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An Annotated Bibliography to the Literature on Pteridophytes in Iowa

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An Annotated Bibliography to the Literature on Pteridophytes in Iowa

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PECK, JAMES H. (Department of Botany and Plant Pathology, Iowa State University, Ames, Iowa 50011). An Annotated Bibliography to the Literature on Pteridophytes in Iowa. *Proc. Iowa Acad. Sci.* 82(3-4): 203-208, 1976.

A bibliography of Iowa pteridological literature is presented which covers over a century of study and includes 166 works by 84

authors. This extensive literature had not been previously compiled. Annotation of references is provided to facilitate access to them and to indicate their contents.

INDEX DESCRIPTORS: pteridophytes, ferns, horsetails, clubmosses, spikemosses, quillworts, Iowa flora, *Equisetum*, *Lycopodium*, *Selaginella*, *Isoetes*.

In the course of my thesis research on the reproductive ecology of naturally occurring fern gametophyte populations, I became aware that the Iowa pteridophyte literature had never been adequately compiled, and that such a collation was needed. During the last three years I have, therefore, compiled a comprehensive bibliography. The literature is scattered in various sources that primarily treat other subjects, but which may also include information about Iowa pteridophytes. This term includes ferns, horsetails (*Equisetum*), clubmosses (*Lycopodium*), spikemosses (*Selaginella*), and quillworts (*Isoetes*).

The first known publication on pteridophytes in Iowa was by C. C. Parry in 1852. Since that time, 83 authors have contributed an additional 165 works, including 11 state fern or pteridophyte floras.

The bibliography reflects a search of volumes, serials, and theses in the libraries at Grinnell College (Grinnell), Iowa State University (Ames), Putnam Museum (Davenport), The University of Iowa (Iowa City), and the University of Northern Iowa (Cedar Falls). The decision whether to include or omit a paper was based upon these criteria: the pteridophytes must be Iowa material; the material must have been identified by its scientific name; and certain observations must have been made, e.g., distribution, habitat, locality, development, or ecology. Some references not meeting all these criteria were included because they were of historical value. About 45 references mentioning Iowa pteridophytes failed to meet the criteria and were excluded.

During the search it became clear that much of the Iowa botanical literature had been published in six journals: *The American Fern Journal*, *The Iowa State College Journal of Science* (now issued as *The Iowa State Journal of Research*), *The Iowa Geological Survey Annual Report*, *The Proceedings of the Davenport Academy of Natural Science* (no longer issued; the institution was later named the Davenport Public Museum, then named the Davenport Museum, and is now named the Putnam Museum), *Proceedings of The Iowa Academy of Science*, and *The University of Iowa Studies in Natural History* (also issued as the *Bulletin from the Laboratories of Natural History of the University of Iowa* and *The State University of Iowa Studies in Natural History*). All issues of these serials were inspected for references on Iowa pteridophytes.

It also became clear during the search that student theses

and dissertations were important sources of information. They frequently contained valuable information that remains unpublished, such as specific collecting locality data, county-dot maps, or plant associates. Any thesis or dissertation with information on Iowa pteridophytes was, therefore, included in the bibliography, even if papers based upon it were later published.

Annotations were made because the titles of papers were often not self-explanatory and most of the references primarily concerned other subjects. Difficulties in ascertaining the publication year of several serial publications also warranted remarks. All references were cited by the year of publication, if given. When that date was not provided, the year for which the volume was issued was used instead. Discrepancies between the year of publication and the year for which the volume was issued were noted in the annotation in the following manner: "issued for the year . . ."

From inspection of the literature, I feel that the pteridophyte flora of Iowa has been reasonably well studied for over a century. The last and most comprehensive treatment of Iowa pteridophytes (Cooperrider, 1955c; Cooperrider, 1959a) is still useful, providing excellent keys and illustrations. However, based upon a new awareness of the total literature on Iowa pteridophytes, especially that published since 1955, and unpublished field work conducted at Iowa State University, there is now a need to revise Cooperrider's treatment to include additional species known in the state, and to reflect improved distributional data. Furthermore, recent monographic treatments of problem genera (e.g., *Cystopteris*, *Equisetum*, *Lycopodium*, and *Woodsia*) make it possible to better identify Iowa material.

I acknowledge gratefully the constructive discussions of Dean Roosa, Board Ecologist, State Preserves Advisory Board, on the need for improved access to the literature to the Iowa flora. I would like to thank Larry Eilers, Robert Hulbary and Warren H. Wagner, Jr. for suggesting references. Thanks also go to Nels Lersten and Donald Farrar for critically reading the manuscript and for making valuable comments.

It is hoped that the bibliography is comprehensive, but some references may have been overlooked, and readers are encouraged to bring them to my attention.

Aikmann, J. M., and R. F. Thorne. 1956. The Cayler Prairie: An ecological and taxonomic study of a northwestern Iowa prairie. *Proc. Iowa Acad. Sci.* 63:177-200. (Reports one horsetail; habitat; Dickinson County.)

Anderson, J. P. 1906. The flora of Lake Wabonsie. *Iowa Naturalist* 2:9-10. (Reports *Azolla*; Fremont County.)

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- Anderson, W. A. 1938. *Woodsia oregana* in Iowa. *Amer. Fern J.* 28:63-66. (Presents a nomenclatorial discussion; in Lyon County.)
- Arthur, J. C. 1883. A new walking fern. *Bot. Gaz.* 8:199-201. (Reports a form of *Asplenium rhizophyllum* that lacks auricles from Wild Cat Den State Park, Muscatine County.)
- Arthur, J. C. 1886. Contributions to the flora of Iowa—No. VI. *Proc. Davenport Acad. Nat. Sci.* 4:64-74. (Reports 26 ferns, 5 horsetails, 1 quillwort, 1 clubmoss, 1 spikemoss; volume issued for the year 1884.)
- Augustine, D. W. 1939. Plants of Mahaska County, Iowa. M.S. thesis, Iowa State University, Ames. (Reports seven ferns and two horsetails; localities.)
- Augustine, D. W. 1941a. Additions to the flora of Mahaska County, Iowa. *Proc. Iowa Acad. Sci.* 48:129-131. (Reports four additional ferns; localities.)
- Augustine, D. W. 1941b. Plants of Mahaska County, Iowa. *Proc. Iowa Acad. Sci.* 47:135-154. (Reports seven ferns and two horsetails; volume issued for the year 1940.)
- Bakke, A. L. 1909. Flora of Winnebago County, Iowa, with special reference to weeds. B.S. thesis, Iowa State University, Ames. (Reports two horsetails; habitats.)
- Barnes, W. D., F. Reppert, and A. A. Miller. 1900. The flora of Scott and Muscatine counties. *Proc. Davenport Acad. Nat. Sci.* 8:199-280. (Reports 25 ferns, 2 horsetails, 2 clubmosses, 1 spikemoss; localities with some habitats.)
- Bessey, C. E. 1871. Contributions to the flora of Iowa. In Fourth biennial report of the board of trustees of the Iowa State Agricultural College and Farm to the Governor of Iowa. Des Moines. (Reports seven ferns and three horsetails; volume available in College Collection, Archives, Iowa State University Library.)
- Blasdel, R. 1963. A monographic study of the fern genus *Cystopteris*. *Mem. Torrey Bot. Club* 21(4):1-102. (Reports three species and one hybrid from Iowa; lists specimens examined.)
- Brown, D. F. M. 1964. A monographic study of the fern genus *Woodsia*. *Nova Hedwigia Beihefte* 16:1-154. (Reports three species from Iowa; lists specimens examined.)
- Brown, M. E., and R. G. Brown. 1940. A preliminary list of the plants of the sand mounds of Muscatine and Louisa counties, Iowa. *Proc. Iowa Acad. Sci.* 46:167-178. (Reports two horsetails; volume issued for the year 1939.)
- Brown, R. G. 1949. Jones County flora, a preliminary survey. M.S. thesis, The University of Iowa, Iowa City. (Reports 12 ferns and 3 horsetails.)
- Carter, J. L. 1960. The flora of northwestern Iowa. Ph.D. thesis, The University of Iowa, Iowa City. (Reports six ferns, three horsetails, and one spikemoss; habitats and localities.)
- Carter, J. L. 1961. A preliminary report on the vascular flora of northwestern Iowa. *Proc. Iowa Acad. Sci.* 68:146-152. (Reports collecting 10 pteridophytes, but names only four; habitats and associates.)
- Carter, J. L. 1962. The vascular flora of Cherokee County. *Proc. Iowa Acad. Sci.* 69:60-70. (Reports two ferns and one horsetail; habitats.)
- Carter, J. L. 1963. Plant communities of the loess bluffs of northwestern Iowa. *Proc. Iowa Acad. Sci.* 70:45-60. (Reports one horsetail; habitat.)
- Conard, H. S. 1912. Ferns and liverworts of Grinnell and vicinity. *Proc. Iowa Acad. Sci.* 19:105-106. (Reports six ferns; habitats; Poweshiek County.)
- Conard, H. S. 1922. Manual of ferns and fern-allies in the vicinity of Grinnell. *Proc. Iowa Acad. Sci.* 29:317-327. (Reports 20 ferns, 4 horsetails, 1 clubmoss; habitats and localities; Poweshiek County.)
- Conard, H. S. 1929. Gametophytes of *Botrychium virginianum* in Iowa. *Proc. Iowa Acad. Sci.* 36:141-142. (Describes collection from Iowa County.)
- Conard, H. S. 1952. The vegetation of Iowa: An approach toward a phytosociological account. *State Univ. Iowa Stud. Nat. Hist.* 19(4):1-166. (Mentions pteridophytes throughout, but especially in chapter 6.)
- Cooperrider, T. S. 1955a. Distribution of pteridophytes in Iowa. *Proc. Iowa Acad. Sci.* 62:139-141. (Reports 39 ferns and 12 fern-allies; quantitative treatment of the distributional data.)
- Cooperrider, T. S. 1955b. The Ophioglossaceae of Iowa. *Amer. Fern J.* 45:156-159. (Reports two new state records; distributions of the five species in Iowa.)
- Cooperrider, T. S. 1955c. The pteridophytes of Iowa. M.S. thesis, The University of Iowa, Iowa City. (Reports 40 ferns, 6 horsetails, 4 clubmosses, 1 spikemoss, and 1 quillwort; keys and county-dot maps; habitats and localities.)
- Cooperrider, T. S. 1958a. The flora of Clinton, Jackson, and Jones counties, Iowa. Ph.D. thesis, The University of Iowa, Iowa City. (Reports 27 ferns, 5 horsetails, 1 spikemoss, and 1 quillwort; localities.)
- Cooperrider, T. S. 1958b. A preliminary report on the flora of Clinton, Jackson, and Jones counties, Iowa. *Proc. Iowa Acad. Sci.* 65:110-112. (Reports new station for *Osmunda regalis*, a rare fern in Iowa.)
- Cooperrider, T. S. 1959a. The ferns and other pteridophytes of Iowa. *State Univ. Iowa Stud. Nat. Hist.* 20(1):1-66. (Provides keys, illustrated critical characteristics, county-dot maps, habitats, and localities for 40 ferns, 6 horsetails, 5 clubmosses, 2 spikemosses, and 1 quillwort; the most recent treatment of all Iowa pteridophytes, still available through the University of Iowa Press, Iowa City.)
- Cooperrider, T. S. 1959b. New records for marsh and aquatic tracheophytes in Iowa. *Proc. Iowa Acad. Sci.* 66:163-168. (Reports two ferns, one horsetail, and one quillwort; localities and habitats.)
- Cooperrider, T. S. 1960a. The flora of three state parks in eastern Iowa. *Proc. Iowa Acad. Sci.* 67:145-161. (Reports 14 ferns and 3 horsetails; Wapsipinicon State Park, Jones County, and Maquoketa Caves State Park and Bellevue State Park, Jackson County.)
- Cooperrider, T. S. 1960b. The Lycopodiaceae and Selaginellaceae of Iowa. *Amer. Fern J.* 50:267-269. (Reports two state records; reviews species; habitats.)
- Cooperrider, T. S. 1962a. The flora of north-facing slopes compared to that of the surrounding area in eastern Iowa. *Amer. Mid. Nat.* 67:368-372. (Reports five ferns and one horsetail; localities and habitat.)
- Cooperrider, T. S. 1962b. The vascular plants of Clinton, Jackson, and Jones counties, Iowa. *State Univ. Iowa Stud. Nat. Hist.* 20(5):1-76. (Reports 27 ferns, 5 horsetails, 1 quillwort, and 1 spikemoss; county presence and habitats.)
- Cooperrider, T. S. 1968. Exclusion of the New York fern and hay-scented fern from the flora of Iowa. *Amer. Fern J.* 58:176-178. (Reports two errors in Iowa literature: attributes both to curatorial errors.)
- Cratty, R. I. 1904. Flora of Emmet County, Iowa. *Proc. Iowa Acad. Sci.* 11:201-251. (Reports five ferns and four horsetails; volume issued for the year 1903.)

- Cratty, R. I. 1926. Iowa plant notes, II. *Proc. Iowa Acad. Sci.* 33:125-128. (Reports one fern and one clubmoss.)
- Cratty, R. I. 1933. The Iowa flora: an annotated list of the ferns, fern-allies, and the native and introduced flowering plants of the state represented in the Iowa State College Herbarium. *Iowa State Coll. J. Sci.* 7:177-252. (Reports 36 ferns, 7 horsetails, 3 clubmosses, and 1 spikemoss; some habitats and distributional data.)
- Crum, G. H. 1972. Flora of a sand prairie in Black Hawk County, Iowa. *Proc. Iowa Acad. Sci.* 78:81-87. (Reports two ferns and three horsetails.)
- Davidson, R. A. 1957. The flora of southeastern Iowa. Ph.D. thesis, The University of Iowa, Iowa City. (Reports 27 ferns, 4 horsetails, 2 clubmosses, and 1 spikemoss; the thesis is in two volumes with pteridophytes in Volume 1; county-dot maps.)
- Davidson, R. A. 1959. The vascular flora of southeastern Iowa. *State Univ. Iowa Stud. Nat. Hist.* 20(2):1-102. (Reports 27 ferns, 4 horsetails, 2 clubmosses, and 1 spikemoss; Davidson (1957) needed as this work lacks dot-maps and adequate citation of herbarium sheets.)
- Davidson, R. A. 1960. Plant communities of southeastern Iowa. *Proc. Iowa Acad. Sci.* 67:162-173. (Reports nine communities with pteridophytes; associates.)
- DeLisle, D. G. 1968. The vascular plants of Berry Woods. *Proc. Iowa Acad. Sci.* 73:22-24. (Reports three ferns; Warren County; volume issued for the year 1966.)
- Diehl, G. 1937. Floras of lake shore, swamp, and hanging bogs and Little Miller's Bay, West Okoboji Lake. M.S. thesis, The University of Iowa. (Reports two horsetails.)
- Diehl, W. W. 1915. The flora of the Ledges region of Boone County, Iowa. *Proc. Iowa Acad. Sci.* 22:77-104. (Reports seven ferns and two horsetails.)
- Easterly, N. W. 1951a. The flora of Iowa County. M.S. thesis, The University of Iowa, Iowa City. (Reports 12 ferns, 4 horsetails, 2 clubmosses; habitats and localities.)
- Easterly, N. W. 1951b. The flora of Iowa County. *Proc. Iowa Acad. Sci.* 58:71-95. (Reports 12 ferns, 4 horsetails, and 2 clubmosses; habitats.)
- Eilers, L. J. 1964. The flora and phytogeography of the Iowan lobe of the Wisconsin glaciation. Ph.D. thesis, The University of Iowa, Iowa City. (Reports 29 ferns, 6 horsetails, 4 clubmosses, and 1 spikemoss; localities.)
- Eilers, L. J. 1967. The postglacial phytogeography of the Iowan lobe. *Proc. Iowa Acad. Sci.* 72:84-98. (Reports pteridophytes at four stations; phytogeographic considerations; volume issued for the year 1965.)
- Eilers, L. J. 1968. The remnant prairie flora in northeast Iowa. *Proc. Iowa Acad. Sci.* 73:32-43. (Reports two ferns, two horsetails, and one spikemoss; volume issued for the year 1966.)
- Eilers, L. J. 1971. The vascular flora of the Iowan area. *Univ. Iowa Stud. Nat. Hist.* 21(5):1-137. (Reports 29 ferns, 6 horsetails, 4 clubmosses, and 1 spikemoss; habitats and localities.)
- Eilers, L. J. 1974. The flora of Brush Creek Canyon State Preserve. *Proc. Iowa Acad. Sci.* 81:150-157. (Reports 10 ferns and 1 horsetail; habitats and associates; Fayette County.)
- Ellsworth, W. 1922. Parry's catalog of Iowa plants of 1848. *Proc. Iowa Acad. Sci.* 29:339-344. (Includes two ferns that were reported by Parry (1852) from Scott county; a republication of the Iowa material in the list.)
- Farrar, D. R., and R. D. Gooch. 1975. Fern reproduction at Woodman Hollow, central Iowa: Preliminary observations and a consideration of the feasibility of studying fern reproductive biology in nature. *Proc. Iowa Acad. Sci.* 82:119-122. (Reports 13 ferns; study of spore availability, gametophyte establishment, and sporophyte success; Webster County.)
- Fay, M. J. 1951a. The flora of Cedar County, Iowa. M.S. thesis, The University of Iowa, Iowa City. (Reports 19 ferns, 3 horsetails, and 1 clubmoss.)
- Fay, M. J. 1951b. The flora of Cedar County, Iowa. *Proc. Iowa Acad. Sci.* 58:107-131. (Reports 19 ferns, 3 horsetails, and 1 clubmoss; habitats.)
- Fay, M. J. 1953. The flora of southwestern Iowa. Ph.D. thesis, The University of Iowa, Iowa City. (Reports 11 ferns and 3 horsetails; habitats and localities.)
- Fay, M. J., and R. F. Thorne. 1953. Additions to the flora of Cedar County, Iowa. *Proc. Iowa Acad. Sci.* 60:122-130. (Reports 17 ferns and 1 horsetail; habitats and localities.)
- Fink, B. 1904. A lichen society of a sandstone riprap. *Bot. Gaz.* 38:265-284. (Reports two ferns; habitats and associates; Ledges State Park, Boone County.)
- Fitzpatrick, T. J. 1896. *Ferns of Iowa and their allies*. Patriot Book Print, Lamoni, Iowa. (Reports 31 ferns, 5 horsetails, 3 clubmosses, and 1 spikemoss; habitats and localities; volume available at Iowa State University Library.)
- Fitzpatrick, T. J. 1898. Notes on the flora of northeastern Iowa. *Proc. Iowa Acad. Sci.* 5:107-133. (Reports 12 ferns and 3 horsetails; habitats and counties; volume issued for 1897.)
- Fitzpatrick, T. J. 1918a. The fern flora of northeastern Iowa. *Proc. Iowa Acad. Sci.* 25:417-421. (Reports 26 ferns, 4 horsetails, 1 clubmoss, 1 spikemoss, and 1 quillwort; habitats and localities.)
- Fitzpatrick, T. J. 1918b. The fern flora of northeastern Iowa. *Amer. Fern. J.* 8:97-103. (Reports 26 ferns, 4 horsetails, 1 clubmoss, 1 spikemoss, and 1 quillwort; habitats and localities.)
- Fitzpatrick, T. J., and M. F. L. Fitzpatrick. 1898. Flora of southern Iowa. *Proc. Iowa Acad. Sci.* 5:134-173. (Reports 15 ferns and 3 horsetails; counties and habitats; volume issued for the year 1897.)
- Fitzpatrick, T. J., and M. F. L. Fitzpatrick. 1899. The flora of southern Iowa, Part II. *Proc. Iowa Acad. Sci.* 6:173-202. (Reports four ferns and two horsetails; county of occurrence; volume issued for the year 1898.)
- Fitzpatrick, T. J., and M. F. L. Fitzpatrick. 1903. The fern flora of Iowa. *Fern Bull.* 11:65-71. (Reports 35 ferns, 7 horsetails, 3 clubmosses, 1 spikemoss, and 1 quillwort; habitats and localities.)
- Fults, J. L. 1932. A botanical survey of Lee County, Iowa. M.S. thesis, Iowa State University, Ames. (Reports 10 ferns and 3 horsetails; localities and soil types.)
- Fults, J. L. 1934. A botanical survey of Lee County, Iowa. *Iowa State Coll. J. Sci.* 8:251-293. (Reports 10 ferns and 3 horsetails; localities and soil types.)
- Gilly, C. L., and M. E. McDonald. 1936. Rare and unusual plants from southeastern Iowa. *Proc. Iowa Acad. Sci.* 43:143-149. (Reports two ferns; habitats and localities.)
- Gilly, C. L., and M. E. McDonald. 1947. A preliminary report on the flora of southeastern Iowa—Part I. *Proc. Iowa Acad. Sci.* 54:107-126. (Reports 19 ferns and 4 horsetails.)
- Gilly, C. L., and M. E. McDonald. 1948. A preliminary report on the flora of southeastern Iowa—Part II. *Proc. Iowa Acad.*

- Sci. 55:115-133. (Reports *Marsilea* from Van Buren County as a new county record.)
- Grant, M. L. 1950. Dickinson County flora. *Proc. Iowa Acad. Sci.* 57:91-129. (Reports five ferns and four horsetails.)
- Grant, M. L. 1953. Additions to and notes on the flora of Dickinson County, Iowa. *Proc. Iowa Acad. Sci.* 60:131-140. (Reports one fern.)
- Grant, M. L., and R. F. Thorne. 1955. Discovery and description of a *Sphagnum* bog in Iowa, with notes on the distribution of bog plants in the state. *Proc. Iowa Acad. Sci.* 62:197-210. (Reports two ferns; habitats; in Dead Man's Lake, Pilot Knob State Park, Hancock County.)
- Graves, E. W. 1927. *Botrychium dissectum* in Iowa. *Amer. Fern J.* 17:15-18. (Reports new state record from Van Buren County.)
- Graves, E. W. 1931. Botrychiaceae of the central states. *Amer. Fern J.* 21:125-132. (Discusses material in Iowa herbaria.)
- Greene, W. (Ed.) 1907. Plants of Iowa: A preliminary list of the native and introduced plants in the state, not under cultivation. *Bull. State Hort. Soc.* Des Moines. 264 pp. (Reports 32 ferns, 7 horsetails, 3 clubmosses, and 1 spike-moss.)
- Guldner, L. F. 1960. Vascular plants of Scott and Muscatine counties, with some reference to adjoining areas of surrounding counties in Iowa and to Rock Island and White-side counties in Illinois. *Davenport Public Mus. Bot. Pub. No. 1.* (Reports 31 ferns, 6 horsetails, and 4 clubmosses; habitats and localities.)
- Hartley, T. G. 1957. A comparison of the floras of south-western Wisconsin and northeastern Iowa. *Proc. Iowa Acad. Sci.* 64:199-204. (Reports six ferns, two horsetails, and two clubmosses; habitats.)
- Hartley, T. G. 1962. The flora of the "driftless area." Ph.D. thesis, The University of Iowa, Iowa City. (Reports 34 ferns, 8 horsetails (including *E. X litorale*), 3 clubmosses, and 1 spikemoss; county-dot maps; habitats and localities.)
- Hartley, T. G. 1966. The flora of the "driftless area." *Univ. Iowa Stud. Nat. Hist.* 21(1):1-174. (Reports pteridophytes, but Hartley (1962) is required to distinguish between Iowa and non-Iowa materials; county-dot maps not included.)
- Hauke, R. L. 1963. A taxonomic monograph of the genus *Equisetum*, subgenus *Hippochaete*. *Nova Hedwigia Bei-hefte* 8:1-163. (Includes useful characters and discussion to distinguish *Equisetum X ferressii* from its parent species, *E. hyemale* and *E. laevigatum*; in Iowa the hybrid appears to be more common than its parents, but has not been recognized as a distinct taxa by past Iowa workers; citation of the parents and hybrid from Iowa collections may be found in Hauke ([1960]). A taxonomic monograph of the genus *Equisetum*, subg. *Hippochaete*. Ph.D. thesis, University of Michigan. [Dissertation Abstracts 20:4498].)
- Hayden, A. 1943. A botanical survey in the Iowa lake region of Clay and Palo Alto counties. *Iowa State Coll. J. Sci.* 17: 277-416. (Reports five ferns and five horsetails; habitats and localities; see discussion on p. 334.)
- Hitchcock, A. S. 1892. A catalogue of Anthophyta and Pteridophyta of Ames, Iowa. *Trans. Acad. Sci. St. Louis* 5:477-532. (Reports seven ferns and one horsetail; includes Boone and Story counties, see pp. 479-480.)
- Holte, K. E. 1966. A floristic and ecological analysis of the Excelsior Fen complex in northwest Iowa. Ph.D. thesis, The University of Iowa, Iowa City. (Reports two horsetails; Dickinson County.)
- Iowa State Board of Conservation. 1919. *Iowa Parks: Conservation of Iowa historic, scenic, and scientific areas*. Des Moines. (Includes numerous passages on pteridophytes in areas now state parks and other areas of protected status.)
- Iowa State Board of Conservation. 1923-1927. *Iowa State Parks*. 4 vols. Des Moines. (Includes numerous passages on pteridophytes in state-owned areas.)
- Iowa State Board of Conservation. 1925-1928. *Park Booklet Series, Pub. No. 1-4, No. 1 revised*. Des Moines. (Includes numerous passages on pteridophytes in state-owned lands.)
- Kelley, A. P. 1931. Studies in Iowa plant-life, I: The genera *Equisetum*, *Quercus*, *Amelanchier*, and *Fraxinus* in the Okoboji flora. *Bull. Lab. Nat. Hist. State Univ. Iowa*. 13 (5):11-19. (Reports three horsetails; Dickinson County.)
- Lantz, C. W. 1970. The Clay Prairie in Butler County, Iowa. *Proc. Iowa Acad. Sci.* 76:109-112. (Reports two horsetails; volume issued for the year 1969.)
- Lazell, F. J. 1927. The flora and blooming time of plants of Linn County, Iowa. M.S. thesis, Iowa State University, Ames. (Reports 16 ferns, 2 horsetails, 2 clubmosses; habitats and some localities.)
- Lyness, A. S. 1932. A study of the distribution of Iowa ferns and fern allies. M.S. thesis, The University of Iowa, Iowa City. (Reports 40 ferns, 9 horsetails, 5 clubmosses, 1 spike-moss, and 1 quillwort; localities and some habitats; based upon specimens in Iowa herbaria.)
- Lyness, A. S. 1933. Notes on the fern flora of Iowa. *Amer. Fern J.* 23:39-49. (Discusses rare and problem taxa; species list with county occurrence.)
- Lyness, A. S. 1937. Keys to the ferns of Iowa, I. *Amer. Fern J.* 27:132-135. (Keys to all pteridophytes in Iowa.)
- Lyness, A. S. 1938. Keys to the ferns of Iowa, II. *Amer. Fern J.* 28:16-25. (Keys include all pteridophytes in Iowa.)
- Macbride, T. H. 1888. Botanical notes. *Bull. Lab. Nat. Hist. State Univ. Iowa* 1:52-55. (Reports one clubmoss from Johnson County.)
- Martin, G. W. 1947. Fertile green shoots of *Equisetum arvense*. *Proc. Iowa Acad. Sci.* 53:167-169. (Reported from Johnson County; intermediate forms of a typically dimorphic species.)
- Melhus, I. E. 1936. Native ferns of Iowa. *Iowa State Coll. Ext. Circ. No. 225*. Ames. (Reports 33 ferns, 9 horsetails, 3 clubmosses, 1 spikemoss, and 1 quillwort; keys, county-dot maps, habitats, and localities.)
- Morrissey, T. 1956. The flora of the Pine Hill prairie relict. *Proc. Iowa Acad. Sci.* 63:201-213. (Reports one horsetail; habitat; Scott County.)
- Morrill, J. B. 1953. Prairie flora on the Missouri River bluffs of western Iowa. M.S. thesis, Iowa State University, Ames. (Reports one horsetail.)
- Niemann, D. A. 1971. Classification and ordination of the vegetation of Woodman Hollow, Iowa. M.S. thesis, Iowa State University, Ames. (Reports 12 ferns and 2 horsetails; quantitative study; see distribution maps pp. 37-81; habitats; Webster County.)
- Niemann, D. A. 1975. Distribution and habitats of the orchids of Iowa. Ph.D. thesis, Iowa State University, Ames. (Notes ferns as indicators for some orchids; habitats; associates; localities.)
- Niemann, D. A., and R. Q. Landers, Jr. 1974. Forest communities in Woodman Hollow State Preserve, Iowa. *Proc. Iowa Acad. Sci.* 81:176-184. (Reports 13 ferns and 2 horsetails; habitats; Webster County.)

- Oleson, O. M., and M. P. Somes. 1906. Flora of Webster County, Iowa. *Proc. Iowa Acad. Sci.* 13:25-58. (Reports 19 ferns and 7 horsetails.)
- Pammel, L. H. 1899. Some ecological notes on the Muscatine flora. *Plant World* 2:182-186. (Reports five ferns and two clubmosses from Wild Cat Den State Park, Muscatine County.)
- Pammel, L. H. 1900. The forest flora of Hardin County, Iowa. *Iowa Geol. Sur. Annu. Rpt.* 10:306-313. (Reports five ferns; volume issued for the year 1899.)
- Pammel, L. H. 1902a. Our vanishing wild flowers. *Plant World* 5:173-175. (Reports seven ferns and one clubmoss in Hardin County.)
- Pammel, L. H. 1902b. Preliminary notes on the flora of western Iowa, especially from the physiological ecological standpoint. *Proc. Iowa Acad. Sci.* 9:152-180. (Reports one fern; habitat; volume issued for the year 1901.)
- Pammel, L. H. 1905. A comparative study of the vegetation of swamp, clay, and sandstone areas in western Wisconsin, southeastern Minnesota, and northeastern, central, and southwestern Iowa. *Proc. Davenport Acad. Nat. Sci.* 10:32-126. (Reports pteridophytes in three areas of Iowa; localities and habitats.)
- Pammel, L. H. 1923. The flora of Pine Hollow, Dubuque County, Iowa. *Proc. Iowa Acad. Sci.* 30:263-277. (Reports 11 ferns and 1 horsetail.)
- Pammel, L. H., and C. King. 1902. The vascular cryptogams of Iowa and the adjoining parts of southeastern Minnesota and western Wisconsin. *Proc. Iowa Acad. Sci.* 9:134-151. (Reports 34 ferns, 6 horsetails, 2 clubmosses, and 1 spikemoss in the herbarium at Ames; habitats; localities; county of occurrence; county-dot maps.)
- Parry, C. C. 1852. Systematic catalogue of plants of Wisconsin and Minnesota made in connection with the geological survey of the Northwest during the season of 1848, Art. V, pp. 606-622. In Owen, D. D. *Report of a geological survey of Wisconsin, Iowa and Minnesota*. Lippincott, Grambo & Co., Philadelphia. (Reports 2 ferns from Scott County: I have seen a specimen in the Barnes Herbarium of the Putnam Museum collected by Parry in 1847 from Davenport, Iowa, which is *Pellaea glabella* Mett. ex Kuhn; this species may still be collected in Devil's Glenn Park, in what is now Bettendorf, Iowa.)
- Pierson, E. F. 1936. The vascular flora of the area to be submerged by Lake Macbride. M.S. thesis, The University of Iowa. (Reports two pteridophytes in area now inundated; Johnson County.)
- Pfeiffer, N. E. 1922. Monograph of the Isoetaceae. *Ann. Mo. Bot. Gard.* 9:79-232. (Includes the only quillwort collection from Iowa, Clinton County, 1863, see p. 150.)
- Reppert, F. 1893. *Pellaea atropurpurea* Link. on the sandstone ledges of Muscatine. *Proc. Iowa Acad. Sci.* 1(3):93. (Reports new state record; habitats and two localities; Muscatine County; volume issued for 1892.)
- Rickey, M. D. 1964. A floristic survey of Delaware County, Iowa. M.S. thesis, The University of Iowa, Iowa City. (Reports 25 ferns, 6 horsetails, 3 clubmosses, and 1 spikemoss.)
- Russell, N. H. 1956. A checklist of the vascular flora of Poweshiek County, Iowa. *Proc. Iowa Acad. Sci.* 63:161-176. (Reports six ferns and three horsetails.)
- Sanders, D. R. 1967. Structure of slope forests along the Des Moines River in central Iowa prior to impoundment. M.S. thesis, Iowa State University, Ames. (Includes a quantitative assessment of the occurrence of two ferns.)
- Sanders, D. R. 1968. Vegetation of slope forests along the Des Moines River. *Proc. Iowa Acad. Sci.* 75:78-84. (Includes discussion of *Cystopteris fragilis* with a quantitative approach to occurrence.)
- Sanders, D. R. 1969. Structure and pattern of the herbaceous understory of deciduous forests in central Iowa. Ph.D. thesis, Iowa State University, Ames. (Discusses the occurrence of *Cystopteris fragilis* from climatic and edaphic factors that affect distribution.)
- Schadt, C. 1910. Flora of Iowa County. In S. W. Stookey (ed.), *Geology of Iowa County*. *Iowa Geol. Sur. Annu. Rpt.* 20:186-198. (Reports one fern; volume issued for the year 1909.)
- Shimek, B. 1896. Notes on the flora of Iowa. *Bull. Lab. Nat. Hist. State Univ. Iowa.* 3:195-215. (Reports 17 ferns, 4 horsetails, and 1 spikemoss.)
- Shimek, B. 1897. The flora of the Sioux quartzite in Iowa. *Proc. Iowa Acad. Sci.* 4:72-77. (Reports 1 fern and 1 spikemoss; Lyon County; volume issued for the year 1896.)
- Shimek, B. 1898. The flora of the Sioux quartzite in Iowa, II. *Proc. Iowa Acad. Sci.* 5:28-31. (Reports one horsetail; Lyon County; volume issued for the year 1897.)
- Shimek, B. 1900. The flora of Lyon County. *Iowa Geol. Sur. Annu. Rpt.* 10:157-184. (Reports three ferns and one spikemoss; volume issued for the year 1899.)
- Shimek, B. 1901. The Iowa Pteridophyta in the herbarium of the State University of Iowa. *Bull. Lab. Nat. Hist. State Univ. Iowa.* 5:145-170, 213-215. (Reports 32 ferns, 5 horsetails, 3 clubmosses, and 1 spikemoss.)
- Shimek, B. 1904. The flora of the St. Peter sandstone in Winneshiek County, Iowa. *Bull. Lab. Nat. Hist. State Univ. Iowa* 5(4):225-229. (Reports one fern and one spikemoss.)
- Shimek, B. 1906. The plants of Winneshiek County. *Iowa Geol. Sur. Annu. Rpt.* 16:147-211. (Reports 18 ferns, 4 horsetails, 1 clubmoss, and 1 spikemoss; habitats and localities; volume issued for the year 1905.)
- Shimek, B. 1910. Geology of Harrison and Monona counties. *Iowa Geol. Sur. Annu. Rpt.* 20:271-486. (Reports four horsetails in dry prairies; two ferns and two horsetails in the upland woods; volume issued for the year 1909.)
- Shimek, B. 1911. The prairies. *Bull. Lab. Nat. Hist. State Univ. Iowa* 6(2):169-240. (Reports three horsetails.)
- Shimek, B. 1913. An artificial prairie. *Bull. Lab. Nat. Hist. State Univ. Iowa* 6(4):35-42. (Reports six ferns from Amana woods, Iowa County.)
- Shimek, B. 1915a. The plant geography of the Lake Okoboji region. *Bull. Lab. Nat. Hist. State Univ. Iowa* 7(2):1-90. (Reports five horsetails from the prairies; one horsetail from swamp and lake; and five ferns and one horsetail from the forest; Dickinson County.)
- Shimek, B. 1915b. The sand flora of Iowa. *Bull. Lab. Nat. Hist. State Univ. Iowa* 7(4):6-24. (Reports five horsetails from six stations; localities.)
- Shimek, B. 1921. The ferns of McGregor, Iowa. *Iowa Conservation* 5:57. (The one-page article is actually an educational advertisement for a local company; reports 31 ferns, 5 horsetails, 2 clubmosses and 1 spikemoss.)
- Shimek, B. 1925. Persistence of the prairie. *Univ. Iowa Stud. Nat. Hist.* 11(5):3-24. (Reports two horsetails from three stations; localities.)

- Shimek, B. 1931. The botanical manuals and the Iowa flora. *Univ. Iowa Stud. Nat. Hist.* 14(2):17-37. (Reports inaccuracies in reports of distribution and habitats of Iowa material.)
- Shimek, B. 1948. The plant geography of Iowa. *Univ. Iowa Stud. Nat. Hist.* 18(4):1-178. (Includes habitats, localities, and phytogeographic discussions of pteridophytes on pp. 86-88, 127-135, and 139-140.)
- Smith, P. E. 1962. An ecological analysis of a northern Iowa *Sphagnum* bog and adjoining pond. Ph.D. thesis, The University of Iowa, Iowa City. (Reports two ferns from Hancock County.)
- Somes, M. P. 1913. Notes on the flora of Johnson County, Iowa. *Proc. Iowa Acad. Sci.* 20:27-101. (Reports 20 ferns and 4 horsetails.)
- Sorensen, P. D. 1962. The Williams prairie: A prairie relict in Johnson County. *Proc. Iowa Acad. Sci.* 69:45-53. (Reports two ferns and one horsetail.)
- Taylor, W. C., R. H. Mohlenbrock, and J. A. Murphy. 1975. The spores and taxonomy of *Isoetes butleri* and *I. melanopoda*. *Amer. Fern J.* 65:33-38. (Includes a verification of the only collection of *Isoetes* in Iowa, Clinton County, 1863, by Vasey; the material has never been recollected; considered extirpated.)
- Thorne, R. F. 1954. Notes on rare Iowa plants. *Proc. Iowa Acad. Sci.* 60:260-274. (Reports two habitats with pteridophytes, and also discusses 11 ferns; volume issued for the year 1953.)
- Thorne, R. F. 1955. Flora of Johnson County, Iowa. *Proc. Iowa Acad. Sci.* 62:155-196. (Reports 23 ferns, 3 clubmosses, and 3 horsetails; habitats.)
- Thorne, R. F. 1956. Notes on rare Iowa plants—II. *Proc. Iowa Acad. Sci.* 63:214-227. (Reports pteridophytes at many special habitats that are uncommon in Iowa.)
- Thorne, R. F. 1964. Relict nature of the flora of White Pine Hollow Forest Reserve, Dubuque County, Iowa. *State Univ. Iowa Stud. Nat. Hist.* 20(6):1-33. (Reports 22 ferns, 3 horsetails, and 2 clubmosses; habitats.)
- Tolstead, W. L. 1936. A flora of Winneshiek and Allamakee counties. M.S. thesis, Iowa State University, Ames. (Reports 25 ferns, 3 horsetails, 2 clubmosses, and 1 spikemoss; habitats with some localities.)
- Tolstead, W. L. 1938. A flora of Winneshiek and Allamakee counties and Clayton County in the vicinity of McGregor. *Iowa State Coll. J. Sci.* 12:321-384. (Reports 26 ferns, 3 horsetails, 2 clubmosses, 1 spikemoss; habitats with some localities.)
- Tuttle, F. M. 1920. Flora of Mitchell County, Iowa. *Proc. Iowa Acad. Sci.* 26:269-299. (Reports 13 ferns and 2 horsetails; volume issued for the year 1919.)
- Twitchell, I. 1880. Filices Iowensis. *Aurora* 8:132-137. (Reports 16 ferns; illustrates sori and sporangia; in an issue of a literary magazine of Iowa State Agricultural College, available in the College Collection, Archives, Iowa State University Library.)
- Van Bruggen, T. 1958. The flora of southcentral Iowa. Ph.D. thesis, The University of Iowa, Iowa City. (Reports 16 ferns and 4 horsetails; habitats and localities.)
- Van Bruggen, T. 1959. A report on the flora of southcentral Iowa. *Proc. Iowa Acad. Sci.* 66:169-177. (Reports 20 pteridophytes; specifically names five ferns and one horsetail with localities and associates.)
- Verink, E. D. 1914. A preliminary report on the flora of Linn County. *Proc. Iowa Acad. Sci.* 21:77-99. (Reports five horsetails and two clubmosses.)
- Wagenknecht, B. L. 1954a. The flora of Washington County, Iowa. M.S. thesis, The University of Iowa, Iowa City. (Reports 11 ferns, 3 horsetails, and 1 clubmoss; habitats and localities.)
- Wagenknecht, B. L. 1954b. The flora of Washington County, Iowa. *Proc. Iowa Acad. Sci.* 61:184-204. (Reports 11 ferns, 3 horsetails, and 1 clubmoss.)
- Weaver, C. B. 1896. A comparative study of the spores of North American ferns. *Proc. Iowa Acad. Sci.* 3:159-161. (One of the earliest of such studies on North American ferns; includes four Iowa fern collections; volume issued for the year 1895.)
- Wherry, E. T. 1938. Midland fern notes. *Amer. Fern J.* 28:28-30. (Reports three fern stations in Iowa; offers an opinion on the species of *Woodsia* in Lyon County.)
- Wilce, J. H. 1965. The section *Complanata* of the genus *Lycopodium*. *Nova Hedwigia Beihefte* 19:1-233. (Reports one species from Iowa; lists specimens examined.)
- Witter, F. M. 1890a. Ferns of Muscatine County, Iowa. *Proc. Iowa Acad. Sci.* 1(1):96-97. (Reports 20 ferns; volume issued for the year 1889.)
- Witter, F. M. 1890b. Notes on some shells, ferns, etc. collected in Decatur County, Iowa, and Lyon County, Kansas, in the summer of 1886. *Proc. Iowa Acad. Sci.* 1(1):17-18. (Reports six ferns; volume issued for the year 1887.)
- Wolden, B. O. 1932. Plants of Emmet County. *Proc. Iowa Acad. Sci.* 39:89-132. (Reports eight ferns and five horsetails.)
- Wolden, B. O. 1956. Plants of Emmet County. *Proc. Iowa Acad. Sci.* 63:118-156. (Reports eight ferns and five horsetails; habitats.)
- Wolden, B. O. 1971. Flora of Island Grove and adjacent Iowa prairies before 1908. *Proc. Iowa Acad. Sci.* 78:2-8. (Reports two ferns and one horsetail; Emmet County.)
- Wood, M. E. 1882. Ferns of Iowa. *Bot. Gaz.* 7:73. (Reports 17 ferns from a locality 50 miles west of Dubuque, probably at what is now White Pine Hollow State Forest Preserve, Dubuque County.)
- Wylie, R. B. 1948a. The dominant role of the epidermis in the leaves of *Adiantum*. *Amer. J. Bot.* 35:465-473. (Reports that epidermis plays a major role in translocation and photosynthesis in leaves; material gathered in Iowa.)
- Wylie, R. B. 1948b. The leaf organization of *Adiantum capillus-veneris* L. in comparison with that of *Adiantum pedatum*. *Proc. Iowa Acad. Sci.* 55:223-231. (Compares Iowa material with tropical material; notes that fern fronds can be as varied in response to the environment as that noted in angiosperm leaves.)
- Wylie, R. B. 1949. Variations in leaf structure among *Adiantum pedatum* plants growing in a rock cavern. *Amer. J. Bot.* 36:282-287. (Compares Iowa material with tropical material; notes increasing importance of epidermal control of translocation and photosynthesis with increasing habitat sheltering or moderation.)