

## 2. OPHIOGLOSSUM L. Adder's-tongue

Blade entire, elliptic, sessile on the common petiole; sporangia coherent in 2 rows in a spikelike cluster with stalk about as long as common petiole.

### 1. *Ophioglossum vulgatum* L. var. *pycnostichum* Fernald

Adder's Tongue, Southern Adder's Tongue

Blades ovate, broadest near the base, entire, sessile on a common petiole with sporangia found in 2 rows in a stalked spikelike cluster; islets formed by principal veins not enclosing smaller islets. Syn.: *O. pycnostichum* (Fernald) Å.Löve & D.Löve

REFERENCES: Sullivant 1840:55; Selby & Craig 1890:18.

HERBARIUM RECORDS: 21 May 1933—Indian Springs, *Hicks*; 29 May 1933—Indian Springs Ravine, Cols., *Mrs. Humphrey*; 2 Jun 1933—Indian Springs, *Hicks*; 25 Jun 1934—Indian Springs, Cols., *Chapman & J. H. Schaffner*; 23 Jun 1935—Indian Springs Ravine, Cols., *J. H. Schaffner*; 22 Jun 1937—Indian Springs, *C. Jones*; 16 May 1948—open woods, N side of Cols., *Barley* (BHO); 21 May 1971—N of Hudson St. on N Olentangy R., old field succession area behind housing development, extremely common, mostly in light shade, *Wagner, Duncan, Young, Stevenson & Roberts* 7250; 17 Jul 1971—locally abundant in dry second growth woods, Perry Twp., 1 mi. N of Rt. 161, W of Olentangy River Rd. (Rt. 315), *Roberts* 1334; 6 May 1983—Blendon Woods, *Owens*.

## OSMUNDACEAE, Royal Fern Family

### 1. OSMUNDA L.

Tall; leaves pinnate to bipinnate, dimorphic, fertile leaves or fertile pinnae not foliaceous; sporangium opening by longitudinal (vertical) cleft.

- a Leaves bipinnate; lower pinnae of fertile leaves foliaceous, only upper pinnae bearing sporangia. 1. *O. regalis*
- a' Sterile leaves pinnate-pinnatifid.
  - b All pinnae of fertile leaves bearing sporangia, none foliaceous; mature pinnae of sterile leaves brown-tomentose at base and ciliate at margin. 2. *O. cinnamomea*
  - b' Middle pinnae of fertile leaves bearing sporangia, upper and lower foliaceous; mature sterile pinnae not or slightly brown-tomentose at base, not ciliate at margin. 3. *O. claytoniana*

#### 1. *Osmunda regalis* L. var. *spectabilis* (Willd.) A.Gray

Royal Fern  
Blades bipinnate; lower pinnae of fertile leaves foliaceous, only upper pinnae bearing sporangia. Syn.: *O. spectabilis* Willd.

REFERENCES: Riddell 1834:159; Sullivant 1840:55; Selby & Craig 1890:18.

HERBARIUM RECORDS: Aug 1890—E Franklin Co., *Selby & W. Green*; 9 Aug 1890—Taylor's Woods, *Selby*; 9 Sep 1892—near Wyandot Grove, *Selby* (OS, WOOS).

#### 2. *Osmunda cinnamomea* L.

Cinnamon Fern

Leaves dimorphic; sterile leaves pinnate-pinnatifid, pinnae brown-tomentose at base and ciliate at margin; fertile leaves bearing only sporangia (non foliaceous).

REFERENCES: Riddell 1834:159; Sullivant 1840:55; Selby & Craig 1890:18.

NOTE: No specimens seen from Franklin Co.

#### 3. *Osmunda claytoniana* L.

Interrupted Fern

Middle pinnae of fertile pinnate-pinnatifid leaves bearing sporangia, upper and lower foliaceous. Syn.: *O. interrupta* Michx.

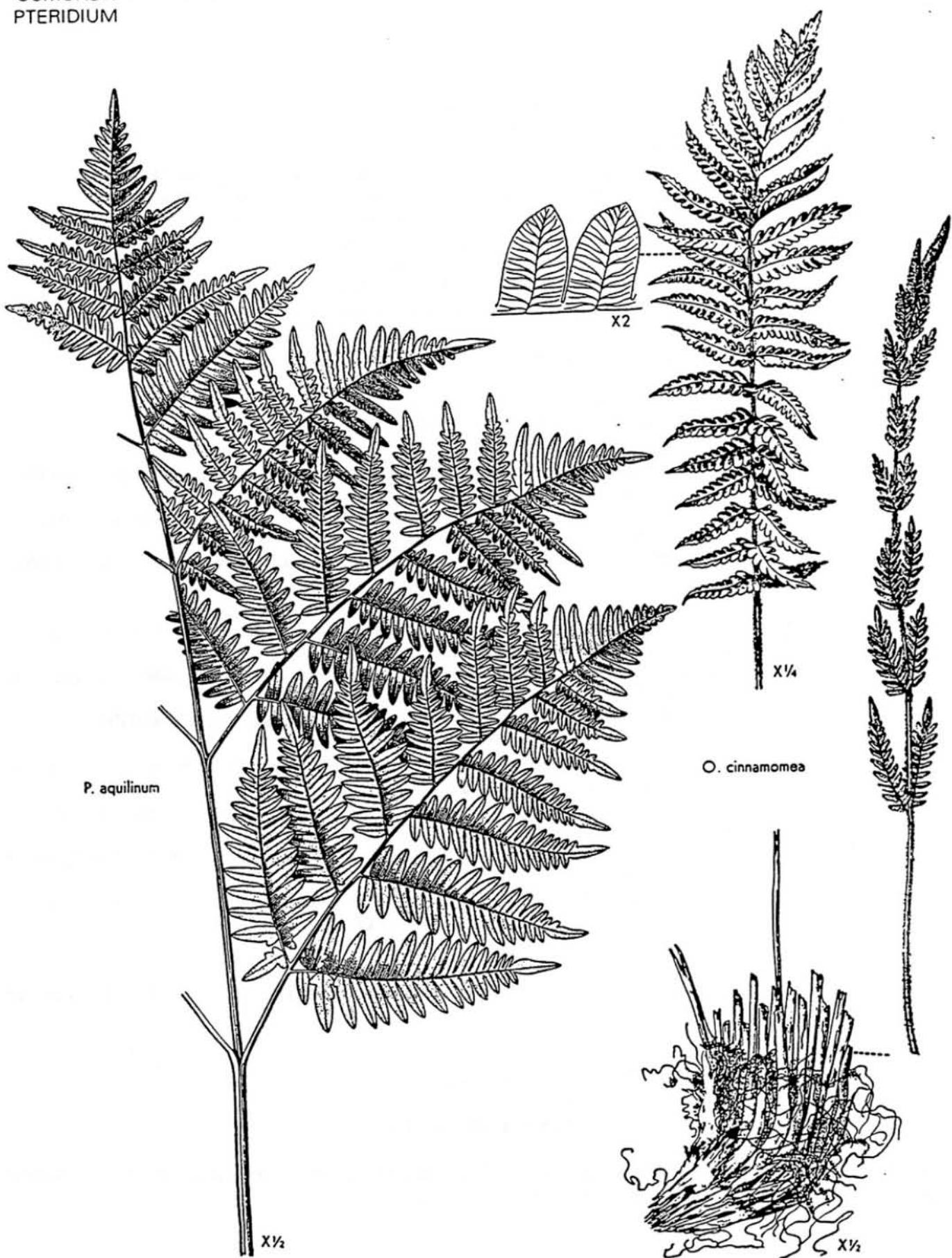
REFERENCES: Sullivant 1840:55; Selby & Craig 1890:18.

HERBARIUM RECORD: 1840—Cols., *Sullivant*.

## POLYPODIACEAE, Polypody Family

Leaves simple to decomound, often bearing scales, especially toward base; sporangia in sori on backs or margins of blades; indusia present or absent.

OSMUNDA  
PTERIDIUM



In some species, apical part of blade is less divided than the remainder; when this is true, the phrase "except at tip" is implied in statements of degree of division of blade. When position of indusium is stated, it is implied that leaf is lying with under side upward.

- a Leaf-blade simple, entire. **5. ASPLENIUM**
- a' Leaf-blades compound or pinnatifid.
  - b Fertile leaves without flat green blades, unlike the sterile.
    - c Rachis of sterile blade not winged. **12. MATTEUCCIA**
    - c' Rachis of sterile blade winged.
      - d Sterile blade ovate or deltoid; groups of sori enclosed in globose pinnules. **13. ONOCLEA**
      - d' Sterile blade lanceolate; sori oblong, in rows, not enclosed. **14. WOODWARDIA**
  - b' Fertile and sterile leaves (or pinnae) both with flat green blades, but not always equal in size.
    - e Sori neither with true indusia nor covered by reflexed blade-margin. **9. THELYPTERIS**
    - e' Sori marginal, covered by reflexed blade-margin. (See e").
      - f Sori discontinuous, covered by reflexed pinnule-teeth. **3. ADIANTUM**
      - f' Sori continuous, covered by reflexed pinna- or pinnule-margin.
        - g Blades lanceolate, pinnate or bipinnate. **4. PELLAEA**
        - g' Blades deltoid, ternate, each part bipinnate. **2. PTERIDIUM**
    - e" Sori with true indusia.
      - h Indusium wholly or partly below sporangia (between sporangia and blade).
        - i Sori marginal; indusium cuplike. **1. DENNSTAEDTIA**
        - i' Sori not marginal.
          - j Indusium hoodlike, attached at side, partly under sporangia, arching over them at least when young. **7. CYSTOPTERIS**
          - j' Indusium disk- or cuplike, attached at center, edge folded over sporangia, later separating into lobes and spreading. **8. WOODSIA**
      - h' Indusium above sporangia (sporangia between indusium and blade), covering them at least when young.
        - k Indusium elongate, straight or curved, attached along one side.
          - l Sori in chainlike rows parallel to midveins of pinnae or their divisions. **14. WOODWARDIA**
          - l' Sori oblique to midveins of pinnae or their divisions.
            - m Small ferns; leaves mostly evergreen, mostly less than 5 cm wide at widest part.  
**5. ASPLENIUM**
              - m' Large ferns; leaves deciduous, 10-30 cm wide at widest part. **6. ATHYRIUM**
        - k' Indusium circular or reniform, attached at center.
          - n Indusium without a sinus; sori on only smaller upper pinnae of fertile blades; blades pinnate, leaflets auricled at base. **11. POLYSTICHUM**
          - n' Indusium with a sinus, circular or reniform; sori not confined to upper pinnae of fertile leaves; blades pinnate-pinnatifid to tripinnate.
            - o Blades pinnate-pinnatifid, at least the sterile ones thin; veins in base of petiole 2, free or united; deciduous. **9. THELYPTERIS**
            - o' Blades pinnate-pinnatifid to tripinnate, of firmer texture than above; veins in base of petiole 3-5; usually evergreen. **10. DRYOPTERIS**

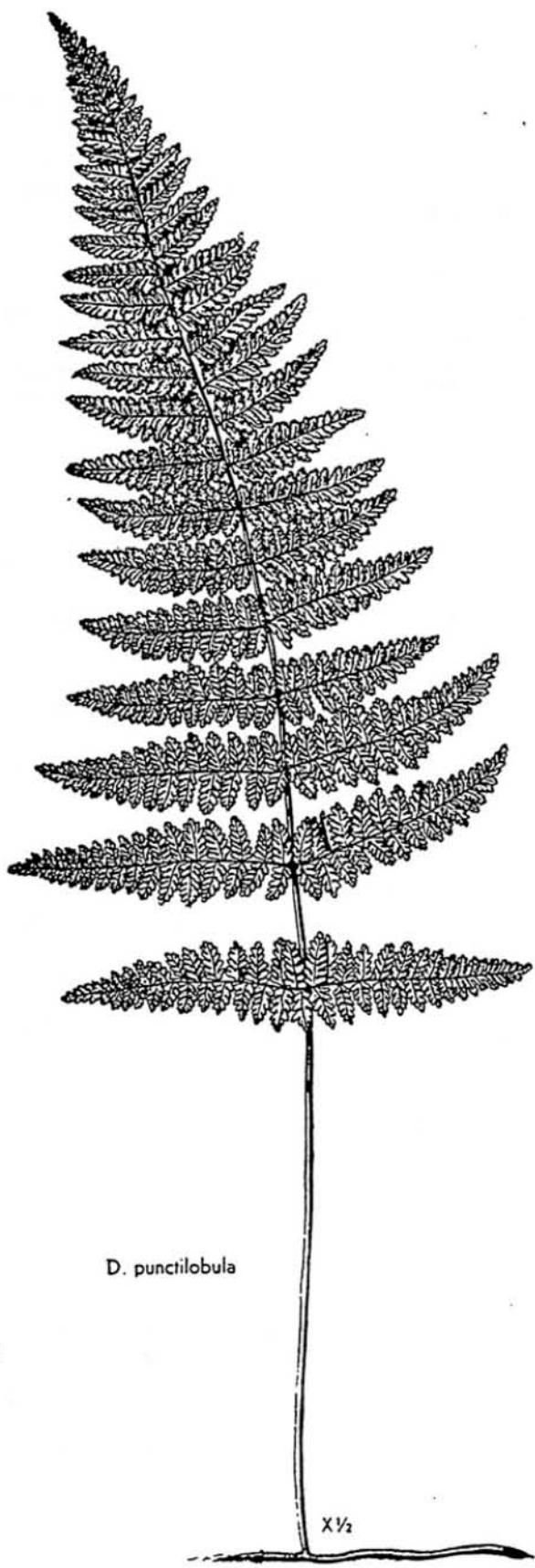
The separation of Weishaup's Polypodiaceae into distinct families as recognized by Cronquist (1991) is indicated in parentheses.

(DENNSTAEDTIACEAE, Bracken Family)

**1. DENNSTAEDTIA** Bernh.

Rhizomes extensive; leaves scattered, deciduous; blades delicate, fragrant, bipinnate-pinnatifid, lanceolate; indusium cuplike, formed partly from a recurved tooth of leaf-margin.

DENNSTAEDTIA  
ADIANTUM



**1. *Dennstaedtia punctilobula* (Michx.) T.Moore**

Hay-scented Fern

Blades frequent, bipinnate-pinnatifid; sori marginal; indusium cuplike. Syn.: *Dicksonia pilosiuscula* Willd.

REFERENCES: Riddell 1836:22 (Cols., *Lapham*; slaty ravine 2 mi. N of Worthington); Selby 1891a:111a.

HERBARIUM RECORDS: 1890—near Westerville, *Selby*; 8 Jul 1891—*Selby*; Aug 1931—Red Hills, *Chapman*; 16 Jul 1990—Overbrook Dr. Ravine, N facing slope of a shale cliff along brook side, Clinton Twp., *Lowden 4442*.

NOTE: New record for Franklin Co.

**2. PTERIDIUM Gled. Bracken**

Leaves deciduous, scattered along the extensive forking rhizomes; glands in axils of lower pinnae; blades sometimes several feet wide, firm, bipinnate-pinnatifid to tripinnate-pinnatifid; sori marginal, covered by pinnule-margins.

**1. *Pteridium aquilinum* (L.) Kuhn**

Bracken, Tailed Bracken

Blades usually large, deltoid, ternate, each part bipinnate; sori marginal, covered by a continuous reflexed blade-margin. Syn.: *P. aquilina* L.

REFERENCES: Riddell 1834:159; Sullivant 1840:55; Selby & Craig 1890:18.

HERBARIUM RECORDS: 14 Aug 1839—Duncan's Plains, *J. Paddock Collection* (ILL); 4 Nov 1903—Cols., *J. H. Schaffner*; Summer 1938—OSU Botanical Gardens, *C. Jones*.

(ADIANTACEAE, Maidenhair Fern Family)

**3. ADIANTUM L. Maidenhair Fern**

Graceful, delicate; leaves decomound, pinnules lobed, dichotomously veined; rachis dark, lustrous; sori marginal, covered by reflexed pinnule-lobes.

- a Main rachis dichotomous, the 2 branches arching, the elongate compound pinnae borne along convex side of the curves. **1. *A. pedatum***
- a' Main rachis not dichotomous, the leaf pinnately compound or decomound. **2. *A. capillus-veneris***

**1. *Adiantum pedatum* L. subspecies *pedatum***

Northern Maiden-hair

Leaves delicate, rachis dichotomous, pinnules lobed; rachis dark, lustrous; sori marginal, covered by reflexed pinnule-lobes.

REFERENCES: Riddell 1834:159; Sullivant 1840:54; Selby & Craig 1890:18.

HERBARIUM RECORDS: Dec 1894—Worthington, *Craig*; 6 May 1899—*Fullmer*; 6 Jun 1927—near Westerville, wet woods, *Seall*; [ca. 1982]—Blendon Woods, [Owens]; 17 Jul 1987—Highbanks Metro Park (Delaware Co.), woods, *Watts*; Jul 1988—Highbanks Metro Park (Delaware Co.), wooded well-drained slopes, *Kosko 49* (OS, OWU); 13 May 1989—mesic wooded slopes on W side of Big Darby Creek, just S of Rt. 665, Pleasant Twp., Harrisburg Quad., *McCormac 557*; 30 Jun 1992—Camp Mary Orton, woods, W of Rt. 23, N of Worthington, Sharon Twp., *Lowden 4974*.

**2. \**Adiantum capillus-veneris* L.**

Venus's-hair Fern, Southern Maiden-hair

Cultivated (native of warm-temperate & tropical regions)

Similar to *Adiantum pedatum* except leaf rachis not dichotomous; leaf pinnately compound or decomound.

HERBARIUM RECORDS: 7 Dec 1884—OSU greenhouse, *Craig*; 18 Feb 1899—OSU greenhouse, *J. H. Schaffner*.

**4. PELLAEA Link Cliff Brake**

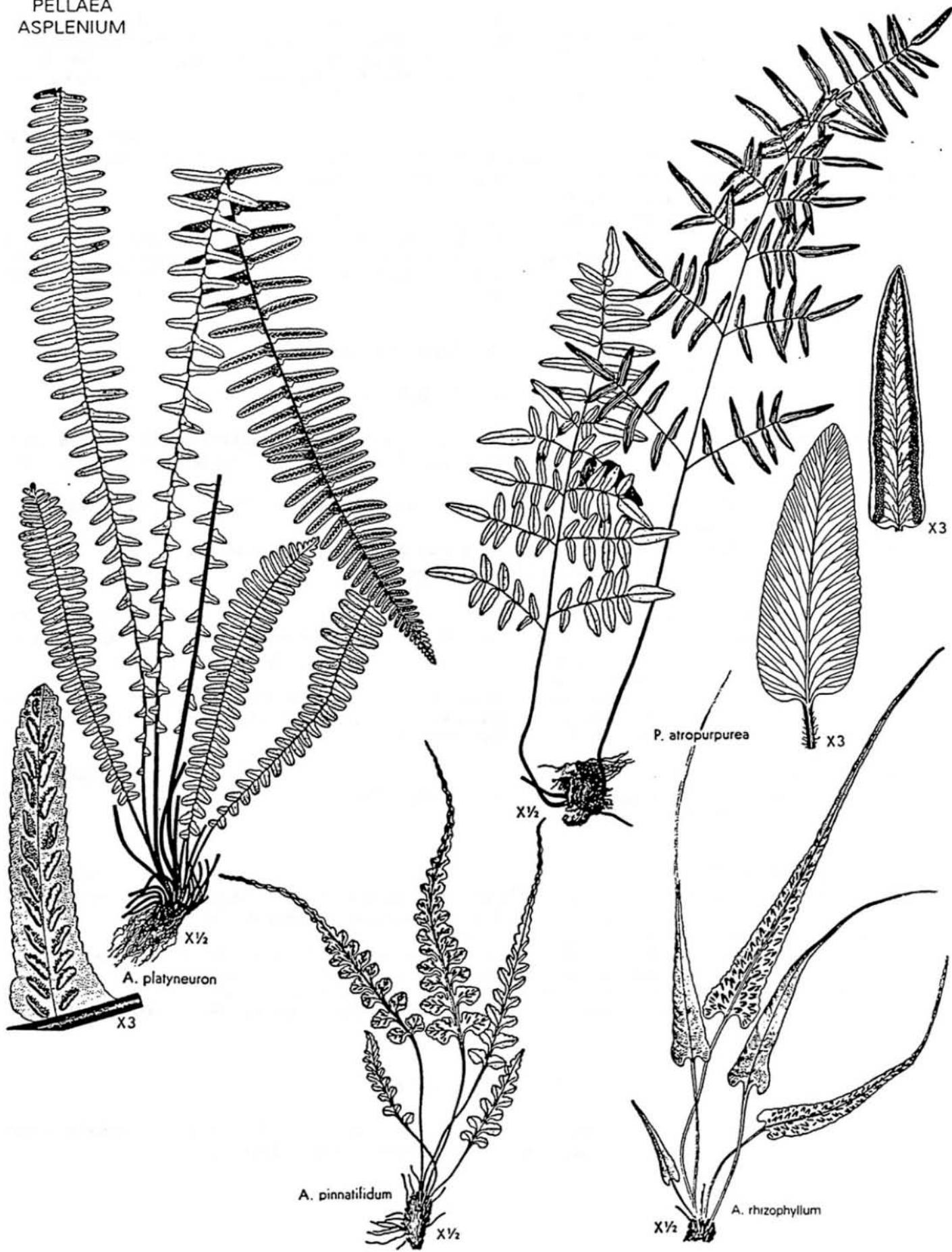
Small ferns growing on rocks; leaves clustered, evergreen; blades pinnate to bipinnate; fertile leaves somewhat taller than sterile, pinnae narrower; petioles dark; sori marginal, covered by reflexed margins of pinnae or pinnules.

- a Petiole and rachis glabrous or nearly so; lower pinnae of fertile leaves usually trifoliolate. **1. *P. glabella***
- a' Petiole and rachis pubescent; lower pinnae of fertile leaves pinnate. **2. *P. atropurpurea***

**1. †*Pellaea glabella* Mett.**

Smooth Cliff-brake

PELLAEA  
ASPLENIUM



Similar to *Pellaea atropurpurea*; petiole and rachis nearly glabrous; lower pinnae of fertile leaves usually trifoliate.  
On limestone rocks.

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; Fall 1892—*Fullmer*, 31 May 1896—Cols., *E. M. Wilcox*; 31 Aug 1896—*Dublin*, *W. Kellerman*; 31 Aug 1896—*Scioto R.*, *W. Kellerman*; 1 Apr 1898—Cols., *J. H. Schaffner*, 27 Apr 1901—*Hayden Falls*, *Mead*; 21 Apr 1919—*Hayden's Fall*, *Scioto R.*, *E. & S. Raymond*; 25 Apr 1977—on bare limestone cliff, N side of Hayden Run gorge, *Scioto R.*, N of Cols., *W. Carr 121*; 31 Jul 1990—*Hayden Falls*, just W of *Scioto R.* off Hayden Run Rd., *Norwich Twp.*, *Lowden 4475*; 23 May 1991—along Hayden Run, just W of the *Scioto R.*, vertical limestone cliff faces, uncommon & scattered, S side of Hayden Run Rd., *Norwich Twp.*, NW Cols. Quad., *McCormac 3567*.

**2. *Pellaea atropurpurea* (L.) Link**

Purple Cliff Brake

Blades lanceolate, pinnate to bipinnate; sori marginal, covered by a continuous reflexed blade-margin; petiole and rachis pubescent; lower pinnae of fertile leaves pinnate, some of the upper pinnae often with a superior auricle. Syn.: *Pteris atropurpurea* L. Rocky limestone bluffs.

REFERENCES: Riddell 1834:159 (rocky situations); *Sullivant* 1840:55; *Selby & Craig* 1890:18.

HERBARIUM RECORDS: 1 Apr 1898—Cols., *J. H. Schaffner*, 1 Apr 1967—limestone cliffs, abandoned quarry, E bank of the *Scioto R.*, approx. 1 mi. S of *Dublin*, *Stuckey 3353*; 27 Mar 1971—along *Scioto R.* near limestone quarries, growing on sheet rock face of quarry, *Roberts & D. Keil K6940*; Aug 1973—limestone quarry, 1 mi. S of *Dublin* on E side of *Scioto R.* along Rt. 33, *Roberts & D. Keil*; 22 Jul 1992—The Quarry, off Rt. 33, E side of *Scioto R.* just in front of the Riverside Green entrance, approx. ½ mi. S of Rt. 161, *Perry Twp.*, *Lowden 4993*.

(ASPLENIACEAE, Spleenwort Family)

**5. *ASPLENIUM* L. Spleenwort**

Small, evergreen; blades entire-simple or pinnatifid to bipinnate; sori elongate, straight or slightly curved, indusium attached along one edge. Several known or reputed interspecific hybrids have been collected or reported in Ohio.

a Blades simple, cordate at base, entire or undulate, long attenuate to freely-rooting tips. 3. *A. rhizophyllum*

a' Blades once pinnatifid or once pinnate.

b Blades pinnatifid, or base sometimes pinnate, long-attenuate at apex. 2. *A. pinnatifidum*

b' Blades once pinnate; petiole and rachis dark. 1. *A. platyneuron*

**1. *Asplenium platyneuron* (L.) Oakes**

Ebony Spleenwort

Blades once pinnatifid; petiole rachis dark; pinnae usually alternate, those of the fertile blade to 3 cm long; sterile leaves spreading, shorter than the fertile erect ones; sori elongate; indusium attached along one edge.

REFERENCE: Riddell 1834:159 (*Asplenium ebeneum*, [rocky situations]).

HERBARIUM RECORDS: 19 Oct 1903—*Gahanna*, *Jennings*; 7 Oct 1905—*High Banks*, *Fischer*; 17 Jul 1971—*Clinton Twp.*, W of *Olentangy River Rd.*, approx. ½ mi. N of *Henderson Rd.*, *Roberts 1340*; [ca. 1982]—*Blendon Woods*, *Owens*; 12 May 1991—RR underpass, near *Alkire Rd.*, E bank of *Big Darby Creek*, *Battelle Darby Creek Metro Park*, *Pleasant Twp.*, *Lowden 4626*.

**2. *Asplenium pinnatifidum* Muhl.**

Lobed Spleenwort

Syn.: *A. rhizophyllum* Willd. var. *pinnatifidum* Muhl., *A. pinnatifidum* Nutt.

REFERENCES: *Sullivant* 1840:54; *Selby & Craig* 1890:18.

NOTE: No specimens seen from Franklin Co.

**3. *Asplenium rhizophyllum* L.**

Walking Fern

Small evergreen fern; leaf-blade simple, entire; blades lanceolate, cordate at base, long-attenuate to freely-rooting tips; sori elongate, irregularly scattered, sometimes paired. Syn.: *Camptosorus rhizophyllum* (L.) Link

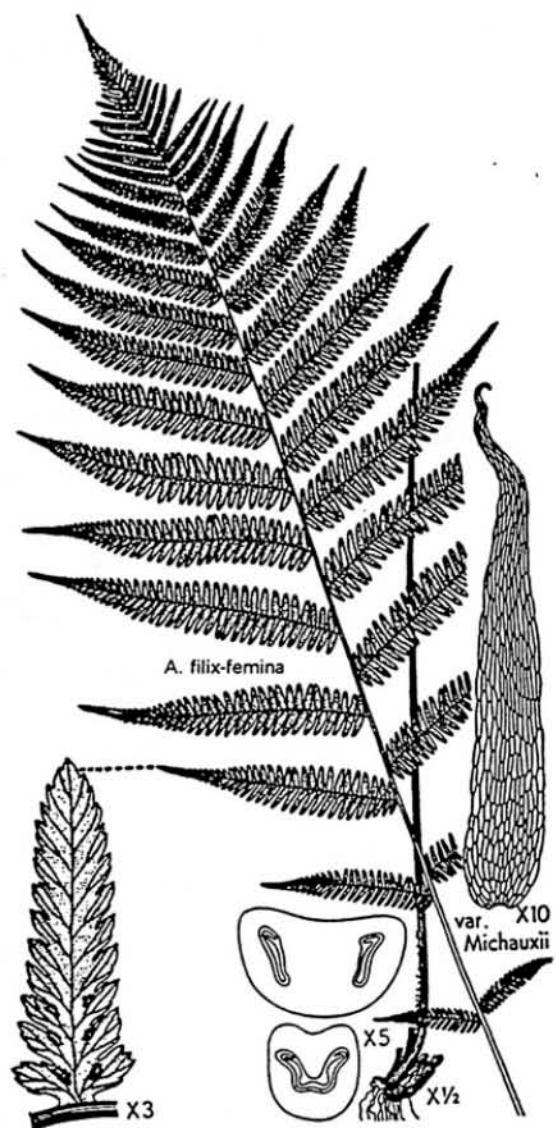
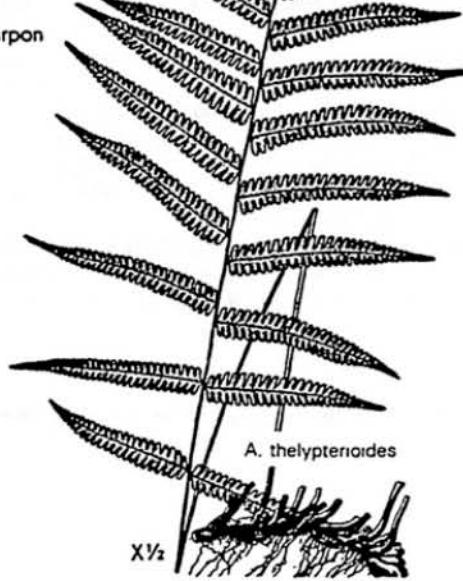
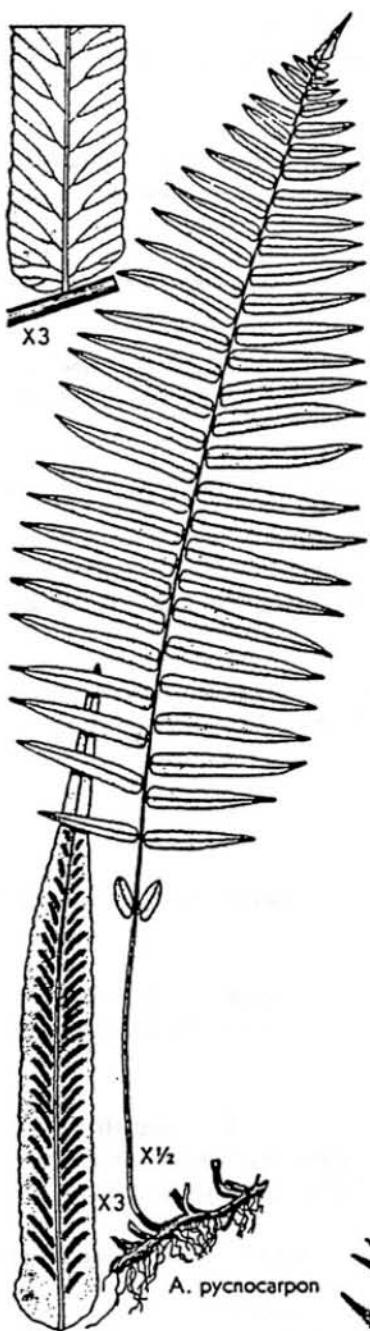
REFERENCES: Riddell 1834:159 (rocky situations); *Selby & Craig* 1890:18.

HERBARIUM RECORDS: 1889—*Wyandot Grove*, *Selby*; 20 Jul 1890—*Wyandot Grove*, *Selby*; 7 Nov 1890—*Scioto R.*, *Craig*; Jun 1893—*Scioto R.*, near Cols., *E. M. Wilcox*; 1 Apr 1898—near Cols., *J. H. Schaffner*, 21 Apr 1899—*Scioto R.*, Cols., *W. Kellerman*; 21 Apr 1919—*Ha[y]den's Fall*, *Scioto R.*, mesophytic forest, *E. & S. Raymond*; 18 Jun 1991—*Dublin Rd.*, 1 mi. N of *Tuttle Rd.*, W side of *Scioto R.*, between bridge and deep canyon ravine leading to river, *Washington Twp.*, *Lowden 4705*; 10 Jun 1993—S side of *Indian Run*, ravine just W of Rt. 745, *Dublin*, *Washington Twp.*, *Lowden 5075*.

**6. *ATHYRIUM* Roth**

Woodland ferns; leaves large, deciduous; blades thin, pinnate to tripinnate; sori linear or oblong, straight, curved, or U-shaped, at side of, and sometimes crossing, small veins; indusium attached along one side.

ATHYRIUM



- a Blades pinnate; pinnae linear-lanceolate, entire, fertile slightly narrower than sterile. 1. *A. pycnocarpon*
- a' Blades pinnate-pinnatifid to tripinnate.
- b Blades pinnate-pinnatifid; ultimate segments blunt, entire or crenate. 2. *A. thelypteroides*
- b' Blades mostly bipinnate, pinnules toothed to deeply pinnatifid. 3. *A. filix-femina*, blade widest near middle, cilia of indusia glandless, var. *michauiii*

**1. *Athyrium pycnocarpon* (Spreng.) Tidestr.** Narrow-leaved Spleenwort, Narrow-leaved Glade Fern

Blades pinnate; pinnae linear-lanceolate, entire; indusium attached along one side. Syn.: *Asplenium angustifolium* Michx.

REFERENCES: Riddell 1834:159; Sullivant 1840:54; Selby & Craig 1890:18.

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 1 Aug 1892—near Cols., *E. M. Wilcox*; 6 Aug 1892—Cols., *Werner*, 7 Sep 1899—Worthington, *Selby* (OS, WOOS); 8 Aug 1937—E of Worthington, *Blaydes*.

**2. *Athyrium thelypteroides* (Michx.) Desv.** Silvery Spleenwort, Silvery Glade Fern

Blades pinnate-pinnatifid; ultimate segment blunt, entire or crenate; indusium attached along one side. Moist ravines. Syn.: *Asplenium thelypteroides* Michx.

REFERENCES: Riddell 1834:159; Sullivant 1840:55; Selby & Craig 1890:18.

HERBARIUM RECORDS: 17 Jul 1987—Highbanks Metro Park (Delaware Co.), *Watts* 378 (OS, OWU); 30 Jun 1992—Camp Mary Orton, woody ravine along E bank of Olentangy R., W of Rt. 23, N of Worthington, *Sharon Twp.*, *Lowden* 4973.

**3. *Athyrium filix-femina* (L.) Roth var. *michauiii* Mett.** Lady Fern, Northern Lady Fern

Blades mostly bipinnate, pinnules toothed to deeply pinnatifid; indusium attached along one side. Woodlands.

Syn.: *Aspidium filix-femina* Willd., *Asplenium filix-femina* Bernh.

REFERENCES: Sullivant 1840:54; Selby & Craig 1890:18.

HERBARIUM RECORDS: 20 Jul 1890—Glover's Woods, *Selby*; 7 Sep 1899—Worthington, *Selby* (OS, WOOS); 8 Aug 1937—E of Worthington, *Blaydes*; 10 Jun & 3 Aug 1990—along both sides of McOwen Rd., woody swampy area, where McOwen Rd. meets Dixon Rd. at Franklin/Licking Co. line, Jefferson Twp. (NW corner), *Lowden* 4377 & 4509.

**7. CYSTOPTERIS Bernh. Bladder Fern**

Leaves deciduous; blades thin, lanceolate to ovate, pinnate-pinnatifid to tripinnate; indusium hoodlike, partly beneath the sporangia, covering them when young.

- a Blades widest just above base, not prolonged, without bulblets; veins ending mostly in teeth. 1. *C. protusa*
- a' Blades widest at base, the fertile much prolonged, often bearing bulblets; veins ending mostly between teeth.

**2. *C. bulbifera***

**1. *Cystopteris protusa* (Weath.) Blasdell**

Lowland Brittle Fern

Indusia round to ovate; rhizomes long-creeping, scaly and densely villous; stipes brown but usually straw-colored and scaly above the base. Wet woody bottomlands. Syn.: *Aspidium fragile* Willd., †*Cystopteris fragilis* (L.) Bernh., misapplied

REFERENCES: Riddell 1834:159 (*Aspidium tenuie*); Sullivant 1840:54; Selby & Craig 1890:18; Kellerman & Werner 1893:232; Inniswood Location 7-8, 15, 25-26.

HERBARIUM RECORDS: Jul 1889—N. Cols. Run, *Craig*; [ca. 1890]—Cols., Ohio Agricultural Experiment Station; 6 May 1899—Franklin Co., *Fullmer*, 26 May 1986—Highbanks Metro Park (Delaware Co.), closed forest in Shale Creek Woods, *Witsberger* 911 (OS, OWU); 11 Jun 1989—Highbanks Metro Park (Delaware Co.), top edges of ravines due N of Overlook viewing area, *Watts* 473 (OS, OWU); 3 Aug 1990—Overbrook Dr., ravine off Indianola Ave. S of Cooke Rd., Clinton Twp., sandy soil amongst *Equisetum hymale* var. *affine*, *Lowden* 4500; 29 May & 2 Jun 1991—Hoover Dam Park, W of Cubbage Rd., wet woody bottomland, *Lowden* 4640 & 4647; 13 Jun 1991—Friendship Park, jct. of Rocky Fork Creek & Big Walnut Creek S of Rt. 317, Gahanna, Mifflin Twp., *Lowden* 4691; 30 Jun 1992—Camp Mary Orton, W of Rt. 23, N of Worthington, woody slope near E bank of the Olentangy R., *Sharon Twp.*, *Lowden* 4976.

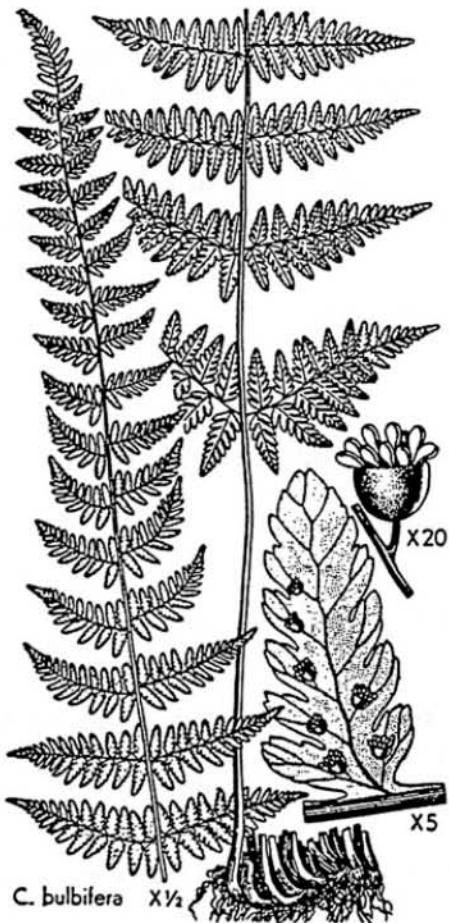
NOTE: Adams 1982:24 treats †*Cystopteris fragilis* as an exclusion stating "Fernald (150) attributed this taxon to N Ohio. Blasdell (1963) cited no Ohio specimens, and I know of none." Two specimens annotated *Cystopteris tenuis* (Michx.) Desv., "a fertile hybrid between *C. protusa* and an unknown diploid species" are included here; one being a second specimen of *Craig* from N. Cols. Run (Jul 1889) and the other collected by J. H. Schaffner from Cols. (Spring 1898).

**2. *Cystopteris bulbifera* (L.) Bernh.**

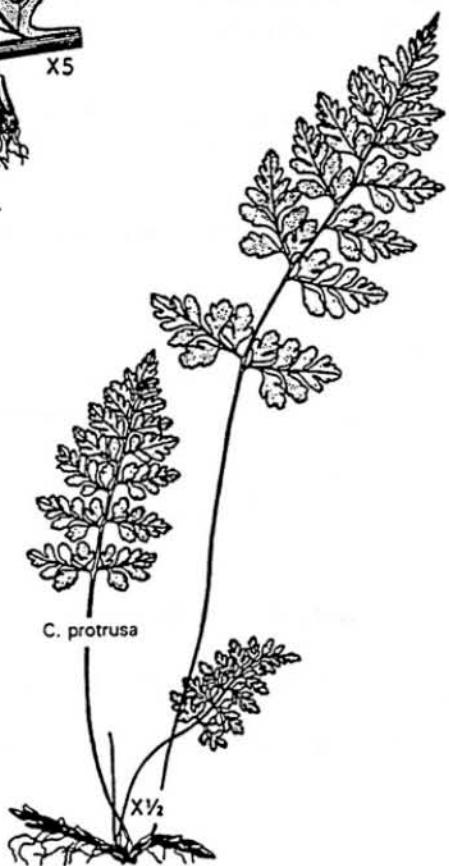
Bulblet Fern

Blades widest at base, the fertile much prolonged, often bearing bulblets; veins ending mostly between teeth. Rocky crevices. Syn.: *Aspidium bulbiferum* Willd.

CYSTOPTERIS  
WOODSIA



C. bulbifera X $\frac{1}{2}$



C. protrusa



W. obtusa

REFERENCES: Riddell 1834:159 (rocky situations); Sullivant 1840:54; Selby & Craig 1890:18.

HERBARIUM RECORDS: 27 Jun 1892—Wyandot Grove, *Selby*; 31 Aug 1896—Dublin, *W. Kellerman*; 20 Aug 1899—Hayden's Falls, *Selby*; 12 Aug 1905—Hayden Falls, *Fischer*; 18 Jun 1991—W bank of Scioto R., Dublin Rd., 1 mi. N of Tuttle Rd., in deep canyon ravine between small bridge & Scioto R., Washington Twp., *Lowden 4704*.

## 8. WOODSIA R.Br. Cliff-fern

Low tufted ferns; blades lanceolate, pinnate-pinnatifid to bipinnate-pinnatifid; rachis and petiole glandular; sorus globose; indusium attached beneath the sporangia, the edge folded over and enclosing them when young, later splitting into several toothed segments and spreading.

### 1. *Woodsia obtusa* (Spreng.) Torr.

Blunt-lobed or Large Woodsia

Blades pinnate-pinnatifid to bipinnate-pinnatifid; rachis and petiole minutely gland-dotted; sori globose; indusia cuplike, later edge separates into lobes spreading over sporangia.

REFERENCE: Selby 1892a:111 (Scioto R., *Werner*).

HERBARIUM RECORD: 189—near Cols., rocky banks, E side of Scioto R., below Fishinger's Mill, *Werner*.

## 9. THELYPTERIS Schmidel

Leaves usually deciduous; blades triangular or longer than wide, thin; sori circular, with or without indusia.

a Sori without indusia; blades triangular, length and width nearly equal. 1. *T. hexagonoptera*

a' Sori with indusia; blades longer than wide.

b Lower pinnae very short; blades delicate. 2. *T. noveboracensis*

b' Lower pinnae little shorter than middle ones; fertile blades somewhat thicker than sterile ones, pinnae narrower, revolute-margined. 3. *T. palustris*

### 1. *Thelypteris hexagonoptera* (Michx.) Weath.

Broad Beech Fern, Long Beech Fern

Blades triangular, pinnate-pinnatifid or bipinnatifid, usually as wide as long; lowest pair of pinnae joined by wing to next above; sori globose, without indusia. Syn.: *Dryopteris hexagonoptera* (Michx.) C.Chr., *Phegopteris hexagonoptera* Fée, *Polypodium hexagonopterum* Michx.

REFERENCES: Riddell 1834:159; Sullivant 1840:55; Selby & Craig 1890:18.

HERBARIUM RECORDS: Aug 1890—Franklin Co. E, *Selby*; 7 Oct 1905—High Banks, *Fischer*; 17 Jul 1987—Highbanks Metro Park, dry woods, *Watts*; 3 Aug 1987—Highbanks Metro Park (Delaware Co.), oak woods directly N of Franklin/Delaware Co. line, *Watts 390*.

### 2. *Thelypteris noveboracensis* (L.) Nieuwl.

New York Fern

Syn.: *Aspidium noveboracense* Sw., *Aspidium noveboracense* Willd., *Dryopteris noveboracensis* (L.) A.Gray

REFERENCES: Sullivant 1840:54; Selby & Craig 1890:18.

NOTE: No specimens seen from Franklin Co.

### 3. *Thelypteris palustris* Schott var. *pubescens* (G.Lawson) Fernald

Marsh Fern

Blades pinnate-pinnatifid; pinnae revolute-margined, lower ones shorter than middle ones; sori globose; indusia pilose (Lellinger 1985). Syn.: *Aspidium thelypteris* Sw., *A. thelypteris* Willd., *Dryopteris thelypteris* (L.) A.Gray var. *pubescens* (G.Lawson) Nakai

REFERENCES: Riddell 1834:159; Sullivant 1840:54; Selby & Craig 1890:18.

HERBARIUM RECORDS: 9 Aug 1890—Taylor's Wood, *Selby*; 21 Sep 1901—Olentangy R., Clintonville, *Bridwell & Tyler*, [ca. 1982]—Blendon Woods, *Owens*.

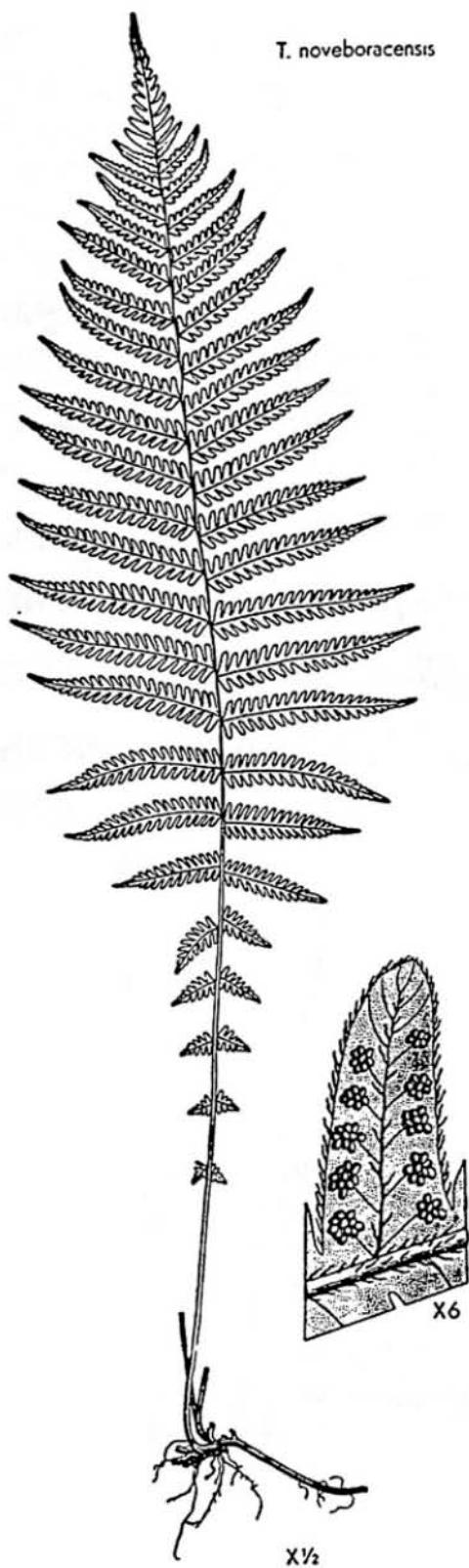
## 10. DRYOPTERIS Adans. Shield Fern

Leaves usually evergreen, firm, pinnate-pinnatifid to tripinnate; sori circular, with indusia.

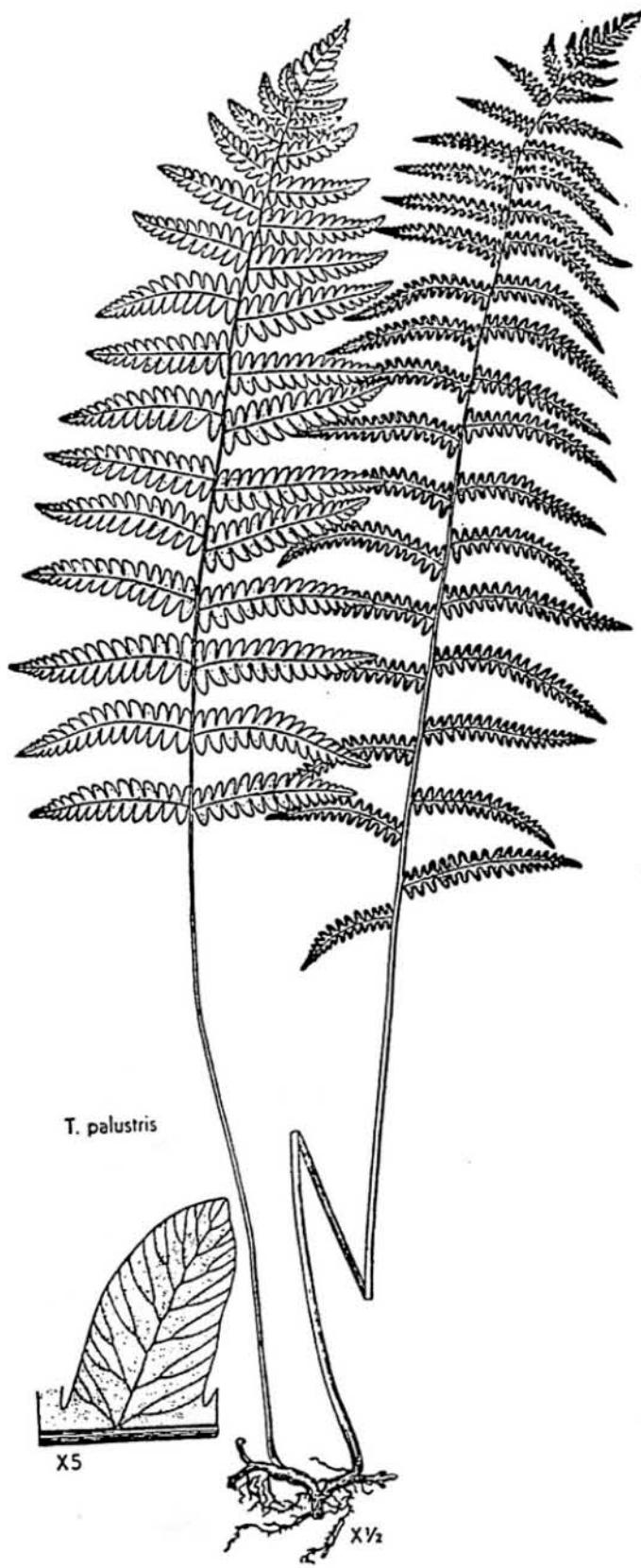
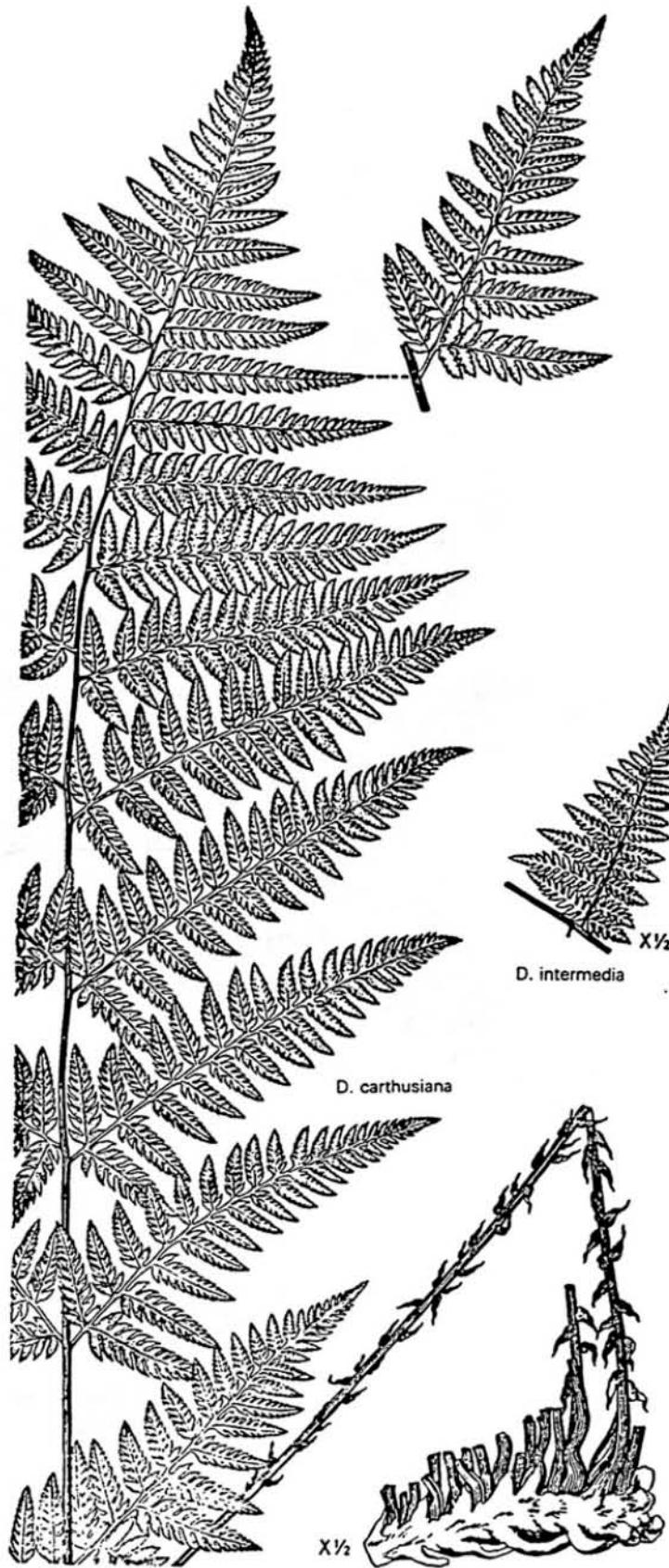
a Sori near margin; blades gray-or blue-green, firm, pinnate-pinnatifid to bipinnate-pinnatifid. 1. *D. marginalis*

a' Sori not at margin; blades green.

THELYPTERIS



THELYPTERIS  
DRYOPTERIS



- b Blades bipinnate to tripinnate; lower pinnae strongly asymmetric; lobes or teeth with mucronate or spinulose tips.
- c Basal pinnule on lower side of lowest pinna longer than one next to it; pinnae ascending; blade glabrous.  
*5. D. carthusiana*
- c' Basal pinnule, described above, not longer than one next to it; pinnae spreading at almost a right angle to rachis; blade glandular. *4. D. intermedia*
- b' Blades pinnate-pinnatifid to bipinnate; lower pinnae almost symmetric; lobes or teeth not or only slightly mucronate.
  - d Blades ovate, abruptly narrowed at tip; pinnae narrowed slightly to base. *3. D. goldiana*
  - d' Blades lanceolate, gradually narrowed to tip; pinnae widest at their bases. *2. D. cristata*, basal pinnae of fertile leaves flat or nearly so, twice as long as wide or more, var. *clintoniana*

**1. *Dryopteris marginalis* (L.) A.Gray**

Marginal Shield Fern

Sori at blade margins; indusium circular or reniform, with a sinus; blades gray-blue green, pinnate-pinnatifid to bipinnate-pinnatifid. Syn.: *Aspidium marginale* Willd., *A. marginalis* Sw.

REFERENCES: Riddell 1834:159; Riddell 1835:106 (Worthington, shady argillaceous ravines); Sullivant 1840:54; Selby & Craig 1890:18.  
HERBARIUM RECORDS: Sep 1888—Cols., *Craig*; 1 Aug 1962—woods in deep ravine, W side of Rt. 23, 0.8 mi. S of Delaware Co. line, Flint Ravine, Sharon Twp., *E. Herrick*; 29 Sep 1985—Highbanks Metro Park (Delaware Co.), closed forest, somewhat rare, *Witsberger 863* (OWU); 17 Jul 1987—wooded slopes, Highbanks Metro Park (Delaware Co.), *Watts*; 16 Jul 1990—Overbrook Dr. Ravine, off of N. High St., shale ravine cliff near brook, Clinton Twp., *Lowden 4443*.

**2. *Dryopteris cristata* (L.) A.Gray**

Crested Wood Fern

Syn.: *Aspidium cristatum* Sw.

REFERENCES: Riddell 1834:159 (& *Aspidium lancastriense*); Sullivant 1840:54 (*Aspidium lancastriense* Spreng.); Selby & Craig 1890:18.

NOTE: No specimens seen from Franklin Co. See Weishaup 1971:19, perhaps the name *Dryopteris cristata* (L.) A.Gray var. *clintoniana* (D.C.Eaton) Underw. belongs here.

**3. *Dryopteris goldiana* (Hook.) A.Gray**

Goldie's Wood Fern

Sori in two rows along midvein of pinnules; indusium circular or reniform, with a sinus; blades pinnate-pinnatifid to bipinnate, abruptly narrowed near tip. Syn.: *Aspidium goldianum* Hook.

REFERENCES: Sullivant 1840:54; Selby & Craig 1890:18.

HERBARIUM RECORDS: 28 Jun 1892—Worthington Woods, *W. Kellerman*; 7 Sep 1899—Worthington, *Selby*.

**4. *Dryopteris intermedia* (Muhl.) A.Gray**

Spinulose Shield Fern, Fancy Wood Fern, Spinulose Fern

Blades bipinnate to tripinnate, minutely glandular; teeth mucronate or spinulose tipped; basal pinnule on lower side of lowest pinna shorter or as long as the one next to it; sometimes pinnae spreading at almost right angle to rachis; indusia circular, with a sinus. Syn.: *D. spinulosa* var. *intermedia* (Muhl.) Underw.

REFERENCES: Sullivant 1840:54 (*Aspidium dilatatum* Willd.); Selby & Craig 1890:18 (*Aspidium spinulosum* Sw. & *Aspidium spinulosum* var. *dilatatum* Hook.).

HERBARIUM RECORDS: Sep 1888—Cols., *Craig*; 30 May 1896—Reservoir Park, *M. Wright*.

**5. *Dryopteris carthusiana* (Vill.) H.P.Fuchs**

Toothed Wood Fern

Blades bipinnate to tripinnate, glabrous; teeth mucronate or spinulose tipped; basal pinnule on lower side of lowest pinna longer than one next to it; pinnae ascending. Syn.: *D. spinulosa* (O.F.Müll.) Watt var. *spinulosa*

HERBARIUM RECORDS: 189—Worthington, *Werner*; 30 Jun 1992—Camp Mary Orton, W of Rt. 23, N of Worthington, Sharon Twp., *Lowden 4977*.

**11. POLYSTICHUM Roth**

Leaves evergreen; blades pinnate, pinnae with basal auricle on upper side; fertile blades longer than sterile, pinnae on upper half smaller and bearing sori; indusia circular, peltate.

**1. *Polystichum acrostichoides* (Michx.) Schott**

Christmas Fern

Blades pinnate, evergreen; pinnae with basal auricle; upper pinnae smaller and bearing sori; indusia without a sinus, circular peltate. Syn.: *Aspidium acrostichoides* Sw., *A. acrostichoides* var. *incisum* A.Gray

REFERENCES: Riddell 1834:159; Sullivant 1840:54; Selby & Craig 1890:18.

HERBARIUM RECORDS: Sep 1895—Cols., *Fullmer*; 15 Apr 1899—Central College, *Fullmer*; 6 Jun 1927—Westerville, *Seall*; [ca. 1982]—Blendon Woods, *Owens*; 29 Sep 1985—Highbanks Metro Park (Delaware Co.), closed forest, somewhat rare, *Witsberger 862* (OWU); 17 Jul 1987—Highbanks

**DRYOPTERIS  
POLYSTICHUM**



Metro Park (Delaware Co.), wooded slopes, *Watts*; 11 & 29 May 1991—Hoover Dam Park, W of Cubbage Rd., moist open bushy area, Blendon Twp., *Lowden 4610 & 4641*; 16 Apr 1992—Whetstone Park, shale cliff just N of the Clintonville Women's Society, Clinton Twp., *Lowden 4910*; 30 Jun 1992—Camp Mary Orton, W of Rt. 23, N of Worthington, Sharon Twp., *Lowden 4975*.

(ONOCLEACEAE, Sensitive Fern Family)

12. MATTEUCCIA Tod. Ostrich Fern

1. \*†*Matteuccia struthiopteris* (L.) Tod.

Ostrich Fern

Cultivated (Circumboreal)

Leaves dimorphic, rachis and petiole grooved; sterile blades large, oblanceolate, pinnate-pinnatifid; fertile blades shorter, pinnae smaller, ascending, pinnules beadlike, edges inrolled about groups of sori.

NOTE: Even though not cited in the literature and no specimens have been collected from Franklin Co., plants are seen in yards and gardens.

13. ONOCLEA L. Sensitive Fern

Leaves arising singly from spreading rhizomes, dimorphic; sterile leaves deciduous, blade deltoid, deeply pinnatifid, rachis winged, wing wider toward tip, veins anastomosing, ending free; fertile blades twice pinnate, pinnae smaller, pinnules beadlike, margins inrolled about groups of sori.

1. *Onoclea sensibilis* L.

Sensitive Fern

Leaves dimorphic; sterile leaves, deciduous, deltoid-shaped, deeply pinnatifid, rachis winged; fertile blades bipinnate, pinnules beadlike with margins inrolled about clusters of sori. Open wet areas. Syn.: *O. sensibilis* var. *obtusilobata* Torr.

REFERENCES: Sullivan 1840:55; Selby & Craig 1890:18.

HERBARIUM RECORDS: Aug 1888—Neil's Run, Cols., *Craig*; 20 Jul 1890—Glover's Woods, *Selby*; Jun 1892—Cols., *Addison*; 22 Aug 1899—*Selby*; 13 Oct 1901—S. Cols., *Bridwell*, *Tyler & Jennings*; 10 Oct 1934—174 E. 12th Ave., Cols., cult., *J. H. Schaffner*; [ca. 1982]—Blendon Woods, *Owens*; 29 May 1988—Highbanks Metro Park (Delaware Co.), *Morawetz 75* (OS, OWU); 19 May 1990—E of New Albany, 1 mi. W of Blacklick Creek along S side of Dublin-Granville Rd. (Rt. 161), Plain Twp., *Lowden 4311*; 10 Jun 1990—along both sides of McOwen Rd., woody swampy area, where McOwen Rd. meets Dixon Rd. at the Franklin/Licking Co. line, Jefferson Twp. (NW corner), *Lowden 4378*; 1 Jun 1993—Camp Mary Orton, W of Rt. 23 & N of Worthington, Sharon Twp., *Lowden 5066*.

(BLECHNACEAE, Deer Fern Family)

14. WOODWARDIA Sm. Chain Fern

Bog ferns; leaves scattered, deciduous; blades pinnatifid to pinnate-pinnatifid; venation areolate near the midveins, free near the margins; sori oblong to linear, in chainlike rows parallel to midveins of pinnae or of segments of pinnae; indusium attached by outer edge, opening at side toward midvein.

1. †*Woodwardia virginica* (L.) Sm.

Virginia Chain Fern

Fertile and sterile blades similar, pinnate-pinnatifid, rachis not winged. Syn.: *Anchistea virginica* (L.) C.Presl

REFERENCE: Riddell 1834:159.

NOTE: No specimens seen from Franklin Co.

MARSILEACEAE, Water Clover Family

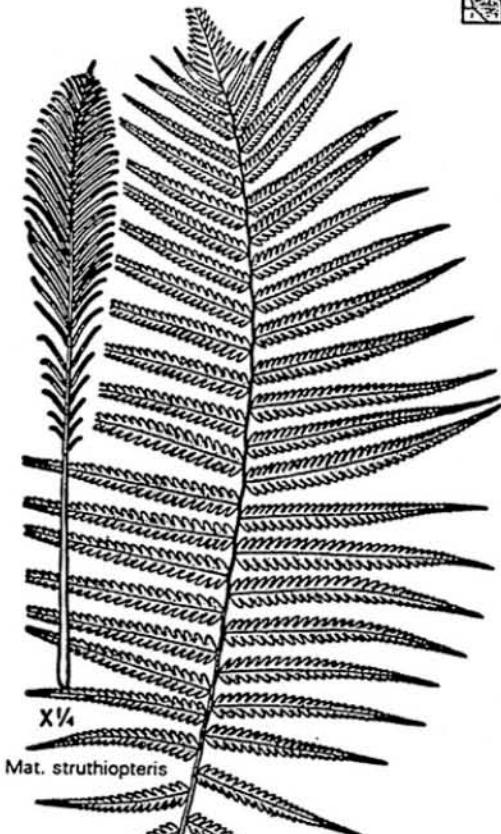
1. MARSILEA L. Water Clover

Aquatic, rooting in mud; slender petioles arising from rhizomes, blades 4-foliolate; megasporangia and microsporangia together in sporocarps borne on the petioles.

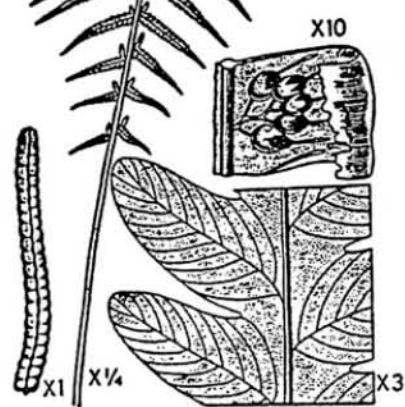
1. \*†*Marsilea quadrifolia* L.

European Water-clover

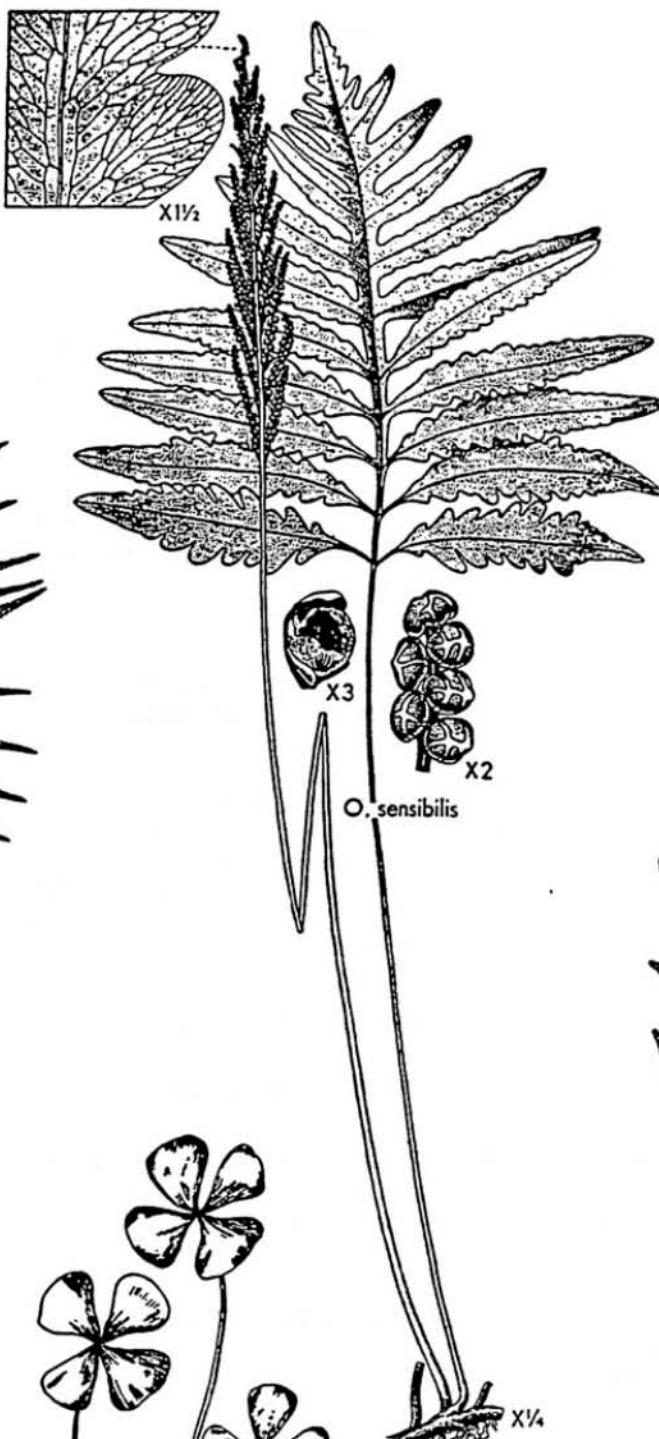
ONOCLEA  
WOODWARDIA  
MATTEUCCIA  
MARSILEA  
AZOLLA



*Mat. struthiopteris*



*Mar. quadrifolia*



*O. sensibilis*

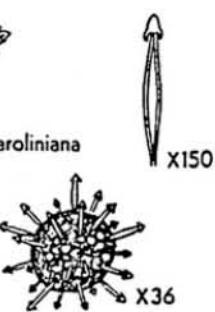


*X1/2*

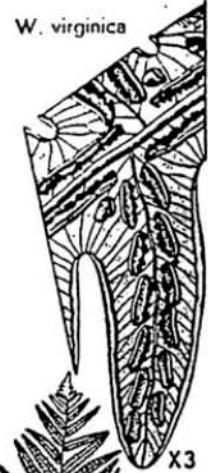
*A. caroliniana*



*X10*



*X36*



*W. virginica*

