

ADDITIONS TO THE ILLUSTRATED FLORA OF ILLINOIS. I.

ROBERT H. MOHLENBROCK

Southern Illinois University, Carbondale, Illinois 62901

ABSTRACT.—This is the first report on additions to the Illustrated Flora of Illinois series. Four taxa of ferns and fern allies are reported new for Illinois. These are *Equisetum pratense*, *Dryopteris* X *neo-cherryi*, *Woodwardia areolata*, and *Onoclea sensibilis* f. *obtusilobata*. One hundred seventeen additional county records are reported.

This is the first in a series of proposed periodic reports designed to bring up-to-date the Illustrated Flora of Illinois publications. Except where otherwise indicated, the reported records are all based on material examined by the author. Some of the records will represent recently collected material, others will represent herbarium material not previously examined by the author.

Previously unlisted taxa in the Illustrated Flora of Illinois will be included in these reports in the style of the Illustrated Flora. Collection data for new localities of the very rare species will be recorded. Nomenclatural changes, new synonymy, and other nomenclatural matters will be discussed in these periodic reports.

It is hoped that records not included in the Illustrated Flora or in its annual additions will be brought to the attention of the author.

Bibliographical data pertinent to the Illustrated Flora will be appended to each periodic report.

The only volume published to date

is concerned with ferns (Mohlenbrock, 1967). Ferns of Illinois was published in April, 1967. Following are the additions since that time to this work. Special gratitude is given to all curators of Illinois herbaria who have graciously permitted periodic study of their collections. Illustrations in this paper have been prepared by Miriam Wysong Meyer.

NEW TAXA

EQUISETUM PRATENSE Ehrh. *Hannov. Mag.* 22:138. 1784. Fig. 1.

Stems annual, of two kinds; fertile stems whitish or pinkish, appearing in early spring, to 30 cm tall, the sheaths pale, with slender white-margined brown teeth to 15 mm long; fertile stems often bearing spreading, green, whorled, 3-angled branches up to 15 cm long, with the teeth of the sheaths deltoid; sterile stems erect, stiff, whitish-green, appearing in late spring, to 60 cm tall, with 8-20 ridges each with 3 rows of minute spines, with the central cavity about one-sixth the diameter of the stem, the sheaths with teeth up to 8 mm long; cone to 2 cm long.

Common Name: Meadow Horsetail.

Habitat: North-facing wooded slope.

Range: Newfoundland to Alaska, south to British Columbia, north-

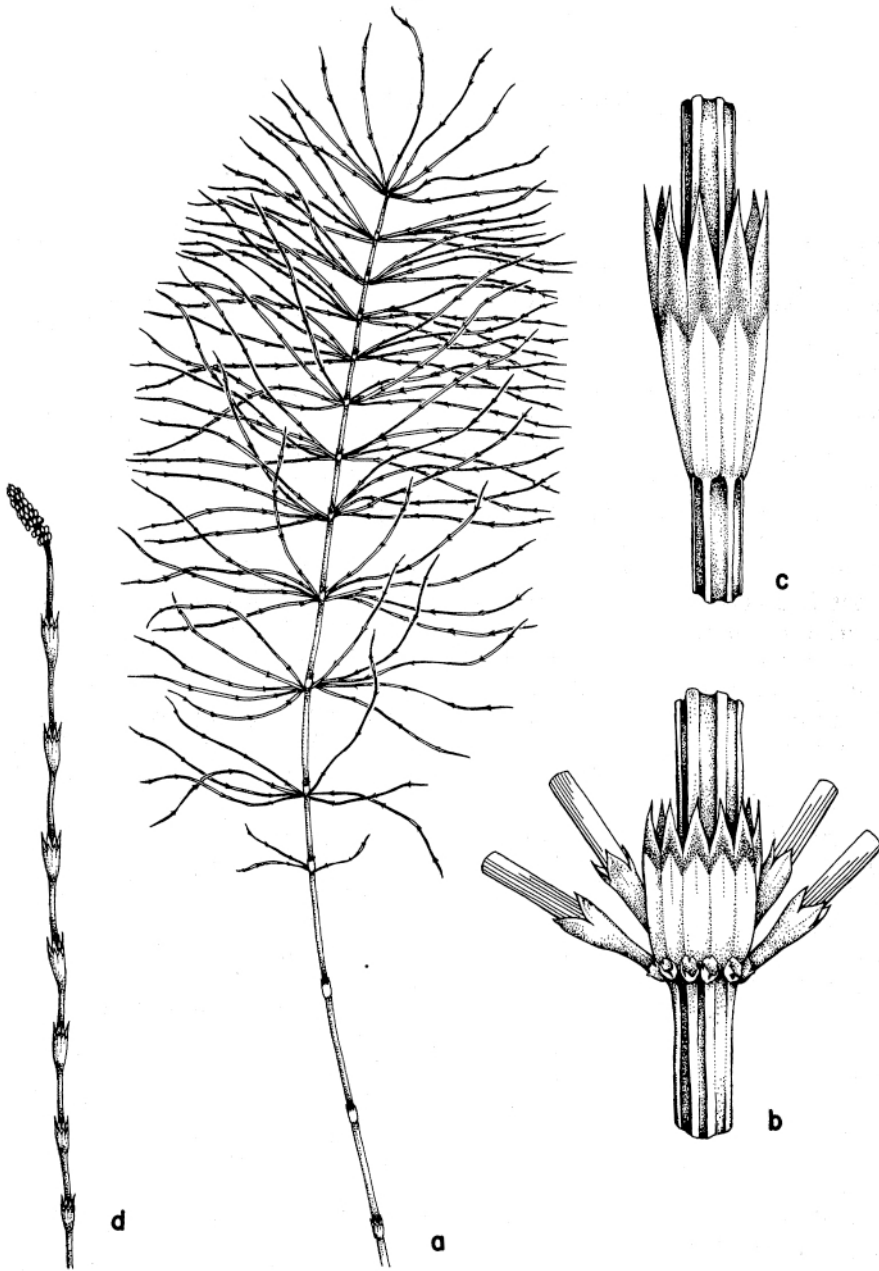


FIGURE 1. *Equisetum pratense*. a. Portion of vegetative branch; b. Portion of reproductive branch; c. Sheath; d. Node with lateral branches.

western Illinois, and New York; Europe; Asia.

Illinois Distribution: Known only from JoDaviess County (Hanover Township, section 20, Mississippi River bluff, T. Hartley 6340, 6509 (in herbarium of the University of Iowa)).

This species and *E. arvense* are the only species of *Equisetum* in Illinois in which the sterile and fertile stems are dissimilar. *Equisetum pratense* is distinguished from *E. arvense* by the white-margined teeth of the sheaths, the spinulose ridges of the stem, and the short, deltoid teeth of the sheaths of the branches.

This species was first found in Illinois by Thomas G. Hartley during research on the Driftless Areas of Illinois, Iowa, and Wisconsin. Associated with *E. pratense* on the same wooded slope were such unusual species in northwestern Illinois as *Lysimachia quadrifolia*, *Corallorhiza odontorhiza*, *Goodyera pubescens*, *Habenaria viridis* var. *bracteata*, *Dryopteris cristata*, *Dodecatheon radicans*, *Viola incognita*, and *Orchis spectabilis*.

ONOCLEA SENSIBILIS L. f. *OBTUSILOBATA* (Schkuhr) Gilb. List N. Am. Pterid. 18. 1901. Fig. 2.

Onoclea obtusilobata Schkuhr, Krypt. Gew. 1:95. 1809.

This form differs from f. *sensibilis* by the flattened, sterile condition of many of the usually fertile pinnules.

This form occurs in very low numbers along with many specimens of f. *sensibilis* at the single Illinois station.

Illinois Distribution: Pope Co.: spring marsh, two miles west of Bay City, W. Hopkins & R. Mohlenbrock (S.I.U.). s.n.

DRYOPTERIS X NEO-WHERRYI W.H.

Wagner in Wagner & Wagner, Castanea 31(2):136. 1966. Fig.

3.

Rhizome short-creeping; leaves more or less evergreen, pinnate-pinnatifid to nearly bipinnate, to 30 cm long, not dimorphic, with 25-35 pairs of pinnae, the pinnae eglandular, with the ultimate segments shallowly toothed; petiole to 15 cm long, scaly at least near base; sori round, borne on the back of the leaf segment midway between the midvein and the margin; indusium eglandular; 82 unpaired chromosomes (Wagner & Wagner, 1966).

Habitat: Rich, rocky woods.

Range: New England to Michigan, south to southwestern Virginia and southern Illinois.

Illinois Distribution: Pope Co.: along Lusk Creek, SW $\frac{1}{4}$, Section 21, T12S, R6E, October 13, 1967, J. Schwegman 1490.

This recently described taxon, named in honor of Professor Edgar F. Wherry of the University of Pennsylvania, is a hybrid between *D. marginalis* and *D. goldiana*, and is morphologically intermediate between the two. It occurs in Illinois in close proximity to the two parent species.

WOODWARDIA AREOLATA (L.)

Moore, Ind. Fil. 45. 1857. Fig.

4.

Acrostichum areolatum L. Sp. Pl. 1069. 1753.

Lorinseria areolata (L.) Presl, Epim. Bot. 72. 1851.

Perennial from slender rhizomes; leaves dimorphic; sterile leaves pinnatifid, to 25 cm long, over half as broad, firmly membranaceous, the lanceolate divisions minutely

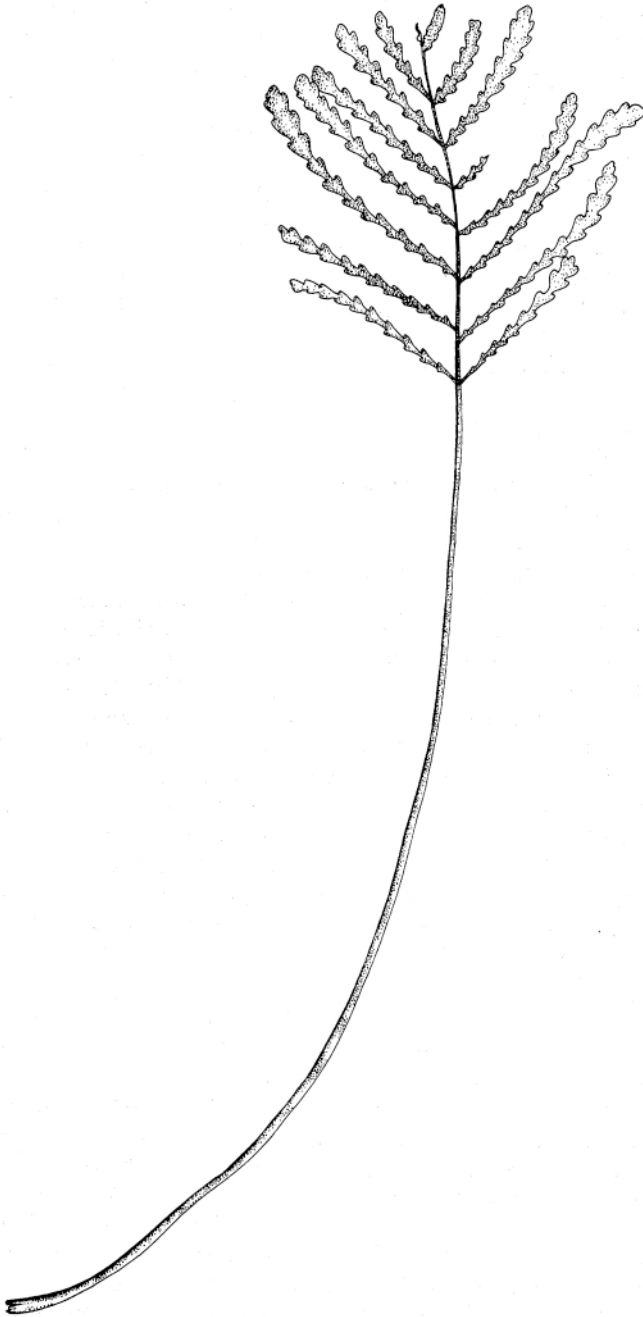


FIGURE 2. *Onoclea sensibilis* f. *obtusilobata*.

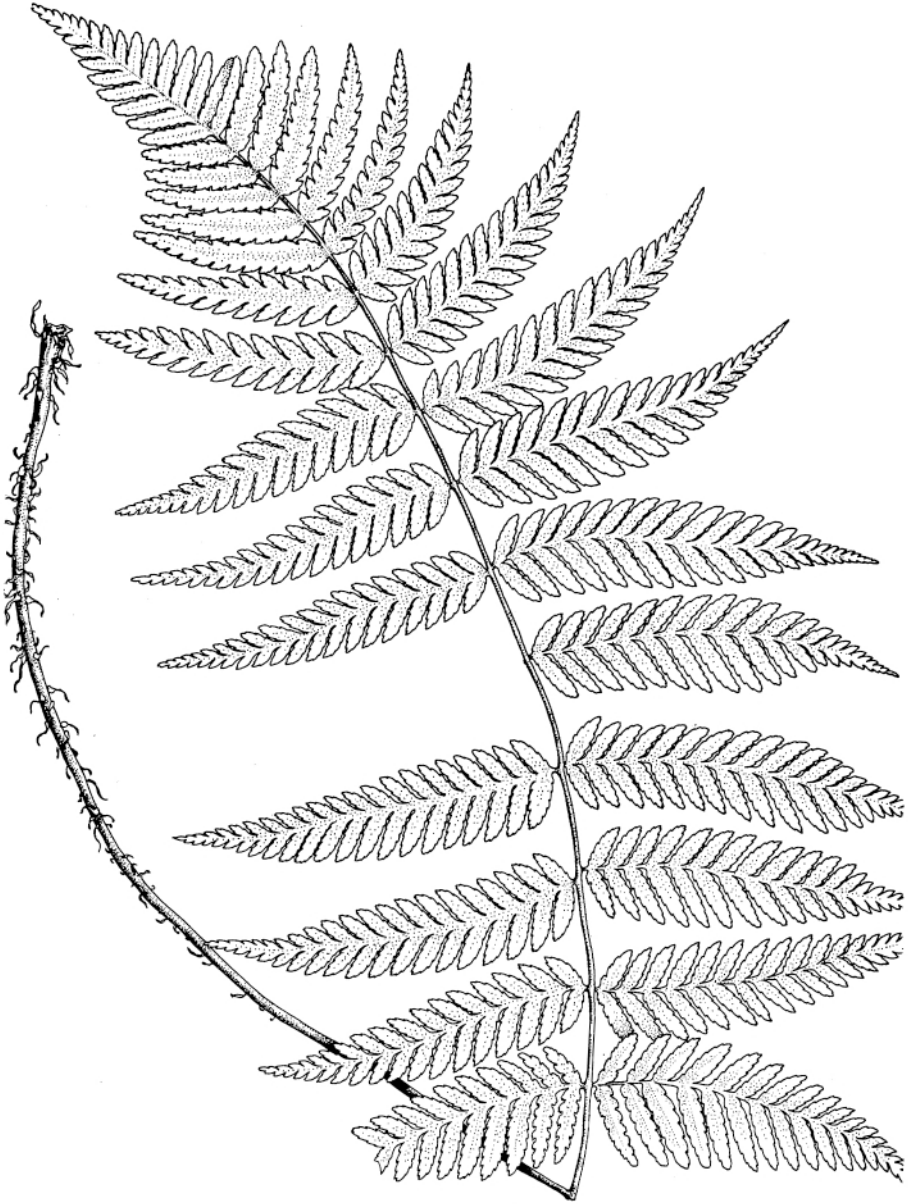


FIGURE 3. *Dryopteris X neo-wherryi*.



FIGURE 4. *Woodwardia areolata*.

toothed, the venation forming several rows of areoles; fertile leaves pinnatifid, to 35 cm long, less than half as broad, the linear divisions cleft nearly to the rachis, bearing areoles and sori in a single row on either side of the secondary midvein; sori elongated, to 10 mm long, the indusium attached to a veinlet on the side away from the midvein.

Common Name: Netted Chain Fern.

Habitat: Springy marsh in lowland woods; edge of sandstone cliff.

Range: Nova Scotia to New Hampshire, south and west to Missouri, Texas, and Florida; Michigan.

Illinois Distribution: Known from two stations in extreme southern Illinois (Johnson and Pope counties).

The first discovery of this fern in Illinois was made by Mr. John Schwegman from a springy marsh in a lowland woods near Massac Tower in Pope County (January 7, 1967, *J. Schwegman 1089*; June 17, 1967, *J. Schwegman 1250*). During August, 1967, it was found along a sandstone ledge at Benson Bluff in Johnson County by R. A. Evers and J. Snider.

Some persons are of the opinion that this species should be segregated into the genus *Lorinseria*. It would seem to me, however, that the best treatment is to consider *W. areolata* and *W. virginica* as members of the same genus, falling into Sections *Lorinseria* and *Anchistea*, respectively.

Woodwardia areolata differs from *W. virginica* by its strongly dimorphic leaves with several rows of areoles. In the vegetative condition,

W. areolata is very similar to the sensitive fern (*Onoclea sensibilis*), but differs in its minutely toothed sterile leaf divisions.

NEW RECORDS OF

PREVIOUSLY REPORTED TAXA

- Lycopodium lucidulum* Michx. var. *lucidulum*. Cumberland, Johnson.
Selaginella apoda (L.) Fern. Williamson.
Selaginella rupestris (L.) Spring. Union, Winnebago.
Isoetes melanopoda Gay & Dur. Cass, Mason, Pike.
Isoetes butleri Engelm. Gallatin.
Equisetum variegatum Schleich. in Usteri. Coles, DeWitt.
Equisetum X trachyodon A. Br. Mason: SE $\frac{1}{4}$, SE $\frac{1}{4}$, SE $\frac{1}{4}$, Section 8, Allen Grove Township, mound of sandy loam, September 12, 1966, *S. L. Wunderle s.n.*
Equisetum laevigatum A. Br. Mercer.
Equisetum X ferrissii Clute. Adams, Boone, Champaign, Iroquois, Knox, McHenry, McLean, Menard, Sangamon.
Botrychium multifidum (Gmel.) Rupr. ssp. *silafolium* (Presl) Clausen. Will.
Botrychium dissectum Spreng. var. *dissectum*. Cass, Coles, Mason.
Botrychium dissectum Spreng. var. *obliquum* (Muhl.) Clute. Cass, Edgar, Jersey, Mason, Morgan, Schuyler, Scott, Whiteside.
Ophioglossum vulgatum L. Coles.
Ophioglossum engelmannii Prantl. Johnson, Pope.
Osmunda cinnamomea L. Madison, Winnebago.
Osmunda claytoniana L. Coles, Cumberland, Madison, Pike.
Dennstaedtia punctilobula (Michx.) Moore. Johnson: north-facing sandstone cliffs, Ferne Cliff State Park, October 30, 1968, *J. Schwegman 2093*.
Pteridium aquilinum (L.) Kuhn var. *latiusculum* (Desv.) Underw. ex Heller. Cass, Logan, Mason, Menard, Tazewell.
Pellaea atropurpurea (L.) Link. Calhoun, JoDavies, Massac, Scott.
Pellaea glabella Mett. ex Kuhn var. *glabella*. Greene, St. Clair.
Cheilanthes feei Moore. Scott.
Cheilanthes lanosa D. C. Eaton in Torr. Cumberland, Massac, Ogle.
Polypodium polypodioides (L.) Watt var. *michauxianum* Weatherby. Calhoun, Massac.

- Onoclea sensibilis* L. McLean.
Matteuccia struthiopteris (L.) Todaro. Adams.
Thelypteris hexagonoptera (Michx.) Weatherby. Cumberland, Greene, Scott, Shelby, White.
Thelypteris noveboracensis (L.) Nieuwland. Pope.
Dryopteris carthusiana (Villars) H. P. Fuchs. Cumberland, DeKalb, Schuyler, Stephenson.
Dryopteris cristata (L.) Gray. Jo Daviess, Pope.
Dryopteris goldiana (Hook.) Gray. Pope.
Dryopteris intermedia (Muhl.) Gray. Fulton, Gallatin.
Dryopteris marginalis (L.) Gray. Cumberland, Madison, McLean, St. Clair.
Athyrium pycnocarpon (Spreng.) Tidestrom. Cass, Cumberland, Schuyler.
Athyrium thelypteroides (Michx.) Desv. Coles, Cumberland, Jersey, Madison, Pike.
Athyrium filix-femina (L.) Roth in Roem. var. *rubellum* Gilb. Brown, Bureau, Coles, Cumberland, Lee, Whiteside.
Athyrium filix-femina (L.) Roth in Roem. var. *asplenoides* (Michx.) Farw. Johnson, Pope, Union.
Asplenium rhizophyllum L. Coles.
Asplenium pinnatifidum Nutt. Cumberland, Fulton, Massac.
Asplenium trichomanes L. Cumberland, Massac.
Asplenium platyneuron (L.) Oakes ex D. C. Eaton. Jo Daviess, Scott.
Cystopteris bulbifera (L.) Bernh. Hardin.
Woodsia obtusa (Torr.) Spreng. Cumberland, Warren.
Marsilea quadrifolia L. Coles.
Azolla mexicana Presl. Franklin, Johnson, Monroe, Morgan, Scott.

ADDITIONAL SYNONYMY

The following additional synonyms should be inserted as indicated:

- Under *Dryopteris marginalis* (L.) Gray:
Nephrodium marginale f. *davenportii* Floyd, Rhodora 4:245. 1902.
Dryopteris marginalis f. *davenportii* (Floyd) A. R. Prince ex Weatherby, Am. Fern Journ. 26:62. 1936.

This and all other crested forms listed here are thought by me to be unworthy of nomenclatural splitting. Therefore, I am relegating each to synonymy under the proper species. The crested

form of *Dryopteris marginalis* has been found in Pope County (Mohlenbrock & Wunderle, 1967).

Under *Polystichum acrostichoides* (Michx.) Schott:

Polystichum acrostichoides f. *cristatum* Clute, Fern Bull. 20:81. 1912.

This is the crested form of Christmas Fern, known from Union and Cumberland counties (Mohlenbrock & Wunderle, 1967; Wunderle, 1968).

Under *Polystichum acrostichoides* (Michx.) Schott:

Polystichum acrostichoides f. *crispum* Clute, Our Ferns in Their Haunts 107. 1901.

This form has pinnae with wavy margins. It is reported by Wunderle (1968) from Cumberland County.

Under *Polystichum acrostichoides* (Michx.) Schott:

Polystichum acrostichoides f. *multifidum* Clute, Fern Bull. 15:71. 1907.

This form of Christmas Fern has deeply pinnatifid pinnae. It is reported by Wunderle (1968) from Cumberland County.

Under *Thelypteris hexagonoptera* (Michx.) Weatherby:

Dryopteris hexagonoptera f. *simonii* Reed, Am. Fern Journ. 35:105. 1945.

Thelypteris hexagonoptera f. *simonii* (Reed) Wunderle, Trans. Ill. Acad. Sci. 61:321. 1968.

This is a crested form in which the pinnatifid pinnae fork. It is reported by Wunderle (1968) from Cumberland County.

Under *Cystopteris fragilis* (L.) Bernh. var. *protrusa* Weatherby:

Cystopteris fragilis var. *cristata* Lowe, Out Nat. Ferns 2:432. 1869.

Cystopteris fragilis f. *cristata* (Lowe) Weatherby, Am. Fern Journ. 26:13. 1936.

The crested form is reported from Cumberland County by Wunderle (1968).

BIBLIOGRAPHIC ADDITIONS

- EVERS, ROBERT A., and J. A. SNIDER. 1967. The netted chain fern in Illinois. Transactions of the Illinois State Academy of Science 60:438.
 MOHLENBROCK, R. H. 1967. The Illustrated Flora of Illinois. Ferns. Southern Illinois University Press, Carbondale. 191 pp.
 ———, and S. L. WUNDERLE. 1967. Cresting in Illinois ferns. Transactions of the Illinois State Academy of Science 60:191-193.

- SCHWEGMAN, J. 1968. Notes on *Woodwardia areolata* and other rare Illinois ferns. American Fern Journal 58:89-90.
- SNIDER, J. A., and R. H. MOHLENBROOK. 1967. A western range extension of *Trichomanes boschianum* in Illinois. American Fern Journal 57:32-33.
- WAGNER, W. H., JR., and F. S. WAGNER. 1966. Pteridophytes of the Mountain Lake area, Giles Co., Virginia: bi-systematic studies, 1964-65. Castanea 31:121-140.
- WUNDERLE, S. L. 1967. Notes on the ferns and fern allies of Cumberland County. Transactions of the Illinois State Academy of Science 60:311.
- . 1968. Additional records of the ferns of Cumberland County. Transactions of the Illinois State Academy of Science 61:320-321.
- Manuscript received, May 22, 1969