

STUDIES IN OHIO BRYOPHYTES¹

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Ohio is recognized by bryologists as a state for which the bryophyte flora is well collected and well known. This is not without foundation, for the enthusiasm of both amateurs and professionals in collecting has stimulated many scattered reports. Most reports are of specific areas within the state but several have dealt with the entire state. In spite of the large number of collections and reports, there has not yet been a comprehensive study of the bryophyte flora of this state. It is especially appropriate that such a study not be delayed since comparisons of the vegetation of the state 20 and 30 years ago with the vegetation of today will reveal that industrial and urban expansion have made great inroads upon the natural vegetation. Commercial enterprises are now moving en masse to this region, and as Ohio becomes an even greater industrial state it is easily foreseeable that vegetation and natural beauty may be quickly supplanted by factory architecture.

During recent studies of the distribution of Ohio mosses, the author had the opportunity of examining approximately 9500 packets of Ohio moss collections. Primary effort was placed upon examining those packets which were in herbaria within or near Ohio. Lists of species collected in Ohio were obtained from various national herbaria and published reports dealing with the state were also consulted. The check list presented herein is a result of this study.

BRIEF HISTORY OF BRYOLOGY IN OHIO

The Period before 1900

This era was dominated by the interest and enthusiasm of the father of American bryology, William S. Sullivant. Sullivant became interested in mosses about the year 1840. Although his first publication on Ohio plants in 1840 contained no mention of mosses, he was to issue in 1845 an accurately identified collection, the *Musci Allegheniense*. Prior to Sullivant's collection, the published moss flora of the state consisted of nine species mentioned in the catalogue of John C. Riddell. The supplement to this catalogue listed two more species (Riddell, 1835, 1836). Mr. T. G. Lea accumulated collections of the Cincinnati region during the years 1834 to 1844. This list of 88 species was not published until 1849, after Lea's death. It was published by Sullivant. The *Musci Allegheniense* contained 25 species listed as from Ohio and 52 species listed as common, a total of 77 species which the present author infers were known from Ohio.

Sullivant's early interest in mosses probably led him to investigate the vicinity of Columbus thoroughly. In a letter to Gray, written in 1841, he states, "Our locality here is not a good one for mosses—at least we have not those that affect hilly or mountainous districts—there may be found here with close hunting perhaps 130 to 140 species" (Rogers, 1940). In the foreword to the bryophyte section of Gray's Manual, second edition, 1856, Sullivant states, "Scarcely any portion of our country, excepting central Ohio, has been carefully examined." The Manual contains 44 species listed as from Ohio and 95 listed as common, a total of 139. Lesquereux and James' *Mosses of North America*, published in 1884, was meant to be the fulfillment of Sullivant's work. It contained 42 species listed as from Ohio and 145 species listed as common.

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Sullivan's enthusiasm was undoubtedly influential in stimulating the interest of contemporary Ohio collectors. In 1854, Mr. J. L. Cassels published a list of six mosses from the vicinity of Cleveland. In a later publication (1874) he lists mosses collected in this vicinity from 1845 to 1859. In 1878, Mr. A. P. Morgan published *Flora of Miami Valley*, which listed six mosses. Collections during this period include those of the Reverend Mr. Herzer of Berea, Ohio, whose specimens are now in the Baldwin Wallace College Herbarium, and those of F. D. Kelsey, then chairman of the department of botany at Oberlin College, whose collections are now in the Oberlin College Herbarium. Miss Hannah J. Biddlecome and Miss E. Jane Spence, both from Springfield, Ohio, collected extensively in the areas of Cedar Swamp and Clifton Gorge. Their collections are scattered throughout herbaria in Ohio, but the majority are in The Ohio State University Herbarium. Wm. C. Werner, collecting mostly from Franklin County, also contributed to The Ohio State University Herbarium. Many specimens from various collectors of this period have the notation upon them "from Prof. Lesquereux." Leo Lesquereux was Sullivan's assistant during his lifetime and it is apparent that Lesquereux continued to inspire Ohio bryologists after Sullivan's death. That a good contact was maintained between bryologists is evidenced by the abundance of material that was exchanged between Claassen, Beardslee, Lesquereux, Biddlecome, Spence and others of this period.

Collections and publications near the year 1900 include those of Beardslee and Claassen. Dr. H. C. Beardslee (1865-1948), a retired teacher who lived in Painesville, Ohio, collected extensively in that area. His well preserved and mounted specimens are now a part of The Ohio State University Herbarium. In 1877 Beardslee published a catalogue which contains a list of 261 mosses reported from Ohio. This list was based upon previous lists published by Sullivan, upon his own collections, and upon specimens reported by Leo Lesquereux. Mr. Edo Claassen (1834-1933), a druggist from Cleveland, published several lists of mosses of the region near Cleveland, Ohio. Many of his specimens are now at Western Reserve University in a memorial collection. Others, particularly the mosses, are a part of The Ohio State University Herbarium.

In 1893 Kellerman and Werner published a list of Ohio plants which contained 267 Ohio mosses based largely on Beardslee's catalogue and Werner's collections.

Collections since 1900

Recent collections have been stimulated by the interest in bryology of the botanists at several institutions and many collections are those of organized classes. Typical collections of this type are those at Ohio Wesleyan University. The interest in byology at Ohio Wesleyan was due to the enthusiasm of Dr. C. E. O'Neal, chairman of the botany department from 1913 to 1954.

Individual collectors prominent during this period include representatives from all areas of the state. Dr. Victor Sterki (1846-1933), a physician from Switzerland, came to this country in 1883 and lived in New Philadelphia, Ohio. He was for a time associated with the Carnegie Museum which houses his moss collection of the New Philadelphia area. Miss Nellie Henderson published a list of mosses of Ohio with descriptions and keys during the years 1925 to 1931. This work was based upon the specimens then on deposit in The Ohio State University Herbarium. C. H. Coles in an unpublished Masters Thesis lists all the known mosses of Franklin County as of the date 1933. His specimens are a part of The Ohio State University Herbarium.

There are a number of persons now actively interested in the moss flora of Ohio. Among these, the foremost is Dr. R. C. Wareham, now living in Massachusetts. His accurately determined collections compose the bulk of The Ohio State University moss herbarium. Dr. Wareham collected intensively and extensively over the state from 1939 to 1942. His contribution to Ohio bryology

is outstanding. Mr. Alman Rood of Phalanx Station, Ohio, has assembled a personal collection of bryophytes of the region in and around Mahoning and Trumbull Counties. The team of Bartley and Pontius is well known and respected among Ohio naturalists. Leslie Pontius was assistant postmaster in Circleville, Ohio. Floyd Bartley is a farmer near Circleville. Together they collected extensively in Highland, Jackson, Pickaway, Hocking, and Scioto Counties. These two men are credited with the discovery of many new records of Ohio mosses. Pontius' collection is now at Ohio University at Athens, while Bartley retains and is still adding to his large personal collection. Irma Schnooberger and Frances Wynne collected the moss flora of the Lake Erie Islands in 1945. Duplicates of their collection are in the herbarium of the Stone Biological Laboratory, Put-In-Bay, Ohio. Wood County was investigated in 1950 by R. W. Emmitt, then a student at Bowling Green State University. His specimens are at Bowling Green. Dr. Margaret Fulford has assembled a personal collection, largely of Adams County. These specimens are at the University of Cincinnati. Maurice B. Walters (1952) published a list of mosses of the Cleveland area and continues to collect in this area. Harold Robinson (1957), now at the University of Tennessee, conducted an intensive investigation of Athens County mosses in 1955. His specimens are at Ohio University.

DISTRIBUTIONAL STUDIES

The geologic and vegetational history of Ohio is complex but fairly well understood. An understanding of the factors contributing to the present day aspect and composition of Ohio vegetation demands consideration of such things as the Pre-Pleistocene vegetation (Braun, 1934, 1950), The Teays River System (Ver Steeg, 1946), Pleistocene vegetation (Sears, 1930), Lake Tight (Tight, 1903; Transeau, 1941; Wolfe, 1940), and the extension of the western grasslands into Ohio (Transeau, 1935).

The results of such a vegetational and geologic history leaves Ohio a complex mosaic of forest types in which one would expect to find the following elements:

1. An element from the Tertiary flora which persisted throughout the Pleistocene.
2. An element from the southern Appalachian Mountains which was afforded a northward migration route via the cliffs and valleys of the Teays river system.
3. A northern element which preceded the glacier as it advanced southward.
4. A western element which can be correlated with the advance of the Prairie into Ohio.

Subsequent papers will deal in detail with the distribution and affinities of Ohio mosses. For the present, an inspection of the following list will reveal that no western element has yet been discovered in the Ohio moss flora but that there is a coastal plain element, a northern element, and a tropical element, based upon the geographical affinities as listed by Sharp (1939).

AN ANNOTATED LIST OF SPECIES OCCURRING IN OHIO

The following list, containing 331 species within 121 genera and 34 families, was compiled as a result of the aforementioned study and represents a complete list of all species collected from Ohio to date.

The county records are based primarily upon specimens on deposit in The Ohio State University Herbarium and supplemented when necessary by records from other herbaria. Abbreviations used after the county name indicate that records are based upon specimens in other herbaria, as follows:

OB Oberlin College
 BW Baldwin Wallace College
 OW Ohio Wesleyan University
 OU Ohio University

UC University of Cincinnati
 SL Stone Biological Laboratory
 C Carnegie Museum
 M Marietta College

County records not followed by any of the above abbreviations are a part of The Ohio State University Herbarium.

Additional small collections which the author was unable to examine are known to exist at the following institutions:

Ohio Wesleyan University
Dennison University
University of Cincinnati

Carnegie Museum
Marietta College
Bowling Green State University

Identifications were based primarily upon descriptions and illustrations in *Moss Flora of North America*, edited by A. J. Grout. It was also necessary to refer frequently to Jennings, *Bryologia Europea*, Sullivant, Engler and Prantl, *North American Flora* and other standard bryological references. Grout's *exsiccati* were freely used for comparisons. The arrangement of all taxa is that of Grout (1940).

Andreaeaceae

Andreaea rothii Web. and Mohr. On wet sandstone. Fairfield; Hocking.

Andrea rupestris Hedw. On moist sandstone. Hocking.

Tetraphidaceae

Tetraphis pellucida Hedw. On rotting logs, shale banks, bare sandstone cliffs, soil. Ashtabula; Athens, OU; Auglaize, BW; Belmont; Champaign, UC; Coshocton; Cuyahoga, BW; Erie, Ob; Fairfield; Franklin, BW; Hocking; Jackson, OU, C; Lake; Lawrence; Licking; Lorain, Ob; Monroe; Portage, OU; Summit, C; Trumbull; Vinton.

Polytrichaceae

Atrichum angustatum (Brid.) Bry. Eur. On soil in exposed or unexposed places, usually in damp woods. Ashtabula, C; Athens, OU; Auglaize; Carroll; Columbiana; Coshocton, C; Cuyahoga, BW; Darke; Delaware, OW; Erie; Fairfield; Franklin, BW; Gallia; Geauga; Guernsey; Hardin; Highland; Hocking; Jackson, OU; Lake; Lawrence; Licking; Lorain, Ob; Lucas; Mahoning; Meigs; Morgan, OU; Noble; Ottawa, SL; Pike; Portage; Richland; Scioto; Seneca; Shelby; Stark; Trumbull; Tuscarawas, C; Vinton, OU; Washington, BW, M; Wood, BG.

Atrichum crispum (James) Sull. Base of moist sandstone cliff. Jackson.

Atrichum macmillani (Holz.) Frye. On sandstone. Licking; Wood, BG.

Atrichum undulatum (Hedw.) Beauv. On soil usually in wet areas such as stream banks; also on humus in moist woods. Ashtabula; Athens, OU; Auglaize; Belmont; Clark; Clinton; Coshocton; Cuyahoga; Darke; Delaware, OW; Erie, Ob; Fairfield; Franklin; Gallia; Hamilton; Hancock; Henry; Highland; Hocking; Jackson, OU; Lake; Logan; Lorain, Ob; Meigs, OU; Monroe; Montgomery; Morgan, OU; Ottawa, SL; Perry; Portage; Richland; Scioto; Shelby; Stark; Trumbull; Tuscarawas, C; Union; Van Wert; Vinton; Warren, UC; Washington, BW, M; Williams; Wood, BG.

Pogonatum brachyphyllum (Rich.) Beauv. On exposed clay banks. Hocking.

Pogonatum pensilvanicum (Hedw.) Paris. On exposed clay banks; i.e., stream banks, especially in woods on exposed soil at base of fallen trees. Adams, UC; Athens, OU; Belmont; Coshocton; Cuyahoga, BW; Delaware, OW; Fairfield; Franklin, BW; Geauga; Hocking; Holmes; Jackson, OU; Lake; Lawrence; Licking; Lorain, Ob; Meigs; Perry; Richland; Ross; Stark; Vinton, OU.

Polytrichum commune Hedw. On soil in moist areas, woods, stream banks. Ashtabula; Athens, OU; Belmont; Coshocton; Cuyahoga, BW; Geauga; Harrison; Hocking; Jackson, OU; Lake; Licking; Lorain, Ob; Lucas; Portage; Scioto; Trumbull; Vinton, OU; Williams; Wood, BG.

Polytrichum gracile Smith. Damp soil in woods. Fairfield, BW; Summit.

Polytrichum juniperinum Hedw. On soil usually in dry exposed areas. Ashtabula; Athens, OU; Champaign; Coshocton; Cuyahoga, BW; Fairfield, OU; Geauga, Ob; Hardin; Hocking; Lake; Licking; Lucas; Monroe; Portage; Richland, Ob; Trumbull; Vinton, OU; Wayne.

- Polytrichum ohioense* Ren. and Card. On soil or rocks, near tree bases, usually in open woods. Adams, UC; Ashland; Ashtabula; Athens, OU; Belmont; Clark; Columbiana; Coshocton; Crawford; Cuyahoga, BW; Defiance; Delaware; Fairfield; Franklin; Geauga; Hamilton; Highland; Hocking; Holmes; Jackson, OU; Knox; Lake, OU; Lawrence; Licking; Lorain, Ob; Lucas; Meigs, OU; Monroe; Morgan; Portage; Preble; Richland; Ross; Scioto; Seneca; Stark; Summit; Trumbull; Tuscarawas; Vinton, OU; Washington, M; Williams; Wood, BG.
- Polytrichum piliferum* Hedw. Dry exposed areas such as cliff tops. Athens, OU; Fairfield; Geauga; Hocking; Jackson; Licking; Lorain, Ob; Portage; Trumbull; Vinton, OU.

Fissidentaceae

- Bryoxiphium norvegicum* (Brid.) Mitt. Vertical sandstone cliffs. Athens, OU; Fairfield, BW; Hocking, OU; Jackson, OU; Licking; Portage; Scioto; Vinton, OU.
- Fissidens adiantoides* Hedw. In wet boggy areas. Ashtabula; Champaign; Cuyahoga; Highland, OU; Jackson, OU; Lake; Lawrence, Ob; Ottawa, SL, C; Ross, OU.
- Fissidens cristatus* Wils. On soil in wooded areas, base of trees, swampy area. Adams; Athens, OU; Belmont; Butler, UC; Champaign; Clark; Delaware; Franklin; Highland, OU; Hocking; Jackson, OU; Lawrence; Lucas; Meigs; Muskingum; Ottawa, SL; Pickaway, OU; Ross, OU; Stark; Washington, M.
- Fissidens exiguus* Sull. Moist areas sometimes inundated. Athens; Franklin, BW; Highland.
- Fissidens exilis* Hedw. On bare patches of ground in woods. Cuyahoga.
- Fissidens garberi* Lesq. & Janes. On moist sandstone, roof of sandstone caves. Hocking; Jackson.
- Fissidens hallianus* (Sull. & Lesq.) Mitt. On sandstone bed of intermittent creek. Hocking; Wood, BG.
- Fissidens julianus* (Mont.) Schimp. On stones in running streams. Clermont, UC; Franklin, BW; Highland, OU; Portage; Seneca; Trumbull.
- Fissidens minutulus* Sull. On moist sandstone, occasionally on wet clay or limestone. Adams; Athens, OU; Clark; Cuyahoga; Delaware; Fairfield; Franklin, BW; Hamilton; Hocking; Jackson; Lake; Meigs; Miami; Ottawa, SL; Perry; Ross, OU; Trumbull; Washington, M.
- Fissidens obtusifolius* Wils. On soil, limestone cliffs and sandstone in moist areas. Adams; Clark; Cuyahoga, C; Erie, SL; Franklin, BW; Lorain, Ob; Ottawa, SL; Trumbull; Washington; Wood, BG. Reported from Hamilton (Lea), Hocking (L & J), Greene (Sull.) and from Pennsylvania border at Smith's Ferry (Jenn.).
- Fissidens osmundioides* Hedw. On soil, moist rocks in shaded areas. Adams, UC; Athens, OU; Belmont; Champaign; Delaware, OW; Erie, Ob; Hocking; Jackson, OU; Lake; Lorain, Ob; Mahoning; Meigs; Ottawa, SL; Ross, OU; Summit, C; Tuscarawas, C; Wood, BG.
- Fissidens subbasiliaris* Hedw. Soil, tree bases, rotten logs, limestone cliffs. Adams; Champaign; Clark; Cuyahoga; Highland, OU; Hocking; Miami; Scioto; Van Wert.
- Fissidens taxifolius* Hedw. Usually on damp soil in shaded areas occasionally on decayed logs, tree bases and wet cliffs. Adams, UC; Athens, OU; Champaign; Clermont, UC; Coshocton; Cuyahoga, C; Delaware, OW; Franklin; Hamilton; Hocking, OU; Jackson, OU; Lake; Miami; Monroe; Morrow; Ottawa; Ross; Scioto; Shelby; Trumbull; Vinton; Williams; Wood. Specimen from Hamilton County in Sullivant herbarium not seen.
- Fissidens viridulus* (Webb & Mohr.) Wahlenb. Moist sandstone cliffs. Adams; Coshocton.

Archidiaceae

- Archidium ohioense* Schimp. In fields, meadows, bare places. One specimen in Sullivant's collection, one specimen from Lesquereux at Ohio State University.

Ditrichaceae

- Bruchia flexuosa* (Sw.) C. Mull. In fields among grasses. Fairfield; Franklin, BW; Ross.
- Bruchia sullivanti* Aust. On bare soil, along paths, in fields among grasses. Belmont; Hocking, OU; Jackson; Lorain, Ob; Lucas; Ross.
- Ceratodon purpureus* (Hedw.) Brid. Widespread, usually in dry situations, cliff edges, trees, paths, rocks, open areas. Ashtabula; Athens, OU; Belmont; Carroll; Clark; Clermont, UC;

Clinton, UC; Columbiana; Coshocton; Cuyahoga, BW; Darke; Defiance; Delaware; Erie, SL; Fairfield; Franklin; Greene; Guernsey; Hamilton, UC; Hardin; Hocking; Holmes; Huron; Jackson, OU; Lake; Lawrence; Licking; Logan; Lorain, Ob; Lucas; Mahoning; Mercer; Miami; Morrow; Ottawa, SL; Paulding; Perry; Pickaway, OU; Portage; Richland; Ross; Sandusky; Seneca; Shelby; Stark, OU; Summit; Trumbull; Washington, M; Williams; Wood, BG.

Ditrichum lineare (Sw.) Lindb. On moist sand or sandstone in open, bare areas. Athens, OU; Clark; Jackson, OU; Pike; Trumbull.

Ditrichum pallidum (Hedw.) Hampe. On bare soil in open areas. Adams, UC; Ashland; Athens, OU; Belmont; Clark; Clermont, UC; Clinton, UC; Coshocton; Delaware, OW; Franklin; Greene; Hamilton, UC; Hocking, OU; Jackson, OU, C; Lake; Lawrence, Ob; Licking; Noble; Pike; Richland; Scioto; Stark; Trumbull; Tuscarawas; Van Wert; Vinton, OU; Washington, M; Williams; Wood, BG.

Ditrichum pusillum (Hedw.) E. G. Britton. Open sandy or clay banks and ditches. Belmont; Clermont, UC; Cuyahoga; Fairfield; Hamilton, UC; Highland; Jackson; Lake; Lucas; Ottawa, SL; Ross; Trumbull; Washington, M.

Trematodon longicollis MX. On gravel bank. Hocking; Pike.

Pleuridium acuminatum Lindb. In open areas, cliff tops, fields, on soil among grasses. Franklin, BW; Hocking; Jackson; Ross. Specimen from Cuyahoga County reported by Henderson, not seen.

Pleuridium subulatum (Hedw.) Lindb. On moist open soil, in fields among grasses. Adams, UC; Athens, OU; Clinton, UC; Cuyahoga; Fairfield; Franklin, BW; Hamilton, UC; Hocking; Jackson; Logan; Lorain, Ob; Pickaway; Pike; Richland; Ross, OU; Scioto; Trumbull; Tuscarawas, C.

Seligeriaceae

Seligeria calcarea (Hedw.) Bry. Eur. On wet limestone rocks. Erie. Reported in Grout as from near Columbus, Ohio. Specimen not seen.

Seligeria campylopoda Kind. On damp shaded rocks. Erie.

Seligeria pusilla (Hedw.) Bry. Eur. Usually on moist vertical stone cliffs. Scioto. Reported from Erie and Logan Counties by Henderson. Specimens not seen.

Dicranaceae

Brothera leana (Sull.) C. Mull. On moist sandstone cliffs, occasionally on rotten logs. Athens, OU; Fairfield; Hocking; Jackson; Pike. Reported as collected by C. Purpus in Auglaize County, December, 1891, specimen not seen, and by T. G. Lea as from Cincinnati, Sull. Mus. All. #172.

Campylopus flexuosus Brid. On sandstone cliff faces. Jackson, OU; Pike.

Campylopus introflexus (Hedw.) Brid. On rock in dry exposed area mixed with *P. piliferum*. Jackson. Only one specimen. Det. R. T. Wareham, fide A. J. Grout.

Dichodontium pellucidum (Hedw.) Schimp. On stones in creek. Ashtabula.

Dicranella heteromalla (Hedw.) Schimp. On moist banks, usually on soil in shaded places. Ashtabula; Athens; Clark; Clermont, UC; Columbiana; Coshocton; Cuyahoga, BW; Delaware, OW; Erie, SL; Fairfield; Franklin; Geauga; Guernsey; Hamilton, UC; Hocking; Jackson, OU, C; Lake; Lawrence; Licking; Lorain, Ob; Mahoning; Monroe; Morrow; Ottawa, SL; Pickaway; Portage, C; Richland; Ross, OU; Scioto; Shelby; Stark; Summit; Trumbull; Tuscarawas, C; Vinton; Wood, BG.

Dicranella rufescens (Smith) Schimp. On moist bare soil. Ashtabula; Coshocton; Cuyahoga; Delaware, OW; Hocking; Lake, Ob; Washington, BW.

Dicranella schreberi (Hedw.) Schimp. On limestone rock. Ross, OU. One specimen, collected by Bartley, fide A. J. Grout.

Dicranella varia (Hedw.) Schimp. Usually on clay banks, occasionally on limestone rocks. Adams; Ashtabula; Athens, OU; Brown, UC; Clark; Clermont, UC; Cuyahoga, BW; Delaware, OW; Erie, SL; Franklin, BW; Geauga; Hamilton, UC; Highland, OU; Lake; Licking; Lorain; Ottawa, SL; Pickaway, OU; Ross, OU; Van Wert; Washington, M.

- Dicranodontium denudatum* (Brid.) E. G. Britton. On rocks, cliffs in shady moist spots. Fairfield; Hocking, OU; Jackson, OU; Madison; Portage.
- Dicranum bonjeani* Denot. On soil, rocks, decaying wood in forested regions. Belmont; Highland; Jackson; Portage.
- Dicranum condensatum* Hedw. Dry wooded areas, cliff tops. Adams, UC; Athens, OU; Hocking; Jackson, OU; Pike; Ross.
- Dicranum drummondii* C. Mull. In wooded areas usually in moist situations. Adams; Ashtabula; Clark; Coshocton; Fairfield; Hocking; Jackson; Pike; Portage; Ross; Scioto; Trumbull; Wood.
- Dicranum flagellare* Hedw. Usually on rotten wood, occasionally on moist rock faces. Adams, UC; Belmont; Champaign; Clark; Coshocton; Cuyahoga; Delaware, OW; Fairfield; Franklin; Hamilton, UC; Jackson, OU; Lake; Lorain, Ob; Montgomery; Pickaway, OU; Portage; Richland; Ross, OU; Trumbull; Washington. Reported recently from Athens County by Robinson.
- Dicranum fulvum* Hook. Exclusively on rocks, usually on cliff faces. Ashtabula; Athens, OU; Belmont; Columbiana; Coshocton; Cuyahoga; Fairfield; Franklin; Guernsey; Highland, OU; Hocking; Holmes, BW, OU; Jackson, OU; Logan; Meigs, OU; Monroe; Ottawa, SL; Portage; Richland; Ross, OU; Scioto; Summit; Trumbull; Vinton.
- Dicranum fuscescens* Turn. Base of trees and decayed wood. Cuyahoga; Delaware, OW; Jackson, OU; Logan; Vinton, OU; Washington, M.
- Dicranum montanum* Hedw. Trees and tree bases, occasionally on stones. Adams; Ashland; Ashtabula, C; Athens, OU; Champaign; Coshocton; Darke; Delaware, OW; Fairfield; Highland; Hocking; Jackson, OU; Portage; Richland; Vinton, OU; Wood, BG.
- Dicranum rugosum* (Hoffm.) Brid. In dry open woods. Adams, UC; Fairfield; Franklin, BW; Highland; Hocking; Jackson, OU; Ross.
- Dicranum scoparium* Hedw. On soil, rocks, decaying wood in forested regions. Adams, UC; Ashland; Ashtabula, C; Athens, OU; Champaign; Clermont, UC; Clinton, UC; Coshocton; Cuyahoga, BW; Delaware, OW; Fairfield; Franklin; Gallia; Guernsey; Hamilton, UC; Hocking; Holmes, BW; Jackson, OU, C; Knox; Lake; Lawrence; Licking; Logan; Lorain, Ob; Lucas; Meigs, OU; Monroe; Morgan, OU; Pickaway; Pike; Richland; Ross, OU; Scioto; Trumbull; Tuscarawas, C; Vinton, OU; Warren, UC; Washington, M; Williams; Wood, BG.
- Dicranum spurium* Hedw. On open, dry areas such as cliff tops, pine woods. Adams, UC; Athens, OU; Fairfield; Franklin; Hocking; Jackson, OU.
- Dicranum viride* (Sull. & Lesq.) Lindb. On tree bases, tree roots and rotten logs. Adams, UC; Ashtabula, C; Brown, UC; Butler, UC; Champaign; Clark; Clermont, UC; Coshocton; Fairfield; Franklin; Hocking; Jackson; Lake; Lorain, Ob; Monroe; Morrow; Portage; Richland; Scioto; Williams.
- Paraleucobryum longifolium* (Hedw.) Loeske. On rocks, rarely on trees. Tuscarawas, C.
- Rhabdoweisia denticulata* (Brid.) Bry. Eur. On sandstone cliffs, occasionally on soil. Athens, OU; Hocking; Jackson, OU; Lawrence; Pike; Portage.

Leucobryaceae

- Leucobryum albidum* (Brid.) Lindb. On soil and rocks in open places. Ashtabula; Athens, OU; Champaign; Hocking; Lawrence. Reported from Sandusky County by Beardslee, specimen not seen.
- Leucobryum glaucum* (Hedw.) Schimp. On soil and rocks, usually in open, dry, woodlands. Adams, UC; Ashtabula, C; Athens, OU; Champaign; Clermont, UC; Clinton, UC; Coshocton; Cuyahoga; Delaware, OW; Fairfield; Franklin; Fulton; Gallia; Geauga; Guernsey; Hamilton, UC; Hocking; Holmes; Jackson; Lake; Licking; Lorain, Ob; Lucas; Mahoning; Meigs, OU; Pike; Portage, OU; Richland; Ross; Scioto; Seneca; Stark; Summit; Trumbull; Vinton; Washington; Wood, BG.

Calymperaceae

- Syrrhopodon texanus* Sull. On moist sandstone cliffs. Hocking; Jackson, OU; Pike.

Encalyptaceae

Encalypta ciliata Hedw. On soil. Ottawa, C.

Encalypta streptocarpa Hedw. On limestone cliffs or soil over limestone. Adams; Greene; Highland, OU.

Buxbaumiaceae

Buxbaumia aphylla Hedw. On dry, open, hillsides, usually on humus. Fairfield; Holmes; Lake.

Diphyscium foliosum (Hedw.) Mohr. On hillsides in wooded areas, usually on soil. Adams, UC; Athens, OU; Belmont; Coshocton; Cuyahoga, BW; Fairfield; Franklin, BW; Geauga; Hocking; Holmes, BW; Jackson; Licking; Monroe; Morgan, OU; Portage; Ross, OU; Scioto.

Pottiaceae

Acaulon rufescens Jaeger. On bare soil in open fields. Athens; Pickaway.

Astomum ludovicianum Sull. On bare open soil. Athens, OU.

Astomum muhlenbergianum (Sw.) Grout. On soil in open fields. Highland; Hocking; Licking; Pickaway; Ross; Scioto. Reported recently from Athens County by Robinson.

Barbula fallax Hedw. On soil in open areas. Highland, OU; Lake; Montgomery; Ottawa, SL; Pickaway, OU; Washington, BW.

Barbula reflexa (Brid.) Brid. On limestone, cliffs, bridge abutments, etc. Adams; Champaign.

Barbula unguiculata Hedw. On bare soil, in pastures, roadside banks, plowed areas. Adams, UC; Athens, OU; Clermont, UC; Cuyahoga, C, BW; Delaware, OW; Erie, SL; Franklin; Geauga; Hamilton, UC; Highland, OU; Hocking; Lake; Licking; Lorain, Ob; Lucas; Montgomery; Morrow; Ottawa, SL; Paulding; Pickaway, OU; Ross, OU; Shelby; Tuscarawas, C; Van Wert; Washington, M; Wood, BG; Wyandot.

Desmatodon cernuus (Huben) Bry. Eur. On calcareous soil. Highland, OU.

Desmatodon obtusifolius (Schwaegr.) Jur. On sandstone cliffs, cement bridge abutments. Adams; Ashtabula; Athens, OU; Clark; Cuyahoga; Fairfield; Highland, OU; Hocking, BW; Jackson, OU; Lake; Licking; Ottawa, SL; Pickaway, OU; Richland; Ross, OU; Summit; Trumbull; Union; Vinton.

Desmatodon porteri James. Face of moist limestone rocks. Adams, UC; Athens, OU; Clark; Franklin; Highland; Ottawa, SL; Scioto; Shelby; Washington, M; Wood, BG.

Didymodon recurvirostris (Hedw.) Jennings. Moist places in the open, usually on rocks. Champaign; Cuyahoga; Delaware, OW; Erie, SL, C; Lorain, Ob; Ottawa, SL, C; Union.

Didymodon rigidulus Hedw. Growing on moist rocks. Ottawa, SL; Wood, BG.

Didymodon tophaceus (Brid.) Jur. In crevices of limestone cliffs. Adams; Shelby; Wood.

Didymodon trifarius (Hedw.) Brid. On calcareous soil or rocks. Ottawa, SL, C.

Eucladium verticillatum (Brid.) Bry. Eur. Wet limestone rocks. Ross.

Gymnostomum aeruginosum Smith. On face of moist limestone or shale cliffs. Adams; Ashland; Athens, OU; Belmont; Clark; Erie, SL; Greene; Hocking; Ottawa, SL; Ross; Shelby; Trumbull.

Gymnostomum calcareum Nees & Hornsch. On moist limestone cliffs, occasionally on sandstone. Adams, UC; Cuyahoga; Erie, SL; Franklin; Highland; Hocking; Lake; Lawrence; Monroe; Ottawa, SL; Ross; Scioto; Shelby; Summit; Trumbull.

Gymnostomum recurvirostrum Hedw. On moist limestone or shale cliffs. Adams, UC; Belmont; Clark; Cuyahoga, BW; Delaware; Erie; Franklin; Greene; Highland, OU; Hocking, BW; Lake; Logan; Lorain; Mahoning; Ottawa, SL; Ross; Shelby; Trumbull.

Hyophila tortula (Schwaegr.) Hampe. On rocks in streams or on moist cliffs. Adams; Ashtabula; Clark, C; Erie, SL; Geauga; Greene; Ottawa, SL.

Phascum cuspidatum Hedw. On moist soil in open fields. Athens, OU; Franklin; Ottawa, SL; Pickaway; Ross.

Pottia truncata (Hedw.) Furn. On soil. Trumbull.

Tortella humilis (Hedw.) Jennings. On soil, rocky banks, around tree bases in wooded areas or in the open. Adams, UC; Athens, OU; Butler, UC; Champaign, UC; Clark; Clermont, UC;

- Coshocton; Erie, SL; Fairfield; Greene; Hamilton, UC; Highland, OU; Hocking, OU; Jackson; Lake; Ottawa, SL, C; Ross; Scioto; Shelby; Vinton, OU; Washington, M; Wood, BG.
- Tortella tortuosa* (Turn.) Limpr. On sandstone and limestone. Highland, OU; Hocking; Ottawa, SL.
- Tortula intermedia* Brid. On calcareous rocks. Ottawa.
- Tortula mucronifolia* Schwaegr. On calcareous rocks. Cuyahoga; Ottawa, SL.
- Tortula pagorum* (Milde) Denot. On trees in open areas. Adams; Pickaway; Ross, OU.
- Tortula papillosa* Wils. On trees in open areas, occasionally on rocks. Adams; Champaign; Clark; Fayette; Franklin; Greene; Guernsey; Licking; Madison; Morrow; Pickaway; Ross; Union.
- Tortula ruralis* (Hedw.) Smith. On dry soil in open areas. Erie; Ottawa, SL, C; Wyandot, OU.
- Trichostomum cylindricum* (Bruch.) C. Mull. Face of moist cliffs. Hocking; Jackson, OU; Ottawa, SL.
- Weisia tortilis* (Schwaegr.) C. Mull. Crevices in limestone cliffs. Adams.
- Weisia viridula* Hedw. On bare soil, usually among grasses. Adams, UC; Athens, OU; Belmont; Clark; Coshocton, BW; Cuyahoga, BW; Delaware, OW; Erie; Fairfield; Franklin; Hamilton, UC; Highland; Hocking; Holmes; Jackson, OU; Lawrence; Licking; Lorain, Ob; Madison; Montgomery; Morgan, OU; Ottawa, SL; Pike; Portage; Richland; Ross; Scioto; Shelby; Union; Vinton.

Grimmiaceae

- Campylostelium saxicola* (Web & Mohr.) Bry. Eur. On exposed sandstone cliffs. Gallia; Pickaway, OU; Scioto; Washington, M.
- Grimmia alpicola* Hedw. On rocks that are occasionally inundated. Ashtabula; Ottawa, SL; Portage; Trumbull.
- Grimmia apocarpa* Hedw. On exposed rock surfaces. Athens, OU; Coshocton; Cuyahoga, C, BW, M; Erie, SL; Franklin, OU; Highland, OU; Hocking; Lorain, Ob; Ottawa, C, SL; Paulding; Pickaway, OU; Ross, OU; Trumbull; Van Wert; Washington, M; Wood, BG. Variety *conferta* reported from Lake County by Beardslee, specimen not seen.
- Grimmia olneyi* Sull. On exposed rocks. Vinton, OU.
- Grimmia pilifera* Beauv. On dry exposed rocks. Hocking; Jackson; Lawrence; Scioto. Reported by Jennings from Lake County, specimen not seen.
- Grimmia pulvinata* (Hedw.) Smith. On dry rocks. Ottawa, SL.
- Hedwigia ciliata* On rocks in many different situations. Athens, OU; Belmont; Butler; Clark; Coshocton; Cuyahoga, BW; Darke; Delaware; Fairfield; Franklin, OU; Geauga; Hocking; Holmes; Jackson, OU; Lake; Lawrence; Lorain, Ob; Meigs; Monroe, BW; Morgan, OU; Ottawa, SL; Pickaway, OU; Portage; Richland; Ross, OU; Scioto; Shelby; Summit; Vinton; Washington, M; Wood, BG.
- Ptychomitrium incurvum* (Muhlenb.) Sull. On exposed sandstone rocks. Athens, OU; Hocking; Jackson, OU; Pickaway; Ross, OU.
- Rhacomitrium heterostichum* (Hedw.) Brid. On rocks in moist places. Fairfield; Hocking, Pike.

Ephemeraceae

- Ephemerum cohaerens* (Hedw.) Hampe. On soil in swampy area. Ross.
- Ephemerum crassinervium* (Schwaegr.) C. Mull. On soil in open fields. Adams; Franklin; Gallia; Hamilton, UC; Hocking; Jackson.
- Ephemerum serratum* (Hedw.) Hampe. On soil in open fields. Cuyahoga; Hocking; Jackson; Ross.
- Ephemerum spinulosum* Schimp. On soil in wet meadows. Athens, OU; Hocking; Ross.
- Nanomitrium austinii* (Sull.) Lindb. On moist bare soil. Jackson; Pike.
- Nanomitrium synoicum* (James) Lindb. On moist, bare soil. Jackson.

Disceiaceae

- Diselium nudum* (Dicks.) Brid. On exposed clay banks. Cuyahoga; Delaware; Holmes; Knox, OU; Lake, Ob; Lorain, Ob.

Funariaceae

- Aphanorhegma patens* (Hedw.) Lindb. On soil in fields, river banks, paths. Fairfield; Franklin; Licking; Pickaway; Ross.
- Aphanorhegma serratum* (Hook & Wils.) Sull. On soil stream banks, old fields. Athens, OU; Brown, UC; Clermont, UC; Franklin, BW; Gallia; Hamilton, UC; Highland; Hocking; Jackson; Licking; Meigs, OU; Pickaway; Richland; Ross.
- Funaria flavicans* MX. On moist soil. Adams, UC; Athens, OU; Coshocton; Fairfield; Franklin; Hamilton, UC; Highland, OU; Hocking; Jackson, OU; Lawrence; Pike.
- Funaria hygrometrica* Hedw. Moist soil, burned over areas, especially old ash heaps and cinder piles. Adams, UC; Ashtabula; Athens, OU; Butler; Champaign, UC; Clark; Coshocton; Cuyahoga; Erie, SL, Ob; Fairfield; Franklin; Fulton; Gallia; Geauga; Greene; Hamilton, UC; Lake; Licking; Logan; Lorain, Ob; Lucas; Muskingum; Ottawa, SL, Ob; Perry; Pickaway; Pike; Portage; Preble; Richland; Ross, OU; Shelby; Stark; Summit; Trumbull; Union; Washington, M; Wood, BG.
- Physcomitrium immersum* Sull. On moist soil. Cuyahoga; Geauga; Lake. Reported from southern Ohio by Lea in Lesquereux & James and Sull. Icones.
- Physcomitrium turbinatum* (MX.) Brid. On bare soil in open fields. Adams; Ashtabula, C; Athens, OU; Belmont; Champaign; Clark; Clermont, UC; Clinton, UC; Columbiana; Coshocton; Cuyahoga; Erie, SL; Franklin; Hamilton, UC; Hardin; Hocking; Jackson, OU; Lake; Lawrence; Logan; Lorain, Ob; Lucas; Meigs, OU; Montgomery; Morgan, OU; Ottawa, SL, C; Pickaway; Pike; Richland; Scioto; Shelby; Trumbull; Tuscarawas, C; Washington, M; Wood, BG; Wyandot.

Schistostegaceae

- Schistostega pennata* (Hedw.) Hook & Tayl. Soil or rocks in dimly lighted areas such as roofs or floors of caves. Geauga. Reported from Portage County by Claassen, specimen not seen.

Orthotrichaceae

- Amphidium californicum* (Hampe) Broth. Face of wet cliffs, ceiling of caves. Hocking, OU; Jackson.
- Amphidium lapponicum* (Hedw.) Schimp. Face of wet cliffs. Hocking, OU; Jackson.
- Amphidium mougeotii* (Bry. Eur.) Schimp. Moist, shaded cliff faces. Hocking; Jackson, OU.
- Drummondia prorepens* (Hedw.) Jennings. On bark of trees. Adams; Athens, OU; Auglaize, BW; Clark; Cuyahoga; Fairfield; Franklin; Greene; Hamilton, UC; Highland, OU; Hocking; Lake; Lorain, Ob; Madison; Monroe, BW; Perry; Pickaway, OU; Ross; Scioto; Shelby.
- Orthotrichum anomalum* Hedw. On limestone. Ottawa, SL, C; Ross.
- Orthotrichum elegans* Hook & Grev. On trees. Highland; Lake.
- Orthotrichum garrettii* Grout & Flowers. On granite boulders. Franklin.
- Orthotrichum lescurii* Aust. On limestone or granite rocks. Pickaway; Shelby.
- Orthotrichum obtusifolium* Brid. On trees. Lake; Sandusky.
- Orthotrichum ohioense* Sull. & Lesq. On trees. Adams; Delaware; Franklin, BW; Greene; Highland; Hocking; Jackson; Lake; Pickaway; Ross; Scioto; Vinton; Washington, M; Wood, BG.
- Orthotrichum pumillum* Dicks. On trees. Champaign; Clark; Delaware; Franklin; Hardin; Hocking; Lake; Licking; Logan; Madison; Morrow; Pickaway; Richland; Ross; Sandusky; Shelby; Union; Vinton; Washington, M; Wood, BG.
- Orthotrichum pusillum* Mitt. On trees. Madison; Scioto.
- Orthotrichum stellatum* Brid. On trees. Adams; Athens, OU; Clark; Fairfield; Franklin; Highland, OU; Hocking; Jackson, OU; Lake; Licking; Logan; Miami; Morgan; Morrow; Pickaway, OU; Ross; Scioto; Vinton, OU.
- Orthotrichum strangulatum* Schwaegr. On trees. Adams; Athens, OU; Delaware; Franklin, BW, OU; Greene; Highland, OU; Pickaway; Ross; Scioto; Shelby; Wood, BG.
- Orthotrichum sordidum* Common on trees. Specimen from Lesquereux, no data given.
- Ulota americana* (Beauv.) Limpr. On sandstone boulders. Cuyahoga; Hocking; Holmes, SL; Jackson, OU; Lake.

Ulota crispa (Hedw.) Brid. On trees. Ashtabula; Athens, OU; Cuyahoga; Fairfield; Greene; Highland; Hocking; Jackson, OU; Lake; Lorain, Ob; Monroe; Pickaway; Ross; Scioto; Vinton; Washington, M.

Ulota ludwigii Brid. On trees in the open. Lake.

Zygodon viridissimus (Dicks.) R. Br. Crevices of moist sandstone rock. Jackson.

Timmiaceae

Timmia megapolitana Hedw. On moist soil. Clark; Delaware; Franklin; Hocking; Pickaway, OU.

Aulacomniaceae

Aulacomnium heterostichum (Hedw.) Bry. Eur. On soil and humus in moist woodlands, stream banks and hillsides. Adams, UC; Allen; Ashtabula, C; Athens, OU; Champaign; Clark; Coshocton; Delaware, OW; Fairfield; Franklin; Fulton; Highland, OU; Hocking; Jackson, OU; Lake; Lawrence; Licking; Lorain, Ob; Lucas; Meigs; Monroe; Portage; Ross, OU; Scioto; Shelby; Summit; Trumbull; Vinton; Washington, M; Wood, BG.

Aulacomnium palustre (Web & Mohr.) Schwaegr. In swamps and bogs. Adams, UC; Ashtabula, C; Athens, OU; Champaign; Cuyahoga; Delaware, OW; Gallia; Geauga; Hocking; Jackson, OU; Lake, OU; Licking, OU; Lorain, Ob; Morrow; Ottawa, SL; Pickaway, OU; Portage, OU; Richland; Stark; Summit, C; Trumbull; Tuscarawas, C; Warren, UC; Williams; Wood, BG.

Bartramiaceae

Bartramia pomiformis Hedw. On soil and rocks of cliff faces and steep banks in moist situations. Adams, UC; Athens, OU; Belmont; Champaign; Clark; Coshocton; Cuyahoga, BW; Delaware, OW; Fairfield, BW; Franklin; Highland; Hocking; Holmes; Jackson, OU; Lake; Lawrence; Lorain, Ob; Lucas; Meigs; Monroe; Noble; Pickaway; Pike; Portage; Ross, OU; Scioto; Tuscarawas, C; Vinton; Washington, BW, M.

Philonotis caespitosa Wils. On soil and wet rocks in moist shaded situations. Jackson; Licking.

Philonotis fontana (Hedw.) Brid. On wet shale or sandstone. Ashtabula; Cuyahoga; Fairfield; Geauga; Hamilton, UC; Hocking; Jackson, OU; Lake; Licking; Lorain, Ob; Mahoning; Wood, BG.

Philonotis longiseta (Rich.) E. G. Britton. On moist soil near streams. Athens, OU; Hocking.

Philonotis marchica (Willd.) Brid. In wet situations, swamps, sandstone cliffs. Champaign; Hocking, BW; Trumbull. Reported from Lake County by Beardslee, specimen not seen.

Meesiaceae

Meesia longiseta Hedw. Deep swamps and sphagnum bogs. One specimen from Lesquereux with no data. Also #161 in Musc. Bor. Amer. Ed. I, 1856.

Bryaceae

Bryum argenteum (L.) Hedw. On soil, rocks, in dry situations such as sidewalks, bricks, ash piles. Athens, OU; Clark; Coshocton; Cuyahoga, C; Delaware, OW; Erie, SL; Fairfield; Franklin; Hamilton, UC, OU; Hocking; Jackson; Lake; Lorain, Ob; Morgan, OU; Ottawa, SL, C; Pickaway; Pike; Portage; Shelby; Summit, C; Trumbull; Tuscarawas, C; Union; Van Wert; Washington, M; Wood, BG.

Bryum bicolor Dicks. On sandy soil in moist situations. Athens, OU.

Bryum caespiticum (L.) Hedw. On soil, in paths and bare areas. Adams; Ashtabula, C; Athens, OU; Champaign, UC; Clark; Clinton, UC; Cuyahoga, BW; Erie, SL, C; Fairfield; Franklin; Hardin; Highland, OU; Hocking; Lake; Lorain, Ob; Lucas, Ob; Mahoning; Mercer; Ottawa, SL, C; Pickaway, OU; Shelby; Summit; Union; Williams; Wood, BG.

Bryum capillare (L.) Hedw. On stones, soil, tree bases, humus. Athens, OU; Coshocton; Cuyahoga, BW; Erie, SL; Franklin; Hardin; Highland; Hocking; Jackson, OU; Miami; Morgan, OU; Perry; Pickaway; Portage; Ross, OU; Scioto; Vinton, OU; Washington, M; Williams.

- Bryum cuspidatum* (Bry. Eur.) Schimp. On soil or rocks in wet places. Adams, UC; Athens; Carroll; Champaign, UC; Clark; Columbiana; Cuyahoga; Erie, SL; Franklin; Greene; Jackson; Lake; Licking; Lorain, Ob; Monroe; Ottawa, SL; Ross; Stark; Washington, M; Wood, BG.
- Bryum pseudo triquetrum* (Hedw.) Schwaegr. In wet swampy places on rocks and soil. Athens, OU; Brown, UC; Butler, UC; Carroll; Champaign, UC; Clark; Cuyahoga, BW; Erie, SL; Franklin, BW; Hamilton, UC; Hancock; Highland; Hocking; Jackson, OU; Lorain, Ob; Mahoning; Ottawa, SL; Portage; Richland; Ross, OU; Washington, M.
- Bryum tortifolium* Funck. In crevices in moist limestone. Shelby.
- Bryum uliginosum* (Brid.) Bry. Eur. Clark; Lake; Summit. Reported from Lake County by Beardslee, no specimen seen.
- Leptobryum pyriforme* (Hedw.) Schimp. Soil, humus, a "weed" in greenhouses. Adams; Ashland; Athens, OU; Clark; Cuyahoga, BW, C; Erie, SL; Franklin; Hardin; Hocking; Jackson, OU; Lake; Lorain, Ob; Ottawa, C. SL; Pickaway; Ross, OU; Shelby; Summit; Washington, M.
- Pohlia annotina* (Hedw.) Loeske. On moist sandstone. Hocking; Jackson; Trumbull.
- Pohlia elongata* Hedw. On humus over rocks. Columbiana; Geauga. Reported by Claassen for Lake County, not seen.
- Pohlia nutans* (Hedw.) Lindb. On soil, humus, rocks in various situations. Athens, OU; Belmont; Clinton, UC; Columbiana; Coshocton; Cuyahoga; Delaware, OW; Fairfield; Franklin; Hocking; Jackson, OU; Lake; Logan; Lorain, Ob; Ottawa, SL; Pickaway, OU; Portage; Richland; Ross, OU; Summit, BW; Trumbull; Vinton; Wood, BG. Reported from Licking County by Claassen, not seen.
- Pohlia wahlenbergii* (Web & Mohr.) Andrews. Moist ledges, swamps, bogs. Adams; Ashtabula; Athens, OU; Butler; Champaign; Clark; Clermont, UC; Coshocton; Cuyahoga; Fairfield; Geauga; Hamilton, UC; Hocking; Jackson, OU; Lake; Lawrence; Meigs; Ottawa, SL; Ross, OU; Shelby; Trumbull; Wood, BG.
- Rhodobryum roseum* (Bry. Eur.) Limpr. In shaded places, on moist soil, humus, decaying logs. Ashtabula, C; Athens, OU; Champaign; Clark; Coshocton; Cuyahoga; Delaware, OW; Fairfield; Franklin; Geauga; Hamilton, UC; Henry; Highland, OU; Hocking; Lake; Lorain, Ob; Lucas; Meigs; Monroe, BW; Ottawa, SL; Perry; Pickaway; Vinton, OU; Warren, UC; Wood, BG. Reported from Summit County by Claassen, not seen.

Mniaceae

- Mnium affine* Bland. Soil, stones, logs, humus in all varieties of moisture and light conditions. Adams, UC; Ashtabula, C; Athens, OU; Auglaize; Belmont; Brown, UC; Carroll; Champaign; Clark; Clermont, UC; Coshocton; Cuyahoga; Delaware, OW; Erie, Ob; Fairfield; Franklin; Gallia; Hamilton, UC; Hocking; Jackson, OU, C; Lake; Lawrence; Licking; Lorain, Ob; Perry; Pickaway; Portage; Richland; Ross, OU; Scioto; Trumbull; Vinton; Warren, UC; Washington; Wayne; Wood, BG.
- Mnium cuspidatum* Hedw. On soil and humus, in woods, very common. Adams, UC; Athens, OU; Ashtabula; Auglaize, BW; Belmont; Brown, UC; Carroll; Champaign; Clark, C; Clermont, UC; Clinton, UC; Columbiana; Coshocton; Crawford; Cuyahoga, BW, C; Delaware, OW; Erie; Fairfield; Franklin, OU; Greene; Guernsey; Hamilton, UC; Hardin; Highland, UC, OU; Hocking; Holmes; Jackson, OU; Lake; Licking; Logan; Lorain; Madison; Meigs, OU; Mercer; Miami; Monroe; Montgomery; Morgan, OU; Morrow; Ottawa, C; Pickaway, OU; Richland; Scioto; Seneca; Shelby; Stark; Summit, C; Trumbull; Tuscarawas, C; Union; Van Wert; Vinton; Warren; Washington, BW; Williams; Wood, BG; Wyandot. Reported from Portage County by Claassen, not seen.
- Mnium drummondii* Bry. Eur. On wet rocks. Jackson, OU.
- Mnium hornum* Hedw. On soil at base of sandstone cliffs. Hocking; Jackson, OU, C; Lake; Portage.
- Mnium longirostrum* Brid. In moist places on soil and rocks, usually in woods. Adams; Clark; Fairfield; Franklin; Lake; Ottawa; Wood.
- Mnium medium* Bry. Eur. On wet soil in wooded areas. Ashtabula, C; Hamilton, UC; Lorain, Ob.

- Mnium punctatum* Hedw. On rocks, logs, soil in moist shaded situations. Ashtabula; Athens, OU; Belmont; Coshocton; Cuyahoga; Erie, SL; Fairfield, UC; Hocking; Jackson, OU; Meigs, OU; Monroe; Ottawa, SL; Richland; Ross, OU; Scioto; Summit, C; Trumbull; Wayne.
- Mnium serratum* Brid. On wet rocks, usually in shaded areas. Adams; Ashtabula; Athens; Hocking; Jackson; Monroe; Ross; Trumbull.
- Mnium spinulosum* Bry. Eur. On moist sandstone. Belmont; Lake; Monroe; Trumbull.
- Mnium stellare* Hedw. On rock, bark, decayed logs in forested areas. Butler, UC; Clark; Franklin; Hocking; Lorain, Ob; Monroe.

Hypnaceae

- Amblystegiella confervoides* (Brid.) Loeske. On limestone rocks. Adams; Clark; Delaware; Greene; Lorain, Ob; Ottawa, SL; Washington, M; Wood, BG.
- Amblystegiella subtilis* (Hedw.) Loeske. On tree bases. Franklin, BW; Hocking; Monroe; Wood, BG.
- Amblystegium compactum* (C. Mull.) Austin. On limestone and shale at the base of cliffs in either moist or dry conditions. Belmont; Highland; Ross, OU; Shelby. Reported from Cuyahoga County by Claassen, not seen.
- Amblystegium juratzkanum* Schimp. On soil, rotten wood, sandstone and limestone in slightly to very moist situations. Ashland; Champaign; Clark; Delaware, OW; Erie, Ob; Franklin, BW; Geauga; Lorain, Ob; Ottawa; Paulding; Portage; Richland; Trumbull; Wood, BG; Wyandot.
- Amblystegium serpens* (Hedw.) Bry. Eur. Usually on rotten logs but also on sandstone, dolomite and tree bark in shaded moist areas. Adams; Ashtabula, C; Athens, OU; Coshocton; Cuyahoga; Delaware, OW; Erie, SL; Franklin, S, BW; Highland, OU; Lorain, Ob; Mercer; Montgomery; Ottawa, SL; Richland; Seneca; Tuscarawas, C; Union; Vinton; Wood, BG. Reported by Claassen from Lake, Portage and Summit Counties, not seen.
- Amblystegium varium* (Hedw.) Linb. On almost every type of substrate and in a variety of habitats. Adams; Athens, OU; Belmont; Clark; Columbiana; Coshocton; Cuyahoga, BW; Defiance; Delaware, OW; Erie; Fairfield; Franklin, OU; Fulton; Greene; Hardin; Highland, OU; Hocking; Jackson, OU; Lawrence; Licking; Logan; Lorain; Madison; Mahoning; Meigs; Mercer; Miami; Monroe; Montgomery; Morgan, OU; Morrow; Ottawa, BW; Paulding; Pickaway, OU; Richland; Ross, OU; Scioto; Shelby; Stark; Trumbull; Tuscarawas; Union; Van Wert; Washington; Wayne; Williams; Wood, BG; Wyandot.
- Bryacethecium acutum* (Mitt.) Sull. In marshes or on stones in creeks. Ashtabula, C; Champaign; Clark; Coshocton; Holmes; Lake; Ottawa, SL; Pickaway; Ross, OU; Scioto; Van Wert.
- Bracythecium campestre* Bry. Eur. Among grasses on soil or stones, usually in moist areas. Athens; Franklin; Portage; Ross; Tuscarawas.
- Bracythecium digastrum* C. Mull & Kindb. On rocks. Ottawa, SL.
- Bracythecium flagellare* (Hedw.) Jennings. On soil or humus in moist wooded areas often on rocks in streams. Ashland; Ashtabula; Belmont; Coshocton; Fairfield; Hocking; Jackson; Monroe; Portage; Scioto; Trumbull.
- Bracythecium flexicaule* Ren. & Card. On rocks or soil on moist banks. Athens, OU; Franklin; Portage; Ross; Tuscarawas.
- Bracythecium oxycladon* (Brid.) Jaeger. & Sauerb. Base of trees, moist rocks, occasionally on soil. Adams; Athens, OU; Auglaize; Belmont; Clark, C; Coshocton; Fairfield; Franklin; Geauga; Greene; Guernsey; Highland, OU; Hocking; Holmes; Jackson; Lake; Licking; Mercer; Monroe; Ottawa, SL, C; Pickaway, OU; Richland; Scioto; Shelby; Tuscarawas, C; Wood, BG.
- Bracythecium rivulare* Bry. Eur. In wet areas on rocks or soil, swamps, edge of streams or springs. Athens, OU; Belmont; Clark; Coshocton; Fairfield; Greene, C; Highland, OU; Hocking; Jackson, OU; Lake; Licking; Meigs, OU; Monroe; Morgan, OU; Ottawa, SL; Pickaway; Portage; Ross, OU; Shelby; Trumbull; Washington, M.
- Bracythecium rutabulum* (Hedw.) Bry. Eur. On soil, humus, rocks in a variety of situations. Ashtabula, C; Athens, OU; Belmont; Champaign; Clark; Coshocton; Cuyahoga; Fairfield;

Hardin; Highland, OU; Hocking; Jackson, OU; Lorain, Ob; Lucas; Mahoning; Mercer; Monroe; Morgan, OU; Ottawa, C; Pickaway; Portage; Ross; Shelby; Stark; Trumbull; Wood, BG.

Brachythecium salebrosum (Web & Mohr.) Bry. Eur. Base of trees, rotten logs, soil, humus and rocks in a variety of situations. Ashland; Athens, OU; Auglaize; Belmont; Columbiana; Cuyahoga, BW; Defiance; Fulton; Hardin; Highland, OU; Holmes; Lorain, Ob; Monroe; Ottawa, SL; Portage; Ross; Scioto; Stark; Summit; Tuscarawas; Van Wert; Washington, M; Wayne, C; Wood.

Brachythecium starkei (Brid.) Bry. Eur. Decaying logs. Athens, OU. Specimen at Carnegie Museum from Greene County det. by Sterki, unable to confirm or deny.

Brotherella delicatula (James) Fleisch. On rotten wood. Ashtabula; Lake.

Brotherella recurvans (MX) Fleisch. On rotten wood, humus, soil, rocks in moist, shaded areas. Ashland; Ashtabula; Athens, OU; Belmont; Coshocton; Cuyahoga; Hocking; Jackson, OU; Ross, OU; Trumbull; Washington, M.

Brotherella tenuirostris (Schimp.) Broth. On rotten logs or tree bases. Ashtabula; Champaign; Clark; Hocking; Jackson; Lake.

Bryhnia graminicolor (Brid.) Grout. On moist rock ledges, occasionally on soil in shaded areas. Adams; Ashtabula, C; Athens, OU; Auglaize; Clermont, UC; Coshocton; Franklin; Highland; Hocking; Jackson, OU; Lorain, Ob; Ottawa, SL, C; Ross, OU; Shelby; Van Wert; Wood, BG.

Bryhnia novae-angliae (Sull. & Lesq.) Grout. On rocks and soil near wet places, frequently on sandstone in southern Ohio. Ashtabula; Athens; Columbiana; Fairfield; Hocking; Jackson C; Lake; Monroe; Ottawa, SL; Richland; Ross, OU; Trumbull.

Calliergonella cuspidata (Brid.) Loeske. On soil in wet shaded areas. Athens, OU; Ross, OU. Reported from Cuyahoga by Claassen, not seen.

Calliergonella schreberi (Bry. Eur.) Grout. On soil in shaded areas, dry or moist situations. Adams, UC; Athens, OU; Champaign; Cuyahoga; Delaware; Highland, OU; Hocking; Jackson, OU; Lake; Lorain, Ob; Portage; Richland; Ross, OU; Trumbull.

Calliergon cordifolium (Hedw.) Kind. In bogs. Jackson, OU; Lake; Richland; Sandusky, C.

Calliergon trifarium (Web & Mohr.) Kindb. Reported by Lesquereux, Sullivant and Beardslee—the only specimen is in Ohio State University herbarium, a fossil from a peat bog.

Campylium chrysophyllum (Brid.) Bryhn. On soil, stones or humus in a wide variety of situations. Adams, UC; Athens, OU; Belmont; Clark; Darke; Defiance; Delaware, OW; Franklin; Geauga; Guernsey; Highland, OU; Hocking; Jackson, OU; Lake; Lorain, Ob; Monroe; Ottawa, SL; Pickaway, OU; Richland; Ross; Scioto; Shelby; Tuscarawas, C; Van Wert; Williams; Wood, BG.

Campylium hispidulum (Brid.) Mitt. Commonly on rotten logs, also on soil and humus at and on base of trees. Adams; Ashland; Ashtabula; Athens, OU; Clark; Coshocton; Fairfield; Franklin; Fulton; Greene; Hocking; Jackson; Lake; Logan; Montgomery; Morgan, OU; Ottawa, SL; Ross; Scioto; Shelby; Washington, M; Wood, BG. Reported by Claassen from Cuyahoga and Portage Counties, not seen.

Campylium polygamum (Bry. Eur.) Bryhn. Wet grassy areas. Erie, SL; Ottawa, SL.

Campylium radicale (Beauv.) Grout. In swamps on soil. Hardin; Lake; Lawrence; Ottawa, SL; Richland; Scioto; Washington, M; Williams.

Campylium stellatum (Hedw.) Lange and C. Jens. In swamps and bogs. Champaign; Erie, SL; Highland; Lorain, Ob; Ottawa, SL, C; Ross, OU; Stark, C.

Chamberlainia acuminata Hedw. Grout. On soil, decaying wood, occasionally on rocks in shaded areas. Allen, BW; Ashtabula, C; Clark; Coshocton; Cuyahoga; Delaware, OW; Franklin, BW; Hamilton, UC; Hocking; Lorain, Ob; Madison; Monroe, BW; Morrow; Ottawa, SL, C; Perry; Pickaway; Summit, C; Trumbull; Van Wert; Wood, BG.

Chamberlainia cyrtophylla (Kindb.) Grout. Roots of trees and old logs. Franklin; Greene, C; Ottawa, SL; Trumbull.

Cirriphyllum boscii (Schwaegr.) Grout. On soil, rock, humus in a variety of moisture and light conditions. Adams, UC; Ashtabula; Athens, OU; Champaign; Clark; Coshocton; Cuyahoga; BW, C; Fairfield; Franklin; Gallia; Geauga; Hamilton, UC; Highland, UC; Hocking; Jackson, OU, C; Lake; Lawrence, Ob; Meigs; Monroe, BW; Morgan, OU; Muskingum; Ottawa, SL, C; Richland; Scioto; Tuscarawas, C; Washington, M.

- Cirriphyllum piliferum* (Hedw.) Grout. This one specimen was collected in 1877 in Cedar Swamp. No further data. Champaign. Reported from Cuyahoga by Claassen; Lake County by Beardslee; specimens not seen.
- Climacium americanum* Brid. On soil or humus or rotting logs in shaded woods. Adams, UC; Athens, OU; Auglaize; Belmont; Brown; Champaign; Clark, C; Clermont, UC; Clinton; Coshocton; Crawford; Cuyahoga; Delaware, OW; Franklin; Geauga; Guernsey; Hancock; Highland; Hocking; Jackson, OU; Lake; Lorain, Ob; Lucas; Meigs, OU; Monroe; Montgomery; Morgan; Ottawa, SL; Portage; Richland; Ross, OU; Scioto; Seneca; Shelby; Summit; Trumbull; Tuscarawas, C; Van Wert; Vinton; Warren, UC; Washington, M; Wayne; Williams; Wood, BG.
- Climacium dendroides* (Hedw.) Web & Mohr. Wet ground, along stream banks in shaded areas. Adams, UC.
- Climacium kindbergii* (Ren. & Card.) Grout. In wet situations, cliff tops, rotten logs, humus, stream banks. Adams, UC; Ashtabula, C; Brown, UC; Clermont, UC; Crawford; Delaware; Franklin; Gallia; Henry; Hocking; Jackson, OU; Lake; Licking; Lorain, Ob; Morrow; Richland; Ross; Scioto; Shelby; Stark; Summit, C; Trumbull; Tuscarawas, C; Williams.
- Cratoneuron commutatum* (Hedw.) Roth. On wet limestone. Ross.
- Cratoneuron filicinum* (Hedw.) Roth. In swamps and bogs. Champaign; Greene, C; Highland; Jackson, OU; Lake; Pickaway, OU; Ross, OU; Wyandot.
- Drepanocladus aduncus* (Hedw.) Warnst. Wet places, especially bogs and swamps. Clark; Delaware, OW; Erie, SL; Franklin; Jackson; Lake; Logan; Lucas; Ottawa, SL; Pickaway; Ross, OU; Sandusky, C; Shelby; Union; Wood, BG.
- Drepanocladus exannulatus* (Gumb.) Warnst. In swamps or flowing streams. Adams; Jackson; Meigs.
- Drepanocladus fluitans* (Hedw.) Warnst. In very wet situations, floating or on rocks. Delaware, OW; Lake.
- Drepanocladus revolvens* (C. Mull) Warnst. In alkaline bogs. Champaign; Delaware, OW; Lorain, Ob; Ross, Stark.
- Entodon brevisetus* (Hook. & Wils.) Jaeger & Sauerb. On base of trees, limestone rocks and soil. Champaign; Clark; Delaware, OW. Reported from Cuyahoga County by Claassen, not seen.
- Entodon cladorrhizans* (Hedw.) C. Mull. Commonly on fallen trees, occasionally on soil, in shaded areas. Adams, UC; Ashtabula; Athens, OU; Belmont; Clark; Coshocton; Cuyahoga, C; Delaware, OW; Erie; Franklin, BW; Guernsey; Hocking, OU; Jackson; Lake; Lorain, Ob; Medina; Morrow; Ottawa, SL; Pickaway, OU; Portage; Richland; Ross; Shelby; Summit, C; Tuscarawas, C; Union; Washington, M; Wood, BG.
- Entodon compressus* (Hedw.) C. Mull. On soil and rotting logs in shade. Ashtabula, C; Cuyahoga, BW; Guernsey, C. Reported from Franklin County by Lesquereux, not seen.
- Entodon seductrix* (Hedw.) C. Mull. On decaying wood, tree bases, moist soil and stones, often in dry situations. Adams; Athens, OU; Auglaize; Belmont; Butler; Champaign; Clark, C; Coshocton; Cuyahoga; Delaware, OW; Erie; Fairfield; Fayette, OU; Franklin, BW; Greene; Hamilton, UC, BW; Hardin; Henry; Hocking, OU; Jackson, OU, C; Lake; Licking; Logan; Lorain, Ob; Madison; Meigs; Morrow; Pickaway, OU; Portage; Richland; Ross, OU; Scioto; Shelby; Summit, C; Trumbull; Van Wert; Vinton, OU; Washington, BW, M; Wayne, Ob; Wood.
- Eurhynchium hians* (Hedw.) Jaeger & Sauerb. On soil, wood and rocks in shaded areas. Athens, OU; Champaign; Coshocton; Cuyahoga; Erie, Ob; Fairfield; Franklin; Highland; Hocking; Jackson, OU; Lake; Miami; Monroe; Ottawa, SL; Paulding; Perry; Pickaway; Ross, OU; Shelby; Summit, C; Trumbull; Tuscarawas, C; Williams; Wood, BG.
- Eurhynchium rusciforme* (Neck.) Milde. In streams, on dripping rocks or other continuously moist areas. Cuyahoga, BW; Hocking; Jackson, OU; Monroe; Ottawa, SL; Portage; Washington, M. Reported from Summit and Geauga Counties by Claassen, not seen.
- Eurhynchium serrulatum* (Hedw.) Kindb. On rocks, tree bases, frequently on soil in forested regions. Ashtabula; Athens; Clark; Clermont, UC; Columbiana; Coshocton; Cuyahoga; Darke; Delaware, OW; Fairfield; Franklin, BW; Hocking; Jackson, OU; Lake; Licking;

- Lorain, Ob; Meigs; Miami; Monroe; Ottawa, SL; Pickaway, OU; Pike; Portage; Richland; Ross, OU; Scioto; Summit; Trumbull; Union; Vinton; Washington, BW, M; Wayne, M; Wood, BG; Wyandot.
- Eurhynchium strigosum* (Hoffm.) Bry. Eur. On soil or tree bases. Athens, OU; Cuyahoga, BW; Delaware, OW; Fairfield; Geauga; Hamilton; Jackson, OU; Lake; Lorain, Ob; Paulding; Pickaway; Ross, OU; Union; Van Wert.
- Heterophyllum haldanianum* (Grev.) Kind. In woods on humus and rotting wood. Ashland; Ashtabula, C; Athens, OU; Coshocton; Cuyahoga, BW; Delaware, OW; Fairfield, UC; Hocking; Jackson, OU; Lake, Ob; Lorain, Ob; Morrow; Perry; Stark; Summit, C; Trumbull; Tuscarawas, C; Wood, BG.
- Homalotheciella fabrofolia* (Grout) Broth. On tree bark. Miami; Pickaway.
- Homalotheciella subcapillata* (Hedw.) Card. On bark of trees and decaying wood. Belmont; Champaign; Clark; Greene; Highland; Jackson; Pickaway; Ross; Scioto; Van Wert. Reported from Cuyahoga County by Claassen; specimen not seen.
- Homomallium adnatum* (Hedw.) Broth. On moist rocks, rotten wood and bark. Ashtabula; Belmont; Champaign; Delaware, OW; Franklin, S, OU; Highland; Hocking; Jackson, OU; Ottawa, C; Paulding; Pickaway; Portage; Richland; Ross, OU; Scioto; Shelby; Washington, M; Wood, BG; Wyandot. Reported from Cuyahoga and Lake Counties; not seen. Recently reported from Athens County by Robinson.
- Hygroamblystegium fluviatile* (Hedw.) Loeske. In springs, wet dripping cliffs and streams. Athens; Coshocton; Cuyahoga; Erie, SL; Greene; Highland, OU; Hocking; Jackson; Monroe; Ottawa, SL, C; Washington, M.
- Hygroamblystegium irriguum* (Wils.) Loeske. On rocks in streams or on soil at edge of streams. Adams; Ashland; Athens, OU; Belmont; Carroll; Champaign; Clark; Coshocton; Delaware, OW; Erie, SL, C; Fairfield; Franklin; Geauga; Greene, C; Hamilton, UC; Hocking; Huron, Ob; Jackson; Lake; Logan; Lorain; Monroe; Ottawa, SL, C; Pickaway; Richland; Ross; Shelby; Trumbull; Union; Washington, M.
- Hygroamblystegium orthocladon* (Beauv.) Grout. In running water on stones or soil. Adams; Athens, OU; Belmont; Clark; Coshocton; Delaware; Fairfield, BW; Franklin; Highland, OU; Hocking; Jackson; Logan; Monroe; Ottawa; Pickaway; Richland; Ross; Shelby; Trumbull; Union; Vinton.
- Hygrohypnum closteri* (Aust.) Grout. On rocks in streams. Belmont.
- Hygrohypnum eugyrium* (Bry. Eur.) Loeske. On rocks in streams. Geauga; Ottawa, SL.
- Hygrohypnum palustre* (Hedw.) Loeske. On rocks in streams. Adams; Erie; Ottawa, C, SL.
- Hylocomnium brevirostre* (Beauv.) Bry. Eur. Shady creek banks on stones and soil. Ashland; Athens, OU; Belmont; Hocking; Jackson, OU; Lake; Monroe. Reported from Cuyahoga County by Claassen; no specimen.
- Hylocomnium splendens* (Hedw.) Bry. Eur. On humus, decaying wood and rocks along stream banks. Cuyahoga.
- Hypnum crista castrensis* Hedw. On humus in woods. Adams; Jackson, OU; Pike. Reported from Cuyahoga and Summit Counties by Claassen; no specimen.
- Hypnum cupressiforme* Hedw. On soil. Lake, Ob; Lorain, Ob. Reported from Cuyahoga and Summit Counties by Claassen; no specimen.
- Hypnum curvifolium* Hedw. On soil, rocks, rotting logs. Adams, UC; Ashland; Athens, OU; Clark; Clinton; Coshocton; Cuyahoga; Fairfield; Franklin, BW; Guernsey; Hamilton, UC; Highland, OU; Hocking; Jackson, OU, C; Lake; Lawrence; Licking; Lorain, Ob; Lucas; Meigs; Monroe; Morrow; Ottawa, SL; Pickaway, OU; Ross, OU; Scioto, OU; Seneca; Shelby; Stark; Trumbull; Tuscarawas, C; Washington, M; Williams.
- Hypnum fertile* Sendt. On decaying wood. Athens, OU; Jackson, OU.
- Hypnum imponens* Hedw. On rotting wood in shaded areas. Adams, UC; Ashtabula; Athens, OU; Auglaize; Belmont; Carroll; Coshocton; Delaware, OW; Fairfield; Franklin; Greene; Hocking; Jackson, OU; Lake; Licking; Lorain, Ob; Meigs, OU; Monroe; Richland; Ross; Scioto; Trumbull; Vinton; Washington, M; Wayne, C; Wood, BG. Reported from Cuyahoga, Portage and Summit Counties by Claassen; not seen.
- Hypnum molluscum* Hedw. On rocks and soil in shaded areas. Adams, UC; Ashtabula, C;

- Athens, OU; Champaign; Coshocton; Fairfield; Geauga; Hocking; Jackson, OU; Lake; Monroe; Richland; Ross; Scioto; Tuscarawas, C; Vinton. Reported by Claassen from Cuyahoga County; not seen.
- Hypnum patientiae* Lindb. On rocks, soil, rotten wood in very moist situations. Adams; Ashtabula, C; Athens, OU; Carroll; Champaign; Coshocton; Cuyahoga, C; Fairfield, OU; Franklin; Greene, OU; Guernsey; Highland, OU; Hocking; Jackson, C; Lake, Ob; Licking; Logan; Monroe; Morrow; Pickaway; Portage; Richland; Ross, OU; Shelby; Stark; Tuscarawas, C; Wayne; Wood, BG.
- Hypnum pratense* Koch. Wet places in open swamps and meadows. Clark; Summit; Wood, BG. Reported from Cuyahoga and Licking Counties by Claassen; not seen.
- Hypnum reptile* MX. On rotting logs, rocks and soil. Ashtabula, C; Clark; Columbiana; Hocking; Portage; Trumbull.
- Leptodictyum riparium* (Hedw.) Warnst. On stocks, logs, roots of trees and rocks in swamps or streams. Adams; Athens, OU; Auglaize; Clark; Erie, SL; Franklin, BW; Geauga; Hardin; Highland; Jackson, OU; Lake; Lawrence; Licking; Lorain, Ob; Mahoning; Morrow; Ottawa, SL; Pickaway, OU; Portage; Richland; Ross, OU; Scioto; Shelby; Trumbull; Washington, M; Wood, BG. *Forma fluitans* reported from Cuyahoga County by Claassen; not seen.
- Leptodictyum trichopodium* (Schultz) Warnst. On rotten logs, stones and soil in swamps or slow moving streams. Athens, OU; Champaign; Coshocton; Erie, SL; Franklin; Hardin; Highland; Jackson; Lake; Madison; Miami; Muskingum; Ottawa, SL; Pickaway, OU; Richland; Scioto; Shelby; Trumbull; Wood, BG.
- Plagiothecium denticulatum* (Hedw.) Bry. Eur. On rocks, soil in shady wooded areas. Ashland; Ashtabula, C; Athens, OU; Auglaize; Belmont; Coshocton; Cuyahoga, C; Delaware, OW; Fairfield; Franklin; Hancock; Hardin; Hocking, C; Jackson, OU; Lake; Licking; Lorain, Ob; Monroe; Ottawa, SL; Pickaway; Pike; Portage; Richland; Ross, OU; Summit, C; Trumbull; Tuscarawas; Washington, M; Williams; Wood, BG.
- Plagiothecium deplanatum* (Sull.) Grout. On shaded, moist rocks, occasionally on soil. Adams; Athens, OU; Belmont; Clark; Highland; Monroe; Ottawa, SL; Perry; Pickaway, OU; Ross; Scioto.
- Plagiothecium elegans* (Hook.) Sull. On soil, rotten logs and sandstone in shaded areas. Ashtabula; Belmont; Hocking; Jackson, OU; Monroe; Portage.
- Plagiothecium geophillum* (Aust.) Grout. On moist shaded sandstone. Belmont; Clark; Coshocton; Fairfield; Franklin; Mahoning, C; Montgomery, C; Ottawa, SL; Pickaway; Ross, OU; Scioto; Wood, BG. Reported recently from Athens County by Robinson.
- Plagiothecium laetum* Bry. Eur. Mostly on moist sandstone, occasionally on tree bases. Champaign; Fairfield; Jackson; Portage; Scioto; Trumbull.
- Plagiothecium latebricola* (Wils.) Bry. Eur. On rotten wood and moist sandstone. Jackson.
- Plagiothecium muellerianum* Schimp. On conglomerate cliff faces in the shade. Belmont; Delaware, OW; Erie, Ob; Hocking; Portage. Reported recently from Athens County by Robinson.
- Plagiothecium pulchellum* (Hedw.) Bry. Eur. On moist stones in shaded areas. Ottawa, SL.
- Plagiothecium roseanum* (Hampe) Bry. Eur. On soil and moist sandstone in cool, shady areas. Ashtabula; Athens, OU; Belmont; Clark; Hocking; Lorain, Ob; Monroe; Pickaway, OU; Portage; Richland. Reported from Cuyahoga, Lake and Summit Counties by Claassen; specimen not seen.
- Plagiothecium ruthei* Limpr. In swamps. Ross.
- Plagiothecium striatellum* (Brid.) Lindb. Vertical faces of moist sandstone cliffs. Champaign; Jackson, OU; Pike; Portage; Trumbull.
- Plagiothecium sylvaticum* (Brid.) Bry. Eur. On moist rocks, tree roots, rotten logs in very moist situations. Ashtabula, C; Athens, OU; Belmont; Cuyahoga; Franklin; Hocking; Jackson, C; Ottawa, SL; Stark; Tuscarawas, C; Wood, BG.
- Plagiothecium turfaceum* (Lindb.) Lindb. On soil and rock in shaded moist areas. Cuyahoga; Jackson; Lorain, Ob; Paulding; Portage.
- Platygerium repens* (Brid.) Bry. Eur. On bark of trees in a variety of light conditions. Ashland; Ashtabula; Athens, OU; Auglaize; Belmont; Champaign; Clark; Clermont, UC; Coshocton, C; Cuyahoga; Darke; Delaware, OW; Fairfield; Franklin, BW; Greene, C; Guernsey;

Hamilton, UC; Hardin; Highland; Hocking; Jackson, OU; Lake; Licking; Lorain, Ob; Mercer; Miami; Morrow; Noble; Paulding; Perry; Portage; Richland; Ross, OU; Scioto; Shelby; Summit; Trumbull; Tuscarawas, C; Union; Van Wert; Washington, M; Wayne; Williams; Wood, BG.

Porotrichum allegheniense (C. Mull.) Grout. Near waterfalls, streams or other continuously moist areas. Athens, OU; Belmont; Fairfield; Gallia; Greene; Hocking; Jackson, OU; Lake; Meigs, OU; Monroe; Ross; Washington.

Pylasia intricata (Hedw.) Bry. Eur. On bark of living trees. Ashtabula; Highland, OU; Lorain, Ob; Monroe. Reported from Cuyahoga, Lake, Erie and Perry Counties by Claassen; specimen not seen.

Pylasia selwynii Kindb. On bark of living trees. Adams; Athens, OU; Belmont; Clark; Franklin; Highland; Hocking; Lake; Lorain, Ob; Miami; Pickaway, OU; Richland; Ross, OU; Scioto. Reported by Claassen from Cuyahoga, Geauga, Lake and Summit Counties; not seen.

Pylasia subdenticulata Schimp. On bark of living trees. Clark. Reported by Sullivant from Franklin County; not seen.

Rhytidiadelphus triquetrus (Hedw.) Warnst. Moist humus of forest floor. Champaign; Cuyahoga; Fairfield; Jackson; Lake; Pickaway, OU.

Rhytidium rugosum (Hedw.) Kind. Top of exposed cliffs in fairly dry situations. Adams, UC; Athens; Clark; Fairfield; Greene; Lorain, Ob; Monroe, BW; Pike; Ross; Vinton. Reported from Cuyahoga and Summit Counties by Claassen; not seen.

Sciaromium lescurii (Sull.) Broth. On rocks in streams, waterfalls. Fairfield; Hocking; Jackson.

Scorpidium scorpioides (Hedw.) Limpr. In bogs, found only in cedar swamp. Champaign, Ob.

Sematophyllum adnatum (MX.) E. G. Britton. Usually on rotting logs, occasionally on tree bases. Champaign; Coshocton; Cuyahoga; Delaware, OW; Highland; Hocking.

Sematophyllum carolinianum (C. Mull.) E. G. Britton. On sandstone cliff tops, tree bases, occasionally on rocks in streams. Ashland; Ashtabula; Athens, OU; Coshocton; Fairfield; Hocking; Jackson, OU; Lawrence; Lorain, Ob; Portage; Richland; Scioto; Summit; Vinton. Reported from Cuyahoga County by Claassen; not seen.

Sematophyllum marylandicum (C. Mull.) E. G. Britton. On moist rocks near streams. Hocking.

Leskeaceae

Anomodon attenuatus (Hedw.) Huben. On shaded rocks and tree bases. Adams, UC; Ashland; Ashtabula, C; Athens, OU; Auglaize; Belmont; Butler; Champaign; Clark, C; Clermont, UC; Coshocton; Cuyahoga; Delaware, OW; Erie; Fairfield; Franklin; Hamilton, UC; Hancock; Highland, OU; Hocking, OU; Holmes, OU; Jackson, OU, C; Lake; Licking; Lorain, Ob; Madison; Medina; Meigs; Miami; Monroe; Morgan, OU; Morrow; Ottawa, SL; Paulding; Pickaway; Portage; Richland; Scioto; Seneca; Trumbull; Tuscarawas, C; Union; Van Wert; Washington, BW, M; Wayne; Williams; Wood, BG.

Anomodon minor (Beauv.) Lindb. On tree trunks, limestone bluffs, occasionally on soil. Adams; Ashtabula, C; Athens, OU; Belmont; Clark; Cuyahoga; Delaware, OW; Fairfield; Franklin; Greene; Hamilton, UC; Highland, OU; Hocking; Jackson, OU; Lake; Meigs; Ottawa, SL; Richland; Ross; Sandusky; Scioto; Shelby; Trumbull; Van Wert; Wood, BG.

Anomodon rostratus (Hedw.) Schimp. Base of trees, rock ledges, soil in forested areas. Adams; Athens, OU; Auglaize; Belmont; Clark, C; Clermont, UC; Coshocton; Cuyahoga; Delaware, OW; Erie, SL; Fairfield; Franklin; Gallia; Greene; Guernsey; Hamilton, UC; Highland, OU; Hocking; Jackson, OU; Lake; Licking; Logan; Lorain, Ob; Lucas; Meigs; Miami; Monroe; Ottawa, SL, C; Paulding; Portage; Richland; Ross; Scioto; Seneca; Shelby; Summit; Tuscarawas, C; Union; Van Wert; Vinton; Washington, M; Williams; Wood, BG.

Anomodon rugelii (C. Mull.) Keissl. Base of trees in moist woods. Lake; Ottawa, SL.

Haplomenium triste (Cesati) Kindb. On bark of living trees. Adams; Athens, OU; Champaign; Coshocton; Delaware, OW; Highland, OU; Hocking; Jackson, OU; Lake; Miami; Monroe; Ross; Scioto.

Helodium blandowii (Web. & Mohr.) Warnst. In moist swampy areas on soil. Lorain, Ob; Summit, C; Trumbull. Reported from Geauga, Lake and Portage Counties by Claassen; specimen not seen.

- Helodium paludosum* (Sull.) Aust. Base of trees or soil in swampy areas. Clermont, UC; Cuyahoga, C; Defiance; Geauga; Hocking; Jackson; Lorain, Ob; Ross; Scioto; Trumbull; Vinton.
- Leskea arenicola* Best. Base of living trees. Delaware; Jackson; Ross.
- Leskea gracilescens* Hedw. On living trees, especially near the base, occasionally on soil. Adams; Athens, OU; Clark; Delaware; Fairfield; Franklin, OU; Highland, OU; Hocking; Jackson, OU; Licking; Lucas; Madison; Pickaway, OU; Richland; Ross, OU; Sandusky; Union; Van Wert; Washington, M; Williams; Wood, BG.
- Leskea nervosa* (Schwaegr.) Mylin. Base of trees. Ottawa, SL.
- Leskea obscura* Hedw. On bark of living trees, especially near the base. Athens, OU; Champaign; Clark, C; Cuyahoga; Defiance; Delaware; Fairfield; Franklin; Hamilton, UC; Highland; Hocking; Lake; Licking; Lorain, Ob; Madison; Morgan, OU; Paulding; Pickaway; Ross, OU; Scioto; Shelby; Trumbull; Union; Van Wert; Wood, BG; Wyandot.
- Leskea polycarpa* Hedw. On logs, trees, rocks in moist places. Adams; Ashtabula; Athens, OU; Cuyahoga; Franklin; Geauga; Jackson; Montgomery; Morgan; Pickaway, OU; Pike; Ross, OU; Trumbull; Union; Washington, M; Wood, BG.
- Lindbergia brachyptera* (Mitt.) Kindb. Bark of living tree. Franklin; Greene; Hardin; Morrow; Ross; Sandusky; Union.
- Myurella careyana* Sull. On shaded limestone rocks. Adams; Cuyahoga; Greene.
- Thelia asperella* Sull. Base of trees, logs, sandstone. Adams, UC; Athens, OU; Clark; Cuyahoga; Delaware, OW; Erie; Highland; Hocking; Jackson, OU; Lorain, Ob; Montgomery; Ottawa; Perry; Pike; Ross, OU; Scioto; Vinton, OU.
- Thelia hirtella* (Hedw.) Sull. Base of living trees, occasionally on rocks. Adams, UC; Athens, OU; Champaign; Clark; Clermont, UC; Cuyahoga; Delaware, OW; Erie, Ob; Franklin; Greene; Hocking; Jackson; Lake; Lorain, Ob; Lucas; Meigs; Monroe; Pike; Richland; Ross, OU; Scioto. Includes *T. lescurii* Sull. (1 specimen, Lucas County).
- Thuidium delicatulum* (Hedw.) Mitt. On soil, rotten wood and stones in moist shaded places. Adams, UC; Ashtabula; Athens, OU; Auglaize; Belmont; Champaign; Clermont, UC; Coshocton; Cuyahoga, BW; Defiance; Delaware, OW; Erie, Ob; Franklin; Gallia; Guernsey; Highland, OU; Hocking; Holmes, OU; Jackson, OU; Lake; Licking; Lorain, Ob; Monroe; Morgan; Portage; Richland; Ross; Scioto; Stark; Summit, C; Trumbull; Vinton; Warren, UC; Washington, M; Wayne, C; Williams; Wood, BG; Wyandot.
- Thuidium microphyllum* (Hedw.) Best. On rotten logs and tree roots. Clark; Franklin; Geauga; Jackson; Morrow; Pickaway, OU; Richland; Ross; Wood. Reported from Cuyahoga County by Claassen; not seen. Reported recently from Athens County by Robinson.
- Thuidium minutulum* (Hedw.) Bry. Eur. On rotten wood. Clark; Jackson, OU; Lorain, Ob; Pickaway; Wood, BG. Reported by Claassen from Cuyahoga County; not seen.
- Thuidium pygmaeum* Bry. Eur. On limestone or sandstone. Adams; Athens, OU; Ross, OU; Scioto. Reported from Cuyahoga County by Claassen; not seen.
- Thuidium recognitum* (Hedw.) Lindb. On rocks and soil in moist areas. Adams; Athens; Champaign; Clinton; Cuyahoga; Franklin; Jackson; Lake; Lawrence; Logan; Morgan; Portage; Ross, OU; Summit; Tuscarawas, C; Washington, M.
- Thuidium scitum* (Beauv.) Aust. Bark of living trees. Clark; Hocking; Jackson; Lake; Lorain, Ob. Reported from Cuyahoga County by Claassen; not seen.
- Thuidium virginianum* (Brid.) Lindb. On rocks and soil in shaded, wooded areas. Adams, UC; Athens; Hocking; Jackson, OU; Lawrence; Noble; Pickaway, OU; Ross, OU; Scioto; Wood, BG. Reported by Claassen from Cuyahoga County; not seen.

Hookeriaceae

- Hookeria acutifolia* Hook. On surface of cold sandstone cliffs and overhangs. Athens, OU; Fairfield; Hocking; Jackson, OU; Licking.

Neckeraceae

- Neckera pennata* Hedw. On bark of living trees in wooded areas. Champaign; Cuyahoga; Hocking; Jackson, OU; Lake.

Leucodontaceae

- Leptodon ohioensis* Sull. Bark of living trees in deep woods. Franklin, BW. Reported by Sullivant from Greene County; not seen.
- Leptodon trichomitron* (Hedw.) Mohr. Bark of living trees, particularly in shaded areas in valleys of southern Ohio. Adams, UC; Athens, OU; Champaign; Clark; Franklin; Greene; Highland, OU; Hocking, OU; Jackson, OU; Lake; Monroe; Morgan; Perry; Ross; Vinton, OU. Reported by Beardslee as from Cincinnati, Ohio; not seen.
- Leucodon brachypus* Brid. Bark of living trees. Lake.
- Leucodon julaceus* (Hedw.) Sull. Bark of living trees in wooded areas. Adams; Auglaize, BW; Belmont; Champaign; Clark; Cuyahoga; Delaware; Erie; Fairfield, Ob; Franklin, BW; Greene; Guernsey; Highland, OU; Jackson, OU, C; Lawrence; Miami; Montgomery; Ottawa; Pickaway, OU; Ross, OU; Scioto; Vinton.
- Leucodon sciuroides* (Hedw.) Schwaegr. On bark of trees and rotting logs in shaded areas. Athens, OU; Franklin; Greene; Highland; Miami; Pickaway; Pike, OU.

Crypaeaceae

- Cryphaea glomerata* Schimp. Bark of living trees. Franklin, SL; Hamilton, SL; Highland, OU; Scioto.

Fabroniaceae

- Anacamptodon splachnoides* (Froehl.) Brid. On roots of trees or in knot holes, particularly beech trees. Clark; Highland, OU; Lorain, Ob; Richland; Ross, OU. Reported from Cuyahoga County by Claassen; not seen.
- Clasmatodon parvulus* (Hampe) Sull. Bark of living trees, usually in open areas. Highland, OU; Hocking; Jackson; Ross; Scioto; Shelby.
- Fabronia ciliaris* (Brid.) Brid. Bark of living trees, usually in open areas. Jackson; Pickaway, OU; Ross.
- Fabronia ravenelli* Sull. Bark of living trees. Ross.
- Schwetschkeopsis denticulata* (Sull.) Broth. On tree bark and rocks in shaded areas. Adams; Athens, OU; Clark; Highland; Hocking, OU; Scioto.

Fontinalaceae

- Dichelyma capillaceum* Bry. Eur. In streams, ponds, swamps. Jackson, OU; Ross, OU.
- Fontinalis biformis* Sull. On rocks in swift flowing streams. Adams; Franklin, SL; Highland; Portage, C.
- Fontinalis dalecarlica* Bry. Eur. In swift flowing streams. Adams; Hocking; Lorain, Ob; Trumbull.
- Fontinalis disticha* Hook. & Wils. In swift flowing streams. Athens, OU; Wood, BG.
- Fontinalis lescurii* Sull. In swift flowing streams. Jackson, OU.
- Fontinalis missourica* Card. In swift flowing streams. Franklin.
- Fontinalis novae-angliae* Sull. In swift flowing streams. Adams; Ashtabula; Athens, OU; Brown; Hocking; Jackson, OU; Portage; Vinton, OU.

Sphagnaceae

- Sphagnum capillaceum* (Weiss.) Schrank. Ashtabula; Athens; Champaign; Franklin; Hocking; Jackson; Lake; Licking; Stark.
- Sphagnum compactum* D.C. Hocking; Jackson; Portage.
- Sphagnum fimbriatum* Wils. Athens.
- Sphagnum fuscum* (Schimp.) H. Klinggr. Licking.
- Sphagnum imbricatum* Hornsch. Jackson.
- Sphagnum magellanicum* Huron; Licking; Richland; Scioto; Williams.
- Sphagnum palustre* Ashtabula; Champaign; Hocking; Huron; Jackson; Licking; Stark; Williams.
- Sphagnum plumulosum* Roll. Franklin; Jackson; Licking.
- Sphagnum recurvum* Beauv. Licking; Williams. Reported recently from Vinton County by Robinson.

- Sphagnum squarrosum* Crome. Summit.
Sphagnum subsecundum Nees. Jackson; Williams. Reported recently from Vinton County by Robinson.
Sphagnum tenellum Pers. Delaware.
Sphagnum teres (Schimp.) Angstr. Franklin.
Sphagnum warnstoftii Russow. Champaign; Lake.
Sphagnum wulflanum Girg. Coshocton.

Doubtful Specimens from Ohio

- Acoulon triquetrum* (Spruce) C. Mull. Reported by Jennings from Ohio. No specimen seen.
Barbula convoluta (Huds.) Hedw. Reported by Beardslee. Wareham records a specimen from the Farlow herbarium. This author has not seen a specimen.
Brachythecium flagellare (Hedw.) Jennings. Packets in the Ohio University herbarium from Athens, Jackson and Meigs Counties which this author is unable to determine or confirm. One specimen reported from Washington County, Marietta College herbarium, not seen.
Brachythecium populeum (Hedw.) Br. and Sch. Reported from Cuyahoga County by Claassen, from Ohio by Beardslee and from Washington County by Conard. There is apparently a specimen in H. S. Conard's collection, but not seen by the author.
Brachythecium velutinum (Hedw.) Bry. Eur. Reported from Cuyahoga County by Claassen. Packets from Wood County in Bowling Green herbarium and from Tuscarawas in Carnegie Museum, the author is not able to confirm these.
Bryum inclinatum (Sw.) Bry. Eur. Reported from Summit County by Claassen, not seen.
Bryum pallescens Schleich. Reported from Ohio by Sullivant and Beardslee. Specimen not seen.
Bryum uliginosum (Brid.) Bry. Eur. Reported by Sullivant and Beardslee. Packet in University of Cincinnati from Clermont County. Author not able to confirm.
Calliergon giganteum (Schimp.) Kind. Reported by Beardslee. Not seen.
Calliergon stramineum (Dick.) Kind. Reported by Beardslee. Not seen.
Camptothecium nitens (Schreb.) Schimp. Reported by Beardslee, not seen. The only specimen is a fossil from interglacial deposits.
Desmatodon plinthobius Sull. and Lesq. Reported by Beardslee, not seen.
Dicranella cerviculata (Hedw.) Schimp. Reported by Lesquereux and Beardslee, not seen.
Dicranum bergeri Bland. Reported by Beardslee, not seen.
Drepanocladus uncinatus (Hedw.) Warnst. No packets so labelled were confirmed.
Eurhynchium diversifolium (Schleich) Br. and Sch. Reported by Lesquereux, Sullivant and Beardslee. Specimens not seen.
Fissidens bryoides Hedw. Specimens from Wood County in Bowling Green herbarium; unable to confirm. Reported by Beardslee and a specimen is in Sullivant herbarium from Cincinnati, Ohio. Not seen by the author.
Fissidens grandifrons Brid. Reported by Mrs. E. G. Britton, not seen.
Fissidens hyalinus Hook. and Wils. Reported by Beardslee, Lea, Jennings and Sullivant. Not seen.
Fontinalis antipyretica (L) Hedw. Reported by Claassen, not seen.
Funaria americana (Lindb) Reported by Holzinger and Jennings, not seen.
Grimmia laevigata Brid. Reported by Sullivant and Beardslee, no specimen. Recently by Robinson from Athens County.
Habrodon purpusillus (Denot) Lindb. Reported by Sullivant. Grout's comment about this material was that it is the attenuate branches of *Leucodon julaceus*. Not seen.
Hygrohypnum ochraceum (Turn.) Loeske. Reported by Claassen from Cuyahoga County, not seen.
Meesia triquetra (L, Hook and Tayl.) Angstr. Reported from Ohio by Jennings and Beardslee. Not seen.
Meesia uliginosa Hedw. Reported by Beardslee. Not seen.
Mnium lycopodioides (Hook.) Schw. Reported by Beardslee. Not seen.
Mnium orthorhynchum Brid. In the Ohio University herbarium from Jackson County, unable to confirm.

- Oncophorus virens* (Ws) Brid. Reported by Beardslee, not seen.
Oncophorus wahlenbergii Brid. Reported by Grout from Ohio, not seen.
Orthotrichum cupulatum (Hoffm.) Brid. Reported by Beardslee, not seen.
Philonotis muhlenbergii (Schw.) Brid. Reported by Lesquereux, not seen.
Physcomitrium hookeri Hampe. Reported by Sullivant and Britton, not seen.
Pohlia atropurpurea (Wahlenb.) H. Lindb. Reported by Beardslee, specimen not seen.
Pohlia cruda (L.) Lindb. Reported by Beardslee, not seen.
Pohlia delicatula (Hedw.) Grout. Specimen at Ohio University, confirmed by Conard. Not enough remaining to examine.
Polytrichum formosum Hedw. Reported by Beardslee. Specimens at Ohio State University are *P. gracile*.
Seligeria recurvata (Hedw.) B & S. Reported by Sullivant (Musc. All.)
Seligeria trifaria (Brid.) Lindb. Reported by Sullivant and Holzinger; not seen.
Splachnum ampullaceum (L.) Hedw. Reported by Beardslee and Lesquereux, not seen.
Trematodon ambiguus (Hedw.) Hornsch. Reported by Beardslee, not seen.
Weisia microstoma (Hedw.) C. Muell. Distributed in Musc. Bor. Amer. #54, presumably from Ohio.

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