indusium, or the late-opening indusium of *A. filix-femina*. 180 species, cosmopolitan, but concentrated in eastern & southeastern Asia. x = 40. This genus is sometimes placed in the *Woodsiaceae*.

Athyrium angustum (Willdenow) K Presl LADY FERN, aka NORTHERN LADY FERN, (*angustus -a -um* narrow from Latin *angusto*, I make narrow; straighten.)

“Common in moist woods, less so in wet open places. In shade the fronds are more dimorphic, are of thinner texture & the fruiting is less. The usual variations in size, shape, & cutting of the leaves are found. Red stem forms are common in woods & the redness persists after years of cultivation in the open.” (ewf55)

Description: Spores yellow or brown. 2n = 80. key features:

VHFS: New nomenclature this will be *Athyrium filix-femina* var *angustum* (Willdenow) G Lawson.

Athyrium thelypteroides (Michaux) Prantl. [New nomenclature this is *Deparia acrostichoides* (Swartz) M. Kato] SILVERY SPLEENWORT, aka *ATHYRIE FAUSSE-THÉLYPTÈRE*, SILVERY GLADE FERN, (*thelypteroides* resembling *Thelypteris*, from Greek *thelys*, female, & *pteris*, fern)

“Known only in one place, a moist gully in Mulford woods on the Kishwaukee River above the Forest Preserve where there are not more than a half dozen plants. It grows in Starved Rock & Mississippi Palisades State Parks.” (ewf55)

Description: Spores brownish, broadly winged. 2n = 80. key features:

VHFS: [*Asplenium acrostichoides* Swartz, J Bot (Schrader) 1800 (1): 54. 1800; *Athyrium acrostichoides* (Swartz) Diels; *A. thelypteroides* (Michaux) Desvaux; *Diplazium acrostichoides* (Swartz) Butter]

Camptosorus Link bearing deformed fruit, or grown together, fleshy multiple fruit, as Mulberry & Pineapple, New Latin, from *campto-*, from Greek *kamptos*, flexible; akin to Greek *kampē*, bend & *-sorus*, New Latin, from Greek *sōros*, heap; akin to Latin *tumēre*, to swell.

Camptosorus rhizophyllum (Linnaeus) Link WALKING FERN, aka *DORADILLE AMBULANTE*, (*rhizophyllum -a -um* root-leaf, referring to the species growing roots from the leaves, with leaves rooting.)

“It grows only on moist shaded limestone & is found in the most of the suitable places in the county (Winnebago). Where shade has been removed & also in very dry seasons the fronds tend to develop an irregular wavy border. In a Kishwaukee River ravine many of the plants have short fronds that end obtusely, giving a juvenile appearance.” (ewf55)

64 spores per sporangium. $2n = 72$.

Known from a north-facing, shaded roadside on Rt 52 south of Bellevue, Iowa, growing on blocks of mossy limestone.

VHFS: Several current authorities place this in *Asplenium* as *Asplenium rhizophyllum* Linnaeus. FNA notes *Asplenium rhizophyllum* & *A. ruprechtii* Kurata of east Asia are distinctive within *Asplenium* & are often segregated into *Camptosorus*.

CRYPTOGRAMMA R Brown 1823 PARSLEY FERN, ROCK-BRAKE, *CRYPTOGRAMME* *Polypodiaceae*
Cryptogramma Greek *cryptos*, hidden, & *gramme*, line, referring to the ± marginal soral bands hidden or protected by revolute margins. A genus of about 10 species of temperate Eurasia, north America, & South America. Spores yellow. $x = 30$. This genus is sometimes placed in the *Pteridaceae*.

Cryptogramma stelleri (S. G. Gmelin) Prantl SLENDER CLIFF-BRAKE, aka *CRYPTOGRAMME DE STELLER*, FRAGILE ROCK-BRAKE, SLENDER ROCK-BRAKE, STELLER'S ROCK BRAKE, (probably *stelleri* for Georg Wilhelm *Steller*, 1709-1746, German naturalist, botanist, zoologist, physician, & explorer (with Bering) who worked in Russia & Alaska. One source has this translated as starry, as in stellar.)

$N 2n = 60$.

“Found on practically all moist shaded limestone outcrops in the northern tier of counties west of Boone & in this area not particularly rare. It is quite small, starts to grow very early & begins to wither by mid-June so it is often overlooked.” (ewf55)

POLYPODIUM Linnaeus 1753 POLYPODY *Polypodiaceae* *Polypodium* (po-lee-POD-ee-um) from Greek *polys*, many, & *pous*, *podos*, *podion*, a little foot, for the branched rhizome, or the numerous knoblike prominences of the stem. Ferns, about 100 species, cosmopolitan, living on rocks, terrestrial, or epiphytic. $x = 37$.

Polypodium virginianum Linnaeus POLYPODY, aka COMMON ROCKCAP FERN, COMMON POLYPODY, *POLYPODE DE VIRGINIE*, ROCK-CAP FERN, ROCK POLYPODY, *TRIPES-DE-ROCHES*, (*virginianus -a -um* of or from Virginia)

“Very rare on limestone in Kishwaukee gorge. Common in Ogle County on sandstone at Castle Rock.” (ewf55)

Description: $2n = 148$. key features:

Comments: status: phenology: Sporulating summer-fall.

VHFS: [*Polypodium vinlandicum* A Löve & D Löve; *P vulgare* Linnaeus var *americanum* Hooker; *P vulgare* var *virginianum* (Linnaeus) DC Eaton]

PTERIDIUM Gleditsch ex Scopoli 1760 BRACKEN see *Denstaedtiaceae*

PTERIDACEAE Reichenbach 1837 MAIDENHAIR FERN FAMILY About 40 genera & 1,000 species. This may be subdivided into the families *Adiantaceae*, *Cheilantheae*, *Pteridaceae*, *Vittariaceae*, & *Parkeriaceae*.

ADIANTUM Linnaeus 1753 MAIDENHAIR FERN *Pteridaceae* *Adiantum* (a-dee-AN-tum) from Greek *adiantos*, unwetted, referring to the way the fronds repel water. Formerly placed in the *Polypodiaceae* or sometimes seen as *Adiantaceae*.

Adiantum pedatum Linnaeus MAIDENHAIR FERN, aka *ADIANTE DU CANADA*, NORTHERN MAIDENHAIR, (Latin *pedatum*, (bird's) foot-like, from *pedatus*, from *pedo*, to furnish, have feet.)

Habitat: Rich hardwoods, moist mesic woods. Moist forests & cliffs, especially in seepage. “Grows most abundantly & to a larger size in damp, rich woods but it is also common in the drier sandy oak woods. It is remarkably free from variations. It is the last fern to be killed by frost.” (ewf55)

1.0-1.5' tall. Well drained to slightly damp soil. Best when protected from buffeting winds. Zone 3-8. Excellent foliage background for forbs. Naturalizing.

Associates: ethnobotany: Roots used as medicinal beverage by Pottawatomie (sm33).

PELLAEA Link 1841 **CLIFF BRAKE, BUTTON FERN** *Pteridaceae* *Pellaea* (pe-LIE-a) New Latin, from Late Greek *pellaiia*, feminine of *pellaios* dark-colored; from the dark leaves or the dark stalks; akin to Greek *polios* gray; or Greek *pellos*, dark, possibly referring to bluish gray leaves; alternately from the Greek *pelius*, from Mount Pelion on the coast of Thessaly. A genus of xeric-adapted, saxicolous ferns about 40 species, most western hemisphere, with a few species in Asia, Africa, the Pacific Islands, & Australia. Some species are known to occasionally grow on masonry walls. $x = 29$. Often placed in *Polypodiaceae*. Once placed in the *Sinopteridaceae*.

Pellaea atropurpurea (L.) Link PURPLE CLIFF BRAKE, aka *PELLÉADE À STIPE POURPRE*, PURPLE-STEM CLIFF BRAKE, (*atropurpureus -a -um* (aht-ro-pur-PEWR-ree-us) deep or dark purple, blackish purple, from Latin *ex atro purpureus*, purple tinged with black.)

Habitat: Calcareous cliffs & rocky slopes, usually on limestone.

n = 2, n = 87 (fna?)

Pellaea glabella Mettenius ex Kuhn PURPLE CLIFF BRAKE, aka DWARF CLIFF BRAKE, SMOOTH CLIFF-BRAKE, (*glabellus -a -um* rather glabrous, smoothish, rather smooth (destitute of pubescence, hairless (questionable)) In the southeast USA, usually on calcareous or mafic rocks. (w08)

Description: Leaves wiry, evergreen, leathery, pinnate or bipinnate, sori marginal. n = 2, n = 116 (fna?)

Comments: status: phenology: Blooms C3.

“Rather common in the only habitat whence it thrives, exposed limestone. In exceedingly dry places the plants may be abundant but they are small; with some shade & a little moisture the plants are larger. It grows on bridge abutments & other old masonry & in quarries & railroad cuts that were made more than 40 years ago. It entirely replaces *P atropurpurea* --we do not know of the latter in northern Illinois.” (ewf55)

VHFS: [formerly *P atropurpurea*.] W08 maintains . *glabella* & *P atropurpurea* as distinct species.

SELAGINELLACEAE Willkomm 1861 LITTLE CLUBMOSS or SPIKEMOSS FAMILY

SELAGINELLA Palisot de Beauvois 1804 **SPIKEMOSS** *Selaginella* New Latin, from Latin *selagin-*, *selago*, a plant resembling the savin (*Juniperus sabina*) & *-ella*, the diminutive; from *Selago*, an ancient name for moss-like *Lycopodium*, a genus resembling *Selaginella*, & Latin, *-ella*, diminutive suffix. $X = 7, 8, 9, 10, 11, 12$.

Selaginella rupestris Linnaeus) Spring. DWARF SPIKE-MOSS, aka NORTHERN SELAGINELLA, ROCK SPIKE-MOSS, *SÉLAGINELLE DES ROCHERS*, *SÉLAGINELLE RUPESTRE*, (*rupestris -is -e* growing among rocks, found among rocks, from Latin *rupes -is* rock, cliff, & *-estris*, from *ester*, adjectival suffix for nouns denoting origin or habitat.)

Description: Fern ally. $N 2n = 18$.

“Uncommon on exposed banks & hillsides in Sugar River sand areas. More common at Castle Rock in Ogle County.” (ewf55)

VHFS: [*Lycopodium rupestris* Linnaeus]

WOODSIACEAE Herter 1949 LADY FERN FAMILY

CYSTOPTERIS Bernhardt 1806 **BLADDER FERN, BRITTLE FERN** *Woodsiaceae* *Cystopteris* from Greek *kystos*, *cystis*, bladder, & *pterus*, fern, alluding to the indusium, which is inflated when young. A genus of about 20 species mainly temperate but also tropical montane & alpine areas. 9 species in northern North American. Spores brownish. $x = 42$.

Cystopteris bulbifera (Linnaeus) Bernhardt BULBLET FERN, aka BULBLET BLADDER FERN, BULBLET FRAGILE FERN, *CYSTOPTÈRE BULBIFERA*, (*bulbiferus -a -um* bulb-bearing, onion-bearing; bulbil-bearing, from modern Latin *bulbus*, bulb, from Greek βολβός, *bolbos*, onion, bulbous root, & *ferre*, to bear.)
Diploid. $N 2n = 84$.

“Found on all shaded limestone outcrops & in shady ravines. It grows most luxuriantly in the Kishwaukee River gorge below Camp Rotary.” (ewf55)

Cystopteris fragilis (Linnaeus) Bernhardt BRITTLE FERN, aka BLADDER FERN, BRITTLE BLADDER FERN, FRAGILE FERN, NORTHERN FRAGILE FERN, (*fragilis -is -e* fragile, brittle, from Latin *fragilis*, from *frag-* root of *frangere* to break.)

Description: $N 2n = 168, 252$. key features:

Comments: status: phenology: Sporulating summer - fall.

“Common on damp shaded banks & in ravines; also in low woods but uncommon in the sand area.

Var. *protrusa*, the most common, grows in large patches in loose soil mostly in woods while var. *mackayii* is on cliffs or in firmer & drier soil.” (ewf55)

WOODSIA R. Brown 1810 **WOODSIA, CLIFF FERN** *Woodsiaceae Woodsia* New Latin, from Joseph Woods, 1776-1864, English botanist, author, & architect, & New Latin *-ia*. A genus of about 30 species, mostly north temperate, montane South America, & south temperate Africa & South America. 10 species in northern North America. Spores brownish. $x = 38, 39, 41$.

Woodsia obtusa (Spreng.) Torrey COMMON WOODSIA, aka BLUNT-LOBED CLIFF FERN, BLUNT-LOBED WOODSIA,

Description: $N 2n = 152$. key features:

“Known in only two stations; the side of a sandy ravine in Shirland Township & on the crest of a limestone cliff in Kishwaukee gorge. Frequent on sandstone in Ogle County & known in one place in Boone County near Belvidere.” (ewf55)