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Additional Iowa Pteridophyte References

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The Iowa pteridophyte (ferns and fern allies) flora has been the subject of a field, herbarium, and literature investigation for the past decade (1972-1982). These efforts have resulted in the preparation of a new summation of floristic collections (Peck, 1976b), along with an annotated bibliography to references on Iowa pteridophytes (Peck, 1976a). Since then, continued field and herbarium study has resulted in additional floristic information being reported (Peck, 1980; 1983). Similar studies have been conducted in neighboring states over the past decade as part of their state floristic surveys, endangered species programs, or natural heritage programs. States in the Upper Midwest with recent pteridophyte florae include Illinois (Mohlenbrock, 1967; 1970; Mohlenbrock and Ladd, 1978; Mohlenbrock and Ladd, in press), Minnesota (Tyron, 1980), Missouri (Steyermark, 1963; Key, 1982), and Wisconsin (Peck and Taylor, 1980a; 1980b; 1981). States in the Great Plains to the west of Iowa which have had recent florae include North Dakota (Pelvitt and Barker, 1975) and South Dakota (Van Bruggen, 1977). Two physiographic regions adjacent to Iowa have also been studied, resulted in reports covering the entire Great Plains (Great Plains Flora Association, 1977; Petrik-Ott, 1975; 1979) and the Driftless Area of northeastern Iowa and parts of Illinois, Minnesota, and Wisconsin (Hartley, 1966; Peck, 1982). Maps of pteridophyte distributions in the Upper Midwest (Illinois, Iowa, Minnesota, Missouri, and Wisconsin) were included in the recent revision of the Driftless Area pteridophyte flora (Peck, 1982). These state and regional treatments, along with the manuals of Wherry (1961) and Mickel (1979) and the new world treatment of pteridophytes by Tyrone and Tyrone (1982), provide pteridologists and Iowa's botanists with much improved floristic and distributional data. Consequently, studies of the floristic affinities and vicariance geography of Iowa's pteridophytes can now examine historical and ecological influences on species' abundance and patterns of distribution.

Since publication of the Iowa pteridophyte bibliography (Peck, 1976a), 52 additional references to Iowa pteridophytes have been located, including 35 published since 1975 and 17 older references. As before, each reference was annotated to clarify the title, contents, and significance. To date, a total of 218 references to Iowa pteridophytes have been located and annotated. Based upon these references, the Iowa pteridophyte flora consists of 65 pteridophytes (58 species plus 8 hybrids), including 47 ferns, 9 horsetails, 1 quillwort, 6 clubmosses, and 2 spikemosses. The fern Botrychium dissectum Spreng. and the quillwort Isoetes melangodna Gay & Dur. occur in Iowa as two distinct forms, making the total flora of Iowa pteridophytes a total of 67 (species, hybrids, plus noteworthy forms). The purpose of this report is to provide a current statement on Iowa pteridophyte literature by updating a previous report (Peck, 1976a) for workers in Iowa, as well as workers in other states, who use Iowa data for floristic and ecological investigations.

ANOTATED BIBLIOGRAPHY

ALLEN, W. H., B. G. GOETTSCH, and R. K. KENNEDY. 1970. Surficial geology, soils, and plant association of Ross Biological Area. Proc. Iowa Acad. Sci. 77:233-248. (Equiarnum hyemale was reported as a good indicator of high soil moisture, particularly at the foot of slopes, where it was strongly zoned and correlated with high soil moisture).

ANDERSON, W. A. 1946. Development of prairie at Ames. (Comparisons of isolated, disturbed populations of Asplenium platyneuron with those tested in the wild, showed that the former were less vigorous, and had smaller leaves).


CARR, M. D. 1981. Iowa ferns. Linnaean Fern Bull. 19:84. (Reports that the first discovery of Cryptogramma taiutera on sandstone was from a collection at Waukon, Iowa).

ENGELMANN, G. 1882. The genus Iowan in North America. Trans. St. Louis Acad. Sci. 4:358-390. (Reports that collections of Iowan in Iowa were from Vasey in 1863 were the 20th observation of Iowan in North America and that collections of Iowan in Iowa were from Vasey in 1863 were the 20th observation of Iowan in North America and the 21st observation of Iowan in Iowa, collected in 1863 from southern Illinois).

FARRAR, D. R. 1976. Spore retention and release from overwintering fern fronds. Amer. Fern J. 66:49-52. (Observations on natural populations of ferns which note that spore release and retention varies with respect to species; some species released all spores promptly, while others released spores slowly, and some released spores over a 9 month interval).

FINK, B. 1894. Blights, orchids, and ferns of Fayette, Iowa. Bull. Upper Iowa Univ. 1(10) on page 98; efforts to locate this document in Iowa libraries, including Upper Iowa University, have not been successful).


LAMMERS, T. G. 1980. The vascular flora of Des Moines County, Iowa. M.A. thesis, University of Northern Iowa, Cedar Falls, IA. (Reports 23 species, including 6 horsetails and 17 ferns.)


MCGINNIS, M. R. 1969. Selected aspects of the biology of Hylocomium splendens (Roth) H. M. Mag. on Cyttënum fragilis (L.) Brem. Ph. D. dissertation, Iowa State University, Ames. (Provides information on viability and germination requirements of sporelings using various storage conditions; funigus is a parasite on fern fronds, perpetuating itself in sporelings; habitat, stand dynamics, and reproductive ecology were investigated; rules of flooding and drawdowns on populations were identified as critical to population occurrence, persistence, and dispersal.)

PECK, J. H. 1980b. Equisetum luridum in Illinois, Iowa, and Wisconsin. Amer. Fern J. 70:33-38. (Reports field survey which discovered the first and second Iowa stations, the second Illinois station, the second and fourth Minnesota stations, and eight new records in Wisconsin; habit, stand dynamics, and reproductive ecology were investigated; rules of flooding and drawdowns on populations were identified as critical to population occurrence, persistence, and dispersal.)

PECK, J. H. 1980c. The life history and reproductive biology of ferns at Woodman Hollow, Iowa. Ph. D. dissertation, Iowa State University, Ames. (Phyto­geographic and microclimate investigation of Woodman Hollow State Preserve, Webster County; field and laboratory study of 14 species of ferns, including spikemoss, gametophyte, spore, and sporeling ecology.)

PECK, J. H. 1982. Ferns and fern allies of the Driftless Area of Illinois, Iowa, Minnesota, and Wisconsin. Milwaukee Public Museum Comte Bio. Geol. 53:1-140. (Reports 139 species, including 10 genera of spikemosses; sporelings; 12 ferns; 7 fern allies; 124 species of vascular plants; 210 species of vascular plants reported; reports on the first discovery of Equisetum robustum and E. rufescens in Iowa which had not been observed since its discovery in 1863.)

PECK, J. H., and W. R. BUCK. 1978. The Selaginella apoda complex in Iowa. Amer. Fern J. 68:29. (The single station of a wetland spikemoss in Iowa was determined not to have been extirpated as previously reported; the species is known as S. angularis Buck; found from the St. Lawrence River westward through the Great Lakes states and south to Missouri; S. apoda is found to the south of S. apoda.)


PECK, J. H., D. M. ROOSA, and L. J. EILERS. 1980. A checklist of the vascular plants of Allamakee County, Iowa. Proc. Iowa Acad. Sci. 87:67-75. (Reports 52 pteridophytes, including 1 spikemoss, 5 clubmosses, 8 horsetails, and 38 ferns; habitat observations are reported on the first discovery of Dryopteris X triploidea and Equisetum X luridum in Iowa.)


PILOUFF, M. E. 1977. An autecological study of Bondia papyrifera in the Iowa River greenbelt in Hardin County, with notes on the ecology of M. S. thesis, Iowa State University, Ames. (Investigation of the field demographics and experimental analysis of sexual and asexual reproductive biology of Equisetum hyemale, L. variegatum, and E. X ferrissii to assess their frequency, abundance, and persistence.)


SYLVESTER, E. P. 1965. Horsetail (Equisetum arvense L.). Iowa State University Cooperative Extension Service, Weed Control Series, WC-37 Revised Aug. 1965. (Description, symptoms, treatment, and control measures; species of Equisetum were erroneously used to represent ferns.)

TRYON, R. M. 1948. Some Woodias from the North Shore of Lake Superior. Amer. Fern J. 38:159-170. (Discusses the Iowa collection of Woodia oregana with respect to the taxonomic significance of W. caroliniana in the Upper Midwest.)

TRYON, R. M., and A. E. TRYON. 1982. Ferns and allied plants with special reference to Tropical America. Springer-Verlag. New York. 857 pp. (Provides the Neotropical distribution of the genera found in the Western Hemisphere; excellent compendium on fern systematics with general distribution maps of value in interpreting the range of Iowa's pteridophytes general.)


WAGNER, W. H. 1959. American grapeferns resembling Botrychium ternatum: a preliminary report. Amer. Fern J. 49:97-103. (Indicates that Botrychium oreades occurs in Iowa; probably based on specimens that were collected by E. W. Graves and deposited in a non-Iowa herbarium; efforts to locate these vouchers have been unsuccessful.)

WAGNER, W. H., and D. M. JOHNSON. 1981. Natural history of the ebony spleenwort fern, Asplenium platyneuron (Aspleniaceae) in the Upper Great Lakes area. Can. Field-Nat. 95:156-166. (Reports on the distribution and biology of A. platyneuron in North America, including Iowa populations; suggests that northern populations occur as a result of glaciation.)

WEATHERBY, C. A. 1936. E. W. Graves. Amer. Fern J. 26:75-76. (Obituary for E. W. Graves, an amateur phytologist who retired to Bentonville, Iowa, and began a study of ferns in the Upper Midwest, which resulted in the first reports for B. distichum and B. oblongum in Iowa, Wisconsin, Minnesota, and Illinois; see references by Graves reported here (1926) for a profound change in the perception of the occurrence of B. papyrifera in Iowa.)

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IN MEMORIAM

Dr. Robert H. Chapman

Dr. Robert H. Chapman, Assistant Professor of Botany, Iowa State University, died February 3, 1984 in Ames, Iowa. He was born in Atlanta, Georgia and received a B.A. degree from Emory University in 1969. Following three years in the Army Security Agency, including 15 months as an interpreter in Viet Nam, he enrolled at the University of Georgia and received an M.S. (1974) and Ph.D. (1977) in Botany. He was a post-doctoral fellow at the University of Rochester but left early to accept an appointment at Iowa State in fall, 1977.

His teaching responsibilities included general biology, biological evolution, and plant population biology. He became especially interested in evolution and, in addition to teaching in the formal evolution course, often spoke to student groups about evolution. He became a spokesman for biologists on the question of what is science and what is not science in the field of evolutionary biology.

Dr. Chapman was known beyond the campus for his efforts to raise awareness of the impact of the evolution controversy on science. He wrote a chapter for a book on the subject and presented papers about it at meetings. He was a member of the Controversial Issues Panel of the Iowa Academy of Science which dealt with this matter.

His research interests were in evolutionary biology, specifically in the application of electrophoresis techniques to problems in plant population biology. He had published papers in this discipline. For a short period he was Associate Editor for Botany for the Proceedings of the Iowa Academy of Science.

Bob Chapman was an amiable and intelligent teacher and scientist. The early end to his career is an unfortunate loss to both Iowa State University and the state of Iowa.