

History of Indiana Bryology

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Bryophytes are little studied in comparison with the spermatophytes, and the number of students interested in this group of plants is small. Indiana is fortunate in having had observations made and recorded in the field of bryology over a period of approximately 65 years.

The earliest published record of scientific interest in the bryophytes of Indiana, noted by the author, is that of Prof. A. H. Young¹ of Hanover College, Hanover, Indiana, in *Botanical Gazette* 2:61-62, 1876. Mr. Young states in this article that the mosses were collected during the fall and winter of 1875 and that he was assisted in the identifications by Prof. D. C. Eaton of Yale College and Mr. Eugene A. Rau of Bethlehem, Pennsylvania. The "Bryological Notes" prepared by Prof. Young concern 70 different species, collected in Jefferson county. The Young Herbarium of Bryophytes, consisting of several hundred packets, is in the Indiana University Herbarium.

Mrs. Mary Parry Haines,² a student of geology and paleontology, published two papers concerning the bryophytes of Wayne county, Indiana, in 1878 and 1879. I have had no success in locating the specimens upon which her publications were based.

Names of bryophytes from another portion of the state were published in 1879 by John Merle Coulter³ in "The Flora of Northern Indiana". The Coulter specimens are in The Field Museum of Natural History.

Lucien Marcus Underwood,⁴ in 1882, published a list of North American Hepaticae in which Indiana is represented. Probably L. M. Underwood, Professor of Botany in DePauw University, 1891-1895, is one of the most widely known American bryologists who has done extensive work with this group of plants in Indiana. Prof. Underwood was Director of the Botanical Division of the Indiana State Biological Survey of the Indiana Academy of Science and in 1893 had in his herbarium approximately 10,000 specimens of bryophytes, representing 900 species of mosses and 1,300 species of liverworts. In 1891, Prof. Underwood reported the finding of the rare moss, *Bryoxiphium norvegicum* (Bridel) Mitten in great abundance on the sandstone rocks of

¹Born in Avondale, Cincinnati, Ohio, in 1852; died in Hanover, Indiana, in 1926. James L. White & Co. of New York published his biography in the *National Cyclopedia of America* in 1926.

²Born in Cinnaminson, New Jersey, Dec. 24, 1826; died at Richmond, Indiana, Dec. 8, 1884. Was custodian of the Paleontology Department of the Museum of the Scientific Association of Richmond, Indiana. *Transactions of the Scientific Association of Richmond, Indiana*, June 1, 1875. *History of Wayne county, Indiana*, 1884, page 187.

³Born in Ningpo, China, Nov. 20, 1851; died in Yonkers, New York, Dec. 23, 1928.

⁴Born in New Woodstock, New York, Oct. 26, 1853; died in Redding, Connecticut, Nov. 16, 1907. Curtis, Carlton Clarence, 1908. A biographical sketch of Lucien Marcus Underwood. *Bull. Torrey Bot. Club* 35:1-12. Barnhart, John Hendley, 1908. The published work of Lucien M. Underwood. *Bull. Torrey Bot. Club* 35:17-38.

Fern, Putnam county. The Indiana station was the fourth in the fourth state, Sullivant making the first report in 1846 for Ohio, Rau for Pennsylvania, and Mrs. Elizabeth G. Britton in 1883 for Wisconsin. Underwood also reported in 1891 the first collection in America of the hepatic, *Fossombronia cristata* Lindberg, having found it on clay banks at Fern. Among the 212 titles of the published works of Lucien M. Underwood, 31 concern Hepaticae. In nine of these, liverworts of Indiana are discussed. Prof. Underwood left only a small portion of his bryophyte collection in the DePauw University Herbarium. The Lucien M. Underwood Herbarium was purchased by The New York Botanical Garden.

In 1886, Bulletin I of the Purdue University School of Science contained the "Analytical Key to the Genera of Mosses, recognized in Lesquereux and James's Manual of the Mosses of North America," prepared by Charles Reid Barnes,⁵ Professor of Botany, Purdue University, 1880-1885. Although the edition was large, the demand soon exhausted the supply of bulletins. Encouraged by these requests, in 1890 he published keys to the species of North American mosses recognized by Lesquereux and James. This edition was soon exhausted, and in 1896 Prof. Barnes published "Analytical Keys to the Genera and Species of North American Mosses." The taxonomic work of Prof. Barnes in the field of bryology won for him recognition among botanists. The analytical key was considered to be one of his most important publications on mosses. His specimens have been deposited in The Field Museum of Natural History and in the Herbarium of the University of Wisconsin.

Dr. W. S. Blatchley included a list of 13 species of mosses in his thesis concerning plants of Monroe county, in 1887.

Ellsworth Jerome Hill,⁶ a teacher, minister, and botanist, collected extensively, leaving approximately 16,000 sheets in his herbarium, at the time of his death. Mr. Hill devoted his last 10 or 12 years to the study of mosses of the Chicago region. He prepared descriptions of 133 species. In the list of 162 titles of the E. J. Hill publications, there are 10 which concern bryophytes. Five of these articles discuss Indiana mosses and liverworts. The University of Illinois purchased the E. J. Hill Herbarium. Some of his mosses are also in the Herbarium of The Field Museum of Natural History.

Dr. Julius Röhl, a foreign botanist, made extensive collections of mosses in America, in 1888, and many species of bryophytes collected in and near Hobart, Indiana, were published in his list in Hedwigia in 1893. Röhl's collections of American mosses are in the Botanisches Museum, Berlin-Dahlem, Germany.

Prof. Joseph P. Naylor,⁷ Head of the Physics Department of DePauw University for many years, was intensely interested in mosses, especially

⁵Born at Madison, Indiana, Sept. 7, 1858; died in Chicago, Feb. 24, 1910. Anonymous, 1910. Charles Reid Barnes. Bot. Gaz. 49:321-324. Cowles, Henry C., 1910. Charles Reid Barnes. Science 31:(no. 797) 532-533.

⁶Born at LeRoy, New York, Dec. 1, 1833; died in Chicago, Ill., Jan. 22, 1917. Chase, Agnes, 1917. Rev. E. J. Hill. Rhodora 19:60-69.

⁷Born in Pennsville, Ohio, April 4, 1853; died in Little Rock, Arkansas, May 22, 1938. Edington, Will E., 1939. Joseph P. Naylor. Proc. Ind. Acad. Sci. 48:6-7.

those of Putnam county. Upon retiring from his college teaching, he presented his herbarium of several hundred packets and his bryophyte library of many volumes to the Botany Department of DePauw.

The bryophytes collected in Monroe county, Indiana, 1912-1914, by Prof. F. L. Pickett and Mrs. Mildred Nothnagel Wilson are in the Herbarium of Indiana University and in the personal collections of Prof. Pickett, Pullman, Washington, and Mrs. Wilson, Iowa City, Iowa.

Many of the contributions to Indiana bryology have been made in county studies as Jefferson, Wayne, Putnam, Steuben, Monroe, Hamilton, Marion, etc., or in specific localities as Spring Mill Park and the Dunes. Prof. Underwood, in 1894, presented to the Academy of Science the "List of cryptogams at present known to inhabit the state of Indiana."

A review of the bibliography of Indiana bryophytes shows that the studies first made were lists of species and varieties collected, with habitat notations; these were succeeded by morphological and physiological projects; and within the last few years many ecological problems have been carried on, contributing to the bryophytes more scientific importance than they have ever before received.

As a member of the Biological Survey Committee of the Indiana Academy of Science for several years, I have prepared a bibliography of Indiana bryophytes in addition to making extensive collections of mosses and liverworts of the state. In order that this bibliography may be available to others interested in bryophyte studies, I am including in this history of Indiana bryology a bibliography of Indiana bryophytes consisting of 81 references.

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