An Annotated Bibliography to the Literature on Bryophytes in Iowa

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An Annotated Bibliography to the Literature on Bryophytes in Iowa

JAMES H. PECK


Iowa bryological literature covers a century of study. Only one previous review, now 30 years old, exists. An updated bibliography is presented with 98 references. Of these, 47 had not been previously compiled. The references were annotated to facilitate access to, and understanding of, the references.

Index Descriptors: bryophytes, mosses, liverworts, hornworts, Iowa flora.

The bryophyte flora of Iowa, consisting of mosses, liverworts, and hornworts, has been reasonably well studied over the past century. The first 70 years of study were reviewed by Conard in a series of three papers in which he provided a checklist (Conard, 1945a), a nomenclatorial review (Conard, 1945b), and a chronological history of the people and publications involved (Conard, 1945c). Conard (1956) later provided an updated checklist to Iowa bryophytes. These papers also provide a basis for an introduction to Iowa bryology. In addition to being authoritative, these publications offer a rare insight into the people involved in Iowa bryological research.

In the course of my thesis research on the ecology of cryptogamic plants, it became apparent that sufficient additional publications existed to warrant an updated compilation. Thus an extensive search of the literature was undertaken. At first the period from 1945 to the present was considered, but it became evident that some earlier works existed which had not been previously treated. In order to provide a complete treatment and facilitate access to the literature, the search was thus expanded to include all references on Iowa bryophytes.

During a three-year period 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) were visited to inspect volumes, journals, and theses. Since most of these institutions have had name changes, the current name, rather than the name at the time of publication of the reference, was used to facilitate knowing which institution might have that holding.

Six journals contained most of the references to the literature on Iowa bryophytes. These were carefully inspected: The Bryologist, The Iowa State College Journal of Science (now called The Iowa State Journal of Research), The Iowa State Geological Survey Annual Report, The Proceedings of the Davenport Academy of Natural Science, The Proceedings of the Iowa Academy of Science, and The University of Iowa Studies in Natural History (known as the Bulletin from the Laboratories of Natural History of the University of Iowa and The State University of Iowa Studies in Natural History). Since the references were bound and filed under the name of the journal at the time of publication, although the sequence eventually underwent name changes, the journal name at the time of publication was used in this list.

Theses were consulted to check for material not incorporated into published versions. Often valuable information, such as collecting localities or county-dot maps, was not published. Thus, all theses with information on Iowa bryophytes were included. A special point was made to search the theses at Iowa State University and The University of Iowa, particularly for theses which were apparently never made available in published form.

The decision to include a paper was based upon the criteria that the bryophytes be Iowa material, the material be named (scientific names), and observations be made of the material (range, habitat, localities, development, or ecology). Most references included in this paper meet all three requirements, or were of historical value. About 35 references, including five cited in Conard (1945c), failed to meet these criteria and were excluded from the present list. Additionally, two other Conard (1945c) references were excluded, as they were mimeo-lists, which eventually became available in published form.

A total of 98 references are presented, including 47 not previously compiled. Of these, 30 have been published since the Conard (1945c) review, while 17 were of prior publication. Fifty-one references are included which were treated by Conard (1945c).

Since many of the titles are not very self-explanatory, the references were annotated to aid in clarifying their contents. Also included, where necessary, are remarks clarifying the citation, such as noting a difference between the year of publication and the year for which the volume was issued. All references were cited by publication year if given on the volume. When that was not available, the year for which the volume was issued was used. For example, if an issue of the Proceedings was published a year later than the year of the meetings, then the year of the meetings was included in annotated remarks as "volume issued for the year . . . ."

I would like to acknowledge the constructive discussions of Dean Roosa, Board Ecologist, State Preserves Advisory Board, on the need for improved access to the literature on the Iowa flora. I would like to thank Dean Roosa, Nels Lers­ten, Roger Landers, and John Dodd for suggesting references and offering advice. A special note of thanks must be offered to Nels Lers­ten and Donald Farrar for critically reading the manuscript and for making valuable comments.

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

1 Department of Botany and Plant Pathology, Iowa State University, Ames, Iowa 50011.
Anderson, J. P. 1905. Thalloid liverworts of Decatur County. Iowa Naturalist 1:33-34. (Reports five liverworts and three hornworts; habitats.)

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


Blagg, B. 1928b. In Grannis Hollow. Bryologist 31:98-100. (Reports 12 mosses as new state records; Fayette County.)


Cavanagh, L. M. 1930. Notes on Iowa mosses, II. Proc. Iowa Acad. Sci. 37:98-100. (Revises Bessey (1884); notes errors in Iowa bryophyte literature.)

Cavanagh, L. M. 1931. Notes on Iowa mosses, IV. Proc. Iowa Acad. Sci. 38:129-132. (Reports 14 new species for state, including an early Sphagnum collection. According to Conard (1945c, p. 166), "Notes on Iowa mosses, III" does not exist; he indicates that Shimek convinced Cavanagh to consider Cavanagh (1929a) as "III," which is chronologically inappropriate.)


Conard, H. S. 1912. Ferns and liverworts of Grinnell and vicinity. Proc. Iowa Acad. Sci. 19:105-106. (Reports seven liverworts; habitats; Poweshiek County.)


Conard, H. S. 1932b. Mosses of Pine Hollow, Iowa. Bryologist 35:28-30. (Reports 86 mosses and 12 liverworts; White Pine Hollow State Forest Preserve, Dubuque County.)

Conard, H. S. 1935. Mosses and soil erosion. Iowa State Coll. J. Sci. 9:347-351. (Reports experiments on water holding potential of mosses; lists 24 mosses and 3 liverworts significant in soil erosion control in Iowa, noting their shade tolerance, substrate preference, and substrate pH.)

Conard, H. S. 1938a. The fir forest of Iowa. Proc. Iowa Acad. Sci. 45:69-72. (Reports 13 species that occur within Iowa fir forests.)

Conard, H. S. 1938b. One hundred Iowa mosses. Proc. Iowa Acad. Sci. 45:63-68. (Sets of material were sent to 10 herbaria of deposit; names, habitats, and some localities listed.)

Conard, H. S. 1941a. Liverworts of the so-called unglaciated area of Iowa. Proc. Iowa Acad. Sci. 47:91-95. (Reports 17 liverworts; extensive phytogeographic discussion; volume was issued for the year 1940.)

Conard, H. S. 1941b. Thirty Iowa liverworts. Proc. Iowa Acad. Sci. 47:97-99. (Sets of material sent to 10 herbaria of deposit; names, habitats and localities listed; volume was issued for the year 1940.)

Conard, H. S. 1942. The liverworts of Iowa. Proc. Iowa Acad. Sci. 49:191-195. (Reports 56 liverworts and 7 hornworts; annotated list with comments on county of occurrence, collecting localities, habitats, and corrections of the Iowa liverwort literature.)

Conard, H. S. 1943. Thirty-five Iowa mosses. Proc. Iowa Acad. Sci. 50:181-183. (Sets of material sent to 10 herbaria of deposit; names, county of occurrence, habitats, and some localities.)

Conard, H. S. 1945a. The Atrachaeata (Bryophyta) of Iowa, I: The species and their geographical distribution in the state. Bryologist 48:70-82. (Reports 274 mosses, 55 liverworts, and 4 hornworts; state distribution noted by county occurrence.)

Conard, H. S. 1945b. The Atrachaeata (Bryophyta) of Iowa, II: Iowa mosses in print: A critique of the species reported for the state. Bryologist 48:103-109. (Reports errors and misidentifications for the taxa reported for Iowa.)

Conard, H. S. 1945c. The Atrachaeata (Bryophyta) of Iowa, III: Mosses and persons in Iowa: A summary of the literature of mosses in Iowa. Bryologist 48:161-170. (History of the study of bryophytes of Iowa in chronological order, with publications cited and evaluated; 58 references.)

Conard, H. S. 1947a. Phenology of mosses in Iowa. Proc. Iowa Acad. Sci. 53:141-146. (Reports 245 mosses, 57 liverworts, and 4 hornworts; notes time of occurrence of gametangia, spike stage, calyptra, mature sporophyte; issued for the year 1946.)

Conard, H. S. 1947b. Twenty-five more mosses and liverworts from Iowa. Proc. Iowa Acad. Sci. 54:65-66. (Sets of material sent to 10 herbaria of deposit; names, localities, and habitats; includes 22 mosses and 5 liverworts.)
Conard, H. S. 1951. The moss clinic. *Bryologist* 54:70-71. (Describes gathering of bryologists who worked during summer at Iowa Lakeside Laboratory, Dickinson County, under Dr. H. S. Conard for many years.)

Conard, H. S. 1952. The vegetation of Iowa: An approach toward a phytosociological account. *State Univ. Iowa Stud. Nat. Hist.* 19(4):1-166. (Comments on bryophyte taxa as to localities and habitats are to be found throughout, but see especially chapters 6-8.)

Conard, H. S. 1956. Mosses and liverworts of Iowa. *Proc. Iowa Acad. Sci.* 63:345-354. (Updates Conard (1945a); reports 293 mosses, 61 liverworts, and 4 hornworts; state distribution indicated by county occurrence.)

Conard, H. S. 1971. The moss clinic, concluded. *Bryologist* 74:442-443. (Describes the significant impact the members of the clinic made in bryology, and the importance of the clinic in their study; held for many years during the summer at Iowa Lakeside Laboratory, Dickinson County.)


Craft, I. H. 1943. Areolar organization of some of the Marchantiaceseae. M.S. thesis, The University of Iowa, Iowa City. (Presents morpholog-cal-anatomical data on representatives of three genera; material collected in eastern Iowa.)

Craigg, E. J. 1933. Mosses of Allamakee County, Iowa. M.A. thesis, Grinnell College, Grinnell. (Reports 68 species and varieties from a *Taxis* covered slope, 29 species in mesic woods, 38 species in a white pine grove, and 17 species in a white birch-juniper covered hillside; 93 species and varieties in all were collected; 10 species new to the state were noted; included a quantitative-comparative bryofloristic study, bryophyte associations, and habitat-substratum restrictions.)


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 four species of *Sphagnum* and five other mosses; Hancock County; first report of a large, previously unreported, acid bog in Iowa at Pilot Knob State Park; this park was visited often by botanists such as Machride, Shimek, Pammel, and Conard, but the bog was overlooked.)


Grout, A. J. 1930. A fossil form of *Drepanocladus fluitans jeunbnerati* (Ren.) Grout. *Bryologist* 33:33. (Reports moss from Aftonian deposits, Emmet County.)


Lazell, F. J. 1927. The flora and blooming time of plants of Linn County, Iowa. M.S. thesis, Iowa State University, Ames. (Notes 46 mosses and 5 liverworts; habitats and localities.)


Linder, M. F. 1886. A brief description of nine species of Hepaticae found in the vicinity of Iowa City. Thesis, The University of Iowa, Iowa City. (Hand-written manuscript; descriptive morphology.)


Martin, J. N. 1943. Some of the available hepatics and their location in the vicinity of Iowa State College. *Proc. Iowa...*
Acad. Sci. 50:229-234. (Reports eight liverworts and one hornwort; habitats and localities.)


McConaha, M. 1940. The morphology of ventral structures affecting capillarity in the Marchantiales. Ph.D. thesis, The University of Iowa, Iowa City. (Treats five species in four genera; descriptive morphology and anatomy; material gathered in eastern Iowa.)

Messmer, L. W., and N. R. Lersten. 1968. Chromosome studies of ten species of mosses from Iowa. Bryologist 71: 348-353. (Reports chromosome counts from Iowa material; some counts first reported for species, while other counts verify or differ from those already published.)

O'Hara, R. 1941. Aphanorhegma patens in Iowa. Proc. Iowa Acad. Sci. 47:115-122. (Reports new state record, Tama County; taxonomic and morphologic discussion; volume issued for the year 1940.)

Pammel, L. H. 1909. Flora of northern Iowa peat bogs. Iowa Geol. Sur. Ann. Rpt. 19:735-777. (Historically interesting for its lack of mention of a large Sphagnum bog in Pilot Knob State Park, while mentioning the lake in which it occurs; see also Grant and Thorne (1855); volume issued for the year 1908.)


Savage, T. E. 1904. A buried peat bed in Dodge township, Union County, Iowa. Proc. Iowa Acad. Sci. 11:103-108. (Reports two mosses; volume issued for the year 1903.)

Sayre, G. 1934. The Grimmias of Iowa. Bryologist 37:29-34. (Reports 10 species and varieties; notes localities, habitats; presents keys and taxonomic discussion.)

Sayre, G., and H. S. Conard. 1934. The mosses of southwestern Iowa. Proc. Iowa Acad. Sci. 41:105-106. (Reports 75 species and varieties; however, only new state and county records were specifically mentioned.)


Shimek, B. 1897. The flora of the Sioux quartzite in Iowa. Proc. Iowa Acad. Sci. 4:72-77. (Reports one liverwort; see Conard, 1945c, p. 162; issued for the year 1896.)

Shimek, B. 1899. The Iowa liverworts. Proc. Iowa Acad. Sci. 6:113-116. (Reports 21 species; habitats, localities, and county presence; volume issued for the year 1898.)

Shimek, B. 1903. Living plants as geological factors. Proc. Iowa Acad. Sci. 10:41-48. (Reports soil erosion control by three liverworts in Iowa; volume issued for the year 1902.)


Shimek, B. 1915. The plant geography of the Lake Okoboji region. Bull. Lab. Nat. Hist. State Univ. Iowa 7(2):1-90. (Reports five mosses in the prairie; one moss and two liverworts in swamps and lakes; four mosses in forest; comments on the general paucity of bryophytes.)

Shimek, B. 1916. The plant geography of the Lake Okoboji region: Additional notes. Bull. Lab. Nat. Hist. State Univ. Iowa 7(4):3-5. (Historically interesting note that after one year of increased rainfall, the bryophyte flora was much more abundant than it had been in the last 20 years; see also Shimek (1915).)

Slotterbeck, A. 1888. The mosses of Iowa City and vicinity. Thesis, The University of Iowa, Iowa City. (Handwritten manuscript; descriptive morphology of 13 species, including Sphagnum capillaceum; see also Macbride (1899); both references were overlooked by later workers.)

Smith, G. L. 1963. Additions to the moss flora of Iowa. Proc. Iowa Acad. Sci. 70:64-67. (Reports two new species for the state, including Buxbaumia; localities in eastern Iowa.)

Smith, G. L. 1964. Analysis of variation in gametophytes of Athrium in North America. M.S. thesis, The University of Iowa, Iowa City. (Includes Iowa material; reports chromosome counts for Iowa material. The first made for Iowa material.)

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 12 mosses and two liverworts; see also Grant and Thorne (1955); Dead Man's Lake, Pilot Knob State Park, Hancock County.)


Steere, W. C. 1941. Pleistocene mosses from the Aftonian interglacial deposits of Iowa. Mich. Acad. Sci., Arts, Lett. 27:75-104. (Reviews all fossil mosses of Iowa; material of 17 genera noted, with 19 specific identifications provided.)


Tolstead, W. L. 1936. A flora of Winneshiek and Allamakee counties. M.S. thesis, Iowa State University, Ames. (Reports 33 mosses; habitats and 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 33 mosses; habitats and some localities.)