

Proceedings of the Iowa Academy of Science

Volume 63 | Annual Issue

Article 32

1956

Mosses and Liverworts of Iowa

Henry S. Conard

Copyright © Copyright 1956 by the Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Conard, Henry S. (1956) "Mosses and Liverworts of Iowa," *Proceedings of the Iowa Academy of Science*: Vol. 63: No. 1 , Article 32.

Available at: <https://scholarworks.uni.edu/pias/vol63/iss1/32>

This Research is brought to you for free and open access by UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

Mosses and Liverworts of Iowa

HENRY S. CONARD

In 1945 I published three papers on the Atracheata (Bryophytes) of Iowa in *The Bryologist*, vol. 48:I. The species and the counties from which they were known, with the herbaria in which specimens could be seen. II. Names that have been published but were not recognized in my list, and why not. III. Papers on the subject, with notes about the authors.

Since that time several additional species have been collected in the State, many new county records have been made, some mis-identifications are to be corrected, and some changes in names must be made. As I am not likely to see additional collections from Iowa, it seems right to present a corrected list at this time.

My herbarium, *b* in the previous report, is now incorporated with that of the State University, *c*, at Iowa City.

In 1945 I completely misunderstood *Leptodictyum laxirete*. The plants reported under that name belong in *L. brevipes*.

I am, for the most part, using the names given in Grout's Moss Flora of North America and Frye & Clark's Hepaticae of North America, without citing authorities. Counties are designated by numbers according to the map used in 1945, reproduced herewith.

One paper was missed in my former report. It is, following the format of the previous paper:

In 1905 Anderson, Jacob P. b. Apr. 7, 1874. d. Feb. 15, 1953. B. S. Iowa State College 1913; M. S. 1916. Sc. D. Univ. of Alaska 1940. Principal publication: Flora of Alaska, in Iowa State College Journ. of Science 1941-1952. Biography in Proc. Iowa Acad. Sci. 60:53-54.

Thalloid liverworts of Decatur County. Iowa Naturalist 1:33-34. Iowa City, Apr. 1905. Eight species are listed. I have been unable to locate the specimens. There is no reason to doubt the report, except as to *Riccia crystallina*, which has not been again recognized in Iowa until 1955, and then only much farther north.

Three recent papers must be added:

1952 Drexler, R. V. The Genus Sphagnum in Iowa. Proc. Iowa Acad. Sci. 59:85-88.

1955 Grant, Martin L., and Robert F. Thorne. A Sphagnum bog in Iowa. Proc. Iowa Acad. Sci. 62:197-210.

1953 Schuster, R. M. Boreal Hepaticae: A Manual of the Liverworts of Minnesota and adjacent regions. Amer. Midl. Nat. 49:257-684.

I am greatly indebted to Dr. E. B. Wittlake for the privilege of adding in this report the new data on *Riccia* which he has discovered. Dr. R. V. Drexler has furnished data on *Sphagnum*.

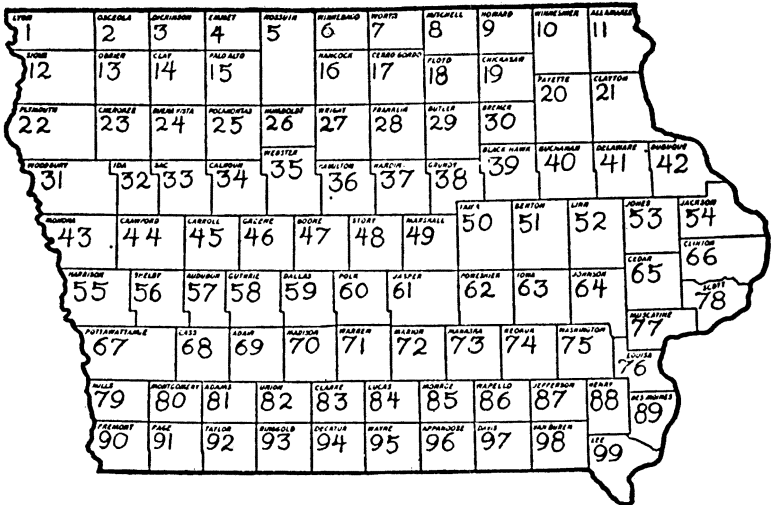


Fig. 1. Map of Iowa with counties numbered.

SYSTEMATIC LIST

MUSCI

- Acaulon rufescens* 52, 62
- Acaulon schimperianum* 31
- Acaulon triquetrum* 62
- Aloina rigida* 31, 67
- Amblystegiella confervoides* 8, 10, 11, 20, 21, 41, 42, 47, 50, 53, 98
- Amblystegium americanum* 1, 11, 21
- Amblystegium compactum* 11, 20, 21, 41, 42, 53
- Amblystegium juratzkanum* 2-4, 6-8, 10, 11, 13, 14, 16, 17, 20, 21, 23, 26, 27, 29-32, 34, 37, 38, 42, 47, 52-54, 58, 60, 62, 63, 70, 73-75, 77, 80, 85, 86, 94-96, 99
- Amblystegium serpens* 3, 4, 7, 11, 14, 20-22, 25, 29-31, 37, 42, 50, 52, 54, 59, 62, 64, 73, 77, 79, 88, 97
- Amblystegium serpens* var. *tenuis* 4, 11, 42,
- Amblystegium varium* 1-13, 15-18, 20-26, 29-37, 39-42, 44-58, 60-68, 70, 71, 73-80, 82-84, 87-99
- Amblystegium varium* var. *ovatum* 7, 10, 11, 31, 41, 42, 50, 61-63, 68, 77, 90
- Amblystegium varium* var. *parvulum* 37, 42, 49, 52, 54, 64,
- Anomodon attenuatus* 3-6, 8-11, 14, 17, 18, 20, 21, 26, 30, 31, 35-37, 39-42, 45-48, 50-55, 58-66, 68, 70-73, 76-78, 85, 87-89, 93-95, 98, 99
- Anomodon minor* 1, 3-15, 17, 19-33, 35-38, 40-42, 45, 47-59, 61-67, 69-71, 73-78, 80-85, 88-99
- Anomodon rostratus* 3, 4, 6, 8-11, 14, 17, 18, 20, 21, 24, 27, 30, 31, 33, 37, 39, 41, 42, 47, 48, 50-55, 60-66, 70-74, 76-78, 82, 84, 85, 87-89, 93, 95, 97-99
- Aphanorhagma patens* 37, 50, 60, 70
- Aphanorhagma serratum* 4, 11, 21, 37, 39, 47, 60-64, 72, 73, 76, 77, 98

- Astomum muhlenbergianum* 2-4, 31, 36, 42, 50, 53, 56, 61-64, 72, 75, 77, 79, 80, 85, 88
- Atrichum angustatum* 3-5, 7-11, 14, 17, 19-22, 26, 29, 30, 33, 35, 37-42, 46-49, 51-54, 58, 59, 61-64, 66, 68, 70-78, 82-84, 86-88, 92, 94-99
- Atrichum crispum* 52
- Atrichum undulatum* 3-11, 16-18, 20, 21, 31, 33, 35, 37, 39, 41, 42, 44, 45, 47, 48, 50, 52, 53, 55, 59-65, 69, 71, 73, 75-77, 79, 82, 84, 86-89, 94, 95, 98, 99
- Atrichum undulatum* var. *altecristatum* (formerly reported as var. *selwynii*, by mistake) 3, 4, 6-9, 11, 17, 21, 24, 26, 31, 42, 46, 51-55, 58, 60, 62-65, 70, 75, 80, 81, 87, 89, 90, 93
- Atrichum undulatum* var. *hausknechtii* 64
- Atrichum undulatum* var. *minus* 42
- Aulacomnium heterostichum* 10, 11, 21, 37, 47, 50, 52, 54, 62, 63, 71-73, 77, 86-88, 97, 99
- Aulacomnium palustre* 3, 4, 10, 11, 16, 52, 77
- Barbula fallax* 1, 3-5, 8, 10, 11, 15, 17, 18, 20, 21, 25, 30, 36, 37, 41-43, 47-50, 52-54, 61, 63, 64, 70-72, 75, 77, 85, 89, 98, 99
- Barbula reflexa* 8, 18
- Barbula unguiculata* 1-6, 8, 10, 11, 13, 14, 17-23, 25, 27, 30-37, 41, 42, 44, 45, 47-58, 60-71, 73, 75-77, 80, 83, 85, 87-93, 96, 98, 99
- Bartramia pomiformis* 4, 10, 11, 20, 21, 35, 37, 41, 42, 47-52, 54, 61, 63, 64, 68, 70-73, 75, 77, 86-88, 96, 99.
- Brachythecium acutum* 16
- Brachythecium campestre* 59, 62, 64, 77
- Brachythecium flagellare* (*plumosum*) 3, 4, 10, 21, 39, 42, 72, 73, 77, 86
- Brachythecium flexicaule* 3, 4, 11, 30, 35, 42, 77, 96, 99
- Brachythecium oxycladon* 1, 3-43, 45-99
- Brachythecium populeum* 11, 39
- Brachythecium rivulare* 3, 4, 8-11, 17, 20, 21, 35, 37, 42, 50, 52, 54, 63, 70, 72, 76, 77
- Brachythecium rutabulum* 3, 4, 10, 11, 14, 21, 37, 48, 62-64, 72, 99
- Brachythecium salebrosum* 2-6, 8, 10-12, 15-18, 20, 21, 29-32, 35, 37, 39, 41-43, 45, 48, 52, 53, 57, 61-64, 66, 69, 71, 74, 76, 77, 87, 88, 90, 98
- Brachythecium velutinum* 10, 11, 21, 53, 77
- Brothera leana* 21, 47
- Brotherella recurvans* 11, 42
- Brotherella tenuirostris* 11
- Bruchia sullivanii* 52, 62, 77
- Bryhnia graminicolor* 4, 5, 8-11, 14, 20, 21, 26, 31, 33, 35, 37, 42, 46, 47, 50-54, 60, 62-66, 68, 71-73, 75-77, 87-90, 96, 99
- Bryum argenteum* 1, 3-7, 9-11, 13-15, 17-23, 25, 27, 30-32, 35, 37, 39, 41, 42, 44, 46, 48-50, 52-57, 60-64, 66-68, 71, 72, 75-79, 86, 87, 89, 90, 92, 96, 99
- Bryum caespiticium* 2-4, 6, 8-11, 14, 18, 20-23, 30-32, 36-42, 46, 48, 50-53, 55, 57, 58, 60-64, 66, 68-72, 76-78, 80, 88-90, 93-96, 99
- Bryum capillare* 2, 3, 37, 52
- Bryum cuspidatum* 1, 3, 9-11, 14, 17, 20, 21, 30, 36, 37, 41, 42, 46, 50, 53, 54, 61-64, 68, 74, 77, 84
- Bryum pendulum* 1, 3, 4, 6, 7, 9-11, 17, 20, 21, 30, 35-37, 41, 42, 45, 48, 50, 52, 53, 58, 61, 63-65, 74, 75, 77, 86, 98
- Bryum pseudotriquetrum* 3, 4, 11, 15, 37, 46, 52, 64, 74,
- Bryum uliginosum* 3, 4, 10, 25, 35, 50, 62, 63, 68
- Calliergonella cuspidata* 3, 4, 52
- Calliergonella schreberi* 4, 9-11, 21, 35, 37, 42, 52, 61, 63, 64, 72, 73, 77, 86, 88, 96, 97, 99
- Campylium chrysophyllum* 1, 3, 4, 9-11, 17, 18, 20, 21, 36, 37, 40-42, 47, 52-55, 58, 61-64, 67, 68, 71, 74-78, 82, 84, 86-89, 92, 94, 96-99
- Campylium hispidulum* 1, 3-11, 13-22, 24, 25, 29-31, 33, 37-39, 41-43, 47-55, 57-75, 77, 86-88, 90, 92-94, 96-99
- Campylium polygamum* 52
- Campylium radicale* 16
- Campylium stellatum* 3, 4, 15, 52

- Catospodium nigratum* 4 (locality destroyed)
Ceratodon purpureus 1-4, 6-11, 13, 14, 16-33, 35-42, 44, 45, 47-55, 57-59, 61-79, 81, 83-88, 90, 92, 95-99
Chamberlainia acuminata 1, 3-7, 9-34, 36-42, 45, 47-65, 67-71, 73-86, 88-99
Chamberlainia cyrtophylla 3, 4, 10, 11, 17, 28, 33, 41, 45, 46, 53, 55, 64, 77, 87, 98
Cirriphyllum boscii 72, 96, 97, 99
Climacium americanum 4, 10, 11, 16, 17, 20, 21, 35, 37, 40-42, 47, 48, 52-54, 59, 61, 63, 64, 70-73, 75-77, 86-88, 94, 96, 98, 99
Climacium dendroides 3, 21, 77
Cratoneuron filicinum 4, 10, 11, 20, 21
Desmatodon coloradensis 47
Desmatodon obtusifolius 10, 11, 17, 20, 21, 35, 37, 41, 42, 46, 47, 50, 52-54, 61, 62, 64-66, 72, 74, 77, 78, 85, 88, 98, 99
Desmatodon plinthobius 32, 41, 54, 62, 77, 88, 99
Desmatodon porteri 11, 52, 53, 73, 77, 89
Dicranella heteromalla 3, 4, 7, 8, 10, 11, 17, 19-21, 26, 30, 31, 33, 35, 37, 39, 40-42, 45, 47, 48, 51-53, 55, 58, 61-64, 66, 68, 71-78, 86-88, 92, 93, 96, 98, 99
Dicranella rufescens 64, 77
Dicranella varia 3-5, 8, 10, 11, 21, 30, 31, 37, 41, 42, 44, 46, 47, 50, 52, 53, 55, 58, 61, 63, 64, 67, 73, 75-77, 83, 86, 88, 96, 98, 99
Dicranum bonjeani 11
Dicranum condensatum 61, 63
Dicranum flagellare 9-11, 21, 37, 42, 53, 62, 64, 72, 76, 77
Dicranum fulvum 10, 11, 53, 72
Dicranum montanum 8, 10, 11, 21, 35, 37, 40-42, 47, 53, 73, 77
Dicranum rugosum 42, 64
Dicranum scoparium 4, 10, 11, 21, 35, 37, 41, 42, 47, 48, 52-54, 61-64, 73, 77, 84, 86, 88, 96-99
Dicranum viride 10, 11, 21, 22, 42, 53
Didymodon recurvirostris 3, 8, 10, 11, 17, 20, 21, 37, 41, 42, 46, 52, 53
Didymodon rigidulus 10, 41
Didymodon tophaceus 3, 11, 71, 89
Didymodon trifarius 10, 21, 41, 42
Distichium capillaceum 10, 11, 21, 42
Ditrichum flexicaule var. *densum* 11
Ditrichum lineare 10, 35, 41, 52, 62, 63, 77
Ditrichum pallidum 6, 10, 11, 21, 37, 40-42, 47, 48, 52-55, 62-65, 73-77, 82, 84-86, 88, 96-99
Ditrichum pusillum 3, 9-11, 20, 21, 23, 37, 40, 41, 47, 52, 55, 61-65, 70, 75, 77, 86, 88, 96
Drepanocladus aduncus var. *kneiffii* 1, 3, 7, 14, 15-17, 33
Drepanocladus aduncus var. *kneiffii* fo. *intermedius* 3, 4, 17
Drepanocladus aduncus var. *polycarpus* 2-4, 11, 14, 17, 36, 37, 63, 76, 77
Drepanocladus aduncus var. *polycarpus* fo. *gracilescens* 2-4, 15, 37, 46, 50, 76
Drepanocladus aduncus var. *polycarpus* fo. *uncus* 3, 17, 37,
Drepanocladus aduncus var. *typicus* 2-4, 6, 14-16, 42, 52, 63, 64
Drepanocladus intermedius 3, 4
Drepanocladus revolvens 4 (locality destroyed)
Drepanocladus sendtneri 2, 3, 47
Drepanocladus sendtneri var. *gracilescens* 3, 36
Drepanocladus uncinatus 11, 42
Drummondia prorepens 70
Encalypta ciliata 9-11, 21, 50, 52
Encalypta streptocarpa 10, 11, 21, 41, 42, 54
Entodon cladorrhizans 1, 3, 4, 6, 8-11, 16-18, 20, 21, 23, 30, 35, 37-42, 45, 47, 48, 50, 52-54, 59-61, 63-65, 68, 70, 71, 73, 77, 84, 86, 88, 95, 97
Entodon compressus 1, 3-7, 10-12, 14, 19, 21-24, 26, 27, 30-33, 35-39, 41, 47-50, 52, 53, 55, 56, 58, 60-65, 67-71, 74, 76, 79, 81-84, 86, 87, 90, 91, 93, 95, 96, 99

- Entodon seductrix* 1, 3-7, 9-12, 14, 16-22, 27-33, 35-42, 44, 46-55, 57, 58, 60-77, 79, 80, 83, 85-90, 92-99
Ephemerum cohaerens 37, 39, 50, 60, 62
Ephemerum cohaerens var. *flotowianum* 62
Ephemerum crassinervium 39, 50, 60, 62, 73, 77
Ephemerum crassinervium var. *papillosum* 62, 96
Ephemerum spinulosum 39, 50, 60-62, 64, 76, 77
Ephemerum spinulosum var. *hystrix* 62
Eurhynchium hians 4, 5, 7-11, 13, 14, 16, 17, 20-24, 26, 30, 31, 33, 35-42, 45, 47-55, 58-66, 68-71, 73-79, 82-90, 92-99
Eurhynchium serrulatum 3-5, 7-12, 14, 16, 17, 19-24, 27, 29, 30, 32, 33, 35-42, 46-48, 50-53, 55, 57, 58, 60-77, 79, 80, 83-90, 93-99
Eurhynchium strigosum var. *praecox* 11, 61, 62
Eurhynchium strigosum var. *robustum* 21, 42
Fabronia ciliaris 3, 90
Fissidens bryoides 96
Fissidens bushii 4, 8, 11
Fissidens cristatus 4, 8, 10, 11, 20, 21, 37, 41, 42, 47, 48, 52, 54, 61, 63, 77, 82, 88, 98, 99
Fissidens cristatus var. *winonensis* 4, 9
Fissidens exiguus 4, 8, 17, 20, 21, 36, 37, 42, 52, 75, 99
Fissidens debilis (*julianus*) 1, 89
Fissidens minutulus 3, 4, 9-11, 19-21, 30, 37, 42, 46, 47, 50, 52-55, 61, 62, 64-66, 68, 69, 71-73, 75, 77, 85, 86, 90, 96, 98, 99
Fissidens obtusifolius 11, 20, 21, 36, 37, 41, 42, 47, 52, 61, 72, 77, 98, 99
Fissidens subbasilaris 20, 42, 76, 77, 99
Fissidens taxifolius 4, 9, 11, 16, 21, 35, 37, 39, 40, 48, 50, 52-54, 58, 60-66, 68-71, 73-77, 83, 84, 86, 87, 89, 90, 92-97, 99
Fontinalis duriaei 4, 64
Funaria calvescens 64, 96
Funaria flavicans 3, 29, 41, 52
Funaria hygrometrica 1-4, 7-12, 14, 16-18, 20-22, 25, 27, 29, 30-32, 35-37, 39, 41, 42, 44-50, 52-55, 58, 60, 62-65, 67-70, 72, 75-78, 87, 89, 90, 92, 99
Grimmia apocarpa 1, 3, 4, 8, 10, 11, 17, 18, 20, 21, 32, 35-37, 40-42, 47, 49-54, 60-62, 64, 65, 69, 70, 72, 73, 77, 85, 88, 89, 98, 99
Grimmia apocarpa var. *alpicola* 10, 11, 21, 41, 42, 47, 54, 61, 88
Grimmia apocarpa var. *conferta* 42, 61
Grimmia apocarpa var. *gracilis* 10, 61, 88
Grimmia apocarpa var. *nigrescens* 11
Grimmia apocarpa fo. *papillosa* 4
Grimmia laevigata 1, 31, 32, 40, 61
Grimmia pilifera 37, 42, 61
Grimmia plagiopodia 61
Grimmia pulvinata 61
Grimmia raui 11
Gymnostomum aeruginosum 10, 11, 20, 21, 42, 53, 64, 65
Gymnostomum calcareum 10, 11, 17, 18, 20, 21, 36, 37, 41, 42, 47, 52-54, 64-66, 72, 77, 86, 89, 98, 99
Gymnostomum calcareum var. *winonense* 9-11, 20, 21, 37, 42, 47
Gymnostomum recurvirostrum 10, 11, 20, 21, 37, 41, 42, 77, 89, 98
Gyroweisia (*Gymnostomum*) *tenuis* 42
Haplodymenium (*Anomodon*) *triste* 11, 21, 41, 42
Hedwigia ciliata 1, 4, 10, 52, 53, 86
Hedwigia ciliata fo. *viridis* 1, 11, 16, 19, 22, 36, 37, 39, 52, 54, 63, 72, 73, 98, 99
Helodium blandowii 52
Helodium paludosum 16, 52
Heterophyllum haldanianum 3-6, 8, 10, 11, 20, 30, 35, 37, 42, 53, 54, 61, 63, 64, 73, 75, 77, 86, 96
Homalia jamesii 11
Homomallium adnatum 1, 3, 4, 6, 8, 10, 11, 17, 20-23, 35, 37, 39, 41, 42, 47, 48, 50, 52-54, 60, 61, 63, 64, 67, 70, 72, 73, 77, 85-87, 98, 99

- Hygroamblystegium fluviatile* 11, 54
Hygroamblystegium fluviatile var. *ovatum* 10
Hygroamblystegium irriguum 1, 3-6, 8, 10-18, 20-22, 26, 30-32, 35-37, 39, 41-43, 47, 49-54, 56, 58, 59, 61-68, 70-77, 83-86, 88-90, 92, 94, 96, 98, 99
Hygroamblystegium irriguum var. *spinifolium* 11, 64
Hygroamblystegium noterophilum 10, 11, 20, 21, 42, 52, 54, 89
Hygroamblystegium orthocladon 3, 4, 11, 18, 20, 21, 26, 31, 36, 37, 40-42, 50, 52, 53, 64, 77, 88
Hygroamblystegium orthocladon fo. *brevinerve* 21
Hygrohypnum bestii 41
Hygrohypnum ochraceum 20
Hylocomium splendens 10, 11, 42, 51
Hyophila tortula 11, 37, 42, 53
Hypnum crista-castrensis 10, 11, 42
Hypnum cupressiforme 10, 11
Hypnum curvifolium 10, 11, 21, 35, 37, 42, 53, 63, 64, 70, 72, 73, 77, 86
Hypnum imponens 42, 53
Hypnum patientiae 8, 10, 11, 15, 17, 20, 21, 35, 37, 40, 42, 47, 50, 52-54, 61-65, 70, 72, 77, 88, 97-99
Hypnum patientiae var. *elatum* 63
Hypnum pratense 11
Hypnum reptile 4, 10, 21, 61, 63, 77
Leptobryum pyriforme 2-4, 9-11, 13, 15, 20-23, 35-37, 41, 42, 45-47, 52, 53, 55, 62, 64, 65, 68, 72, 74, 76, 77
Leptodictyum brevipes 1, 3, 4, 9, 11, 14, 17, 20-22, 25, 29-31, 37, 40, 41, 44, 47, 57, 59, 60, 62-65, 69, 75, 79, 84, 86, 90, 99
Leptodictyum riparium 1-17, 19-25, 29-35, 37, 40-43, 45-47, 50, 52-73, 75-77, 79-81, 84, 86, 89-91, 96, 98, 99
Leptodictyum riparium fo. *abbreviatum* 61, 62
Leptodictyum riparium fo. *flaccidum* 6, 17
Leptodictyum riparium fo. *fluitans* 4, 75
Leptodictyum trichopodium 1-5, 8, 10, 11, 13, 14, 16, 17, 20-23, 25, 26, 30-37, 40-42, 45, 47, 48, 50, 52-59, 61-64, 68-71, 73, 75-77, 79, 83-85, 90, 92, 95
Leptodictyum trichopodium var. *kochii* 1, 3-5, 8, 10, 11, 22, 26, 31, 32, 37, 40, 42, 47, 48, 50-52, 55, 58, 61-64, 69, 70, 76, 77, 80, 83, 84, 87, 90, 96
Leptodon trichomitron 54
Leskea gracilescens 1, 3-8, 10-18, 20-42, 44-65, 67-77, 79-84, 86-99
Leskea nervosa 89
Leskea obscura 1, 3-12, 14-21, 24, 26-31, 41, 42, 45, 47, 48, 50-53, 56, 57, 62-64, 68, 70, 73, 76-78, 85, 86, 88, 89, 91, 92, 94, 95, 99
Leskea polycarpa 3, 4, 45
Leucobryum glaucum 10, 11, 17, 21, 37, 41, 42, 50, 52, 64, 71-75, 77, 86, 88, 96, 97, 99
Leucodon julaceus 10, 21, 42, 53, 54
Leucodon sciuroides 10, 11, 20, 42
Lindbergia brachyptera var. *austinii*, 1, 3, 4, 6-8, 10, 11, 15-17, 20, 22, 32, 33, 37, 39, 42, 47, 50-53, 55, 56, 58-64, 72, 76, 77, 82-84, 87, 91, 92, 95, 98, 99
Mnium affine 3, 10, 11, 14, 16, 20, 21, 37, 39-42, 47, 48, 50, 52, 54, 61-64, 71, 76, 77, 86-88, 94, 96-99
Mnium affine var. *ciliare* 4, 11, 20, 21, 35, 37, 42, 47, 48, 53, 54, 60, 61, 63-65, 68, 71, 72, 77, 87, 92, 94, 99
Mnium affine var. *rugicum* 3, 4, 7, 8, 11, 17, 20, 31, 35, 42, 50, 52, 63, 73, 76, 77, 85, 86, 93, 96, 97, 99
Mnium cuspidatum 1, 3-15, 17-24, 26-43, 45-99
Mnium longirostrum (*rostratum*) 10
Mnium medium 10, 11, 17, 20, 21, 35, 37, 42, 48, 50, 62, 63, 77
Mnium orthorhynchum 3, 8, 10, 11, 16, 20, 21, 37, 42, 47, 52, 63, 77
Mnium punctatum 21, 37, 42, 72, 73, 77, 86

- Mnium serratum (marginatum)* 3, 4, 10, 11, 20, 21, 31, 35, 42, 52-54, 63, 72, 77
Mnium stellare 7-11, 18, 20, 21, 35, 37, 39, 42, 51-53, 59, 63, 77, 88, 90, 94, 98
Myurella careyana 10, 11, 20, 21, 42, 52, 53, 77
Nanomitrium synoicum 62
Neckera pennata 10, 42
Oncophorus wahlenbergii 11, 42
Orthotrichum anomalum 1, 3, 11, 22, 41
Orthotrichum lescurii 72
Orthotrichum obtusifolium 11, 41, 42, 53
Orthotrichum pumilum 1-5, 8, 10-17, 20, 22, 23, 25, 27, 28, 30-33, 36-38, 41, 42, 45, 46, 48, 52, 53, 55, 56, 59-64, 68, 69, 73, 74, 76, 77, 79, 81, 84, 90-92, 95, 97, 99
Orthotrichum stellatum 10, 11, 42, 76, 77, 96
Orthotrichum strangulatum 10, 11, 17, 20, 22, 41, 42, 47, 52-54, 61, 64, 73
Phascum cuspidatum var. *americanum* 3, 31, 39, 42, 50, 52, 60-62, 64, 70-72, 77, 86
Philonotis fontana 76
Philonotis longiseta 11, 72, 77, 98
Philonotis marchica 15, 41, 42, 98
Physcomitrium hookeri 1, 3, 4, 10, 11, 17, 26, 31, 32, 42, 47, 53, 62, 77, 86
Physcomitrium immersum 37, 61, 62, 77, 98
Physcomitrium kellermani 3, 37, 41
Physcomitrium kellermani var. *drummondii* 3, 4, 10, 22, 62, 88
Physcomitrium pyriforme (turbinatum) 1, 3, 4, 7-11, 14, 15, 17, 19, 21, 22, 27, 29-32, 35-37, 40-42, 47-55, 58-64, 67-71, 73-78, 83, 84, 86-88, 90, 92, 93, 95, 96, 98, 99
Physcomitrium sp. x *Funaria hygrometrica* 3, 31
Plagiopus oederi 8-11, 21, 42, 47, 52, 77
Plagiothecium denticulatum 4, 11, 16, 21, 37, 39, 40, 42, 52, 53, 63, 77
Plagiothecium deplanatum 3-6, 8-12, 14, 16-18, 20-22, 24, 26, 31-33, 35, 37, 39, 41, 42, 47, 48, 50-56, 58, 60-67, 69, 71, 73, 76, 77, 83-85, 90, 94, 97-99
Plagiothecium geophilum 21, 42, 49, 50, 64, 72, 73, 76, 77, 85, 86, 89, 98, 99
Plagiothecium roeseanum 10, 11, 16, 21, 35, 37, 52, 62-64, 71-73, 77, 78, 98
Plagiothecium sylvaticum 10, 21, 37, 40, 52, 72, 73, 77, 78
Platygyrium repens 1-11, 13-17, 19-22, 26, 28-30, 33, 35, 37-42, 45, 47, 48, 50-55, 57, 58, 60-66, 68-77, 80, 83, 85-87, 89-99
Pleuridium subulatum 10, 40, 42, 50, 52, 53, 61-64, 74, 77, 94, 96, 97
Pogonatum pensilvanicum 73, 75, 77, 86, 88
Pohlia annotina var. *decipiens* 10, 21, 37, 86
Pohlia atropurpurea 31
Pohlia cruda 10, 11, 17, 21, 35
Pohlia delicatula (carnea) 58
Pohlia elongata 10, 11, 21, 37, 77, 86
Pohlia nutans 1, 4, 8, 10, 11, 21, 32, 35, 37, 42, 52, 61-64, 71, 72, 74, 76, 77, 86, 88, 97-99
Pohlia pulchella 77
Pohlia wahlenbergii 1, 3, 4, 6, 9-11, 13, 14, 17, 20, 21, 25, 33, 35-37, 40, 42, 46, 47, 50-52, 56, 58, 61-65, 68-70, 72-74, 76, 77, 83, 84, 86, 89, 94, 96, 98, 99
Polytrichum commune 3, 9-11, 16, 17, 20, 21, 35, 37-42, 47, 48, 50, 52-54, 61-64, 71-78, 86, 88, 99
Polytrichum gracile 16
Polytrichum juniperinum 1, 3, 4, 8, 10, 11, 16, 18, 20, 21, 30, 35, 37, 40-42, 46-48, 51-54, 61-64, 70, 73-77, 86-88, 96-99
Polytrichum ohioense 11, 21, 42, 47, 52, 53, 62, 63, 84, 88, 96, 98, 99
Polytrichum piliferum 1, 10, 21, 52
Pottia randii 3
Ptychomitrium incurvum 61

- Pylaisia jamesii* 3, 11, 29, 30, 42, 47
Pylaisia polyantha 2, 53
Pylaisia selwynii 1, 3, 4, 6, 7, 9-12, 14, 17, 20-22, 24, 30, 37, 41, 42, 46, 47, 49, 52, 53, 55, 56, 59-64, 69, 70, 73, 77, 82-84, 88, 94-98
Pylaisia subdenticulata 3, 11, 21, 42, 73
Pyramidula tetragona 1, 10, 47, 77
Rhodobryum roseum 3, 4, 6, 8-12, 16, 17, 20, 21, 31, 37, 39, 41, 42, 47, 48, 50-54, 58, 61-66, 72, 73, 76, 77, 85, 86, 88, 89, 93, 96-99
Rhytidadelphus triquetrus 10, 11, 20, 21, 37, 41, 42, 47, 52, 63, 64, 70, 77, 88
Rhytidium rugosum 10, 11, 41, 42, 53
Saelania glaucescens 21
Seligeria calcarea 11, 42, 52, 64
Seligeria campylopoda 8, 21, 42
Seligeria pusilla 10, 11, 20, 21, 42
Sematophyllum adnatum 29, 64
Sematophyllum carolinianum 9, 21, 35, 72, 73, 77, 86
Sphagnum capillaceum 52, 77
Sphagnum centrale (as *magellanicum*) 16
Sphagnum girgensohnii 52
Sphagnum magellanicum 52
Sphagnum palustre 16, 40, 51, 52, 65, 77
Sphagnum recurvum var. *tenue* 16
Sphagnum robustum 52
Sphagnum subsecundum 52
Sphagnum tenerum 21, 52, 71, 77
Sphagnum teres 16, 52
Tetraphis pellucida 11, 21, 37, 42, 63, 72, 77, 86
Thelia asprella 4, 5, 7-11, 16-18, 20, 21, 24, 29, 30, 36-38, 40-42, 47, 50, 52, 54, 58, 59, 61-64, 69, 70, 72, 74, 75, 77, 82, 83, 88, 93, 94, 96-98
Thelia hirtella 11, 42
Thuidium abietinum 1, 10, 11, 21, 41, 42, 53, 54
Thuidium delicatulum 4, 8-11, 17, 20, 21, 37, 41, 42, 48, 52-54, 63, 64, 72, 77, 87, 88, 96, 97, 99
Thuidium microphyllum 64, 86
Thuidium minutulum 10, 30, 53, 63, 64, 77
Thuidium philiberti 8, 10, 11, 42
Thuidium pygmaeum 11, 21, 42, 50, 52, 53, 72, 73, 77, 86, 99
Thuidium recognitum 4, 10, 11, 21, 37, 41, 42, 47, 48, 52-54, 61, 64, 70, 71, 75, 77, 86-88, 94, 96-99
Thuidium virginianum 1, 3, 4, 6, 9-11, 17, 20, 21, 29, 37, 38, 42, 52, 53, 61-64, 71, 73, 76, 77, 83, 86, 90, 95
Timmia megapolitana 3-6, 8-12, 14, 15, 17, 20-22, 31, 33, 35, 37, 41, 42, 46-48, 50-53, 55, 62-64, 66-68, 71, 76, 77, 88-90, 95, 96
Tortella fragilis 10, 11, 21, 41, 42, 53, 54
Tortella humilis 4, 9-11, 21, 52, 53, 70, 98
Tortella tortuosa 54
Tortula mucronifolia 1, 3, 4, 7-11, 14, 16-18, 20-22, 24, 37, 40-42, 51-53
Tortula muralis 1
Tortula pagorum 52, 94
Tortula ruralis 1, 10, 11, 42, 52
Trichostomum cylindricum 11
Weisia viridula 3, 4, 7, 9-11, 16-19, 21, 29, 30, 35-37, 40-42, 47-55, 58, 61-65, 67-72, 74, 75, 77, 85, 87, 88, 90, 92, 94, 96, 98, 99

HEPATICAE

- Bazzania trilobata* 21
Blasia pusilla 11, 21, 30, 41, 52, 61-64, 71, 72, 77, 86
Blepharostoma trichophyllum 11, 21, 77
Calyptogeia fissa 63, 99
Calyptogeia trichomanis 52, 63, 72, 77
Cephalozia bicuspidata 64, 77
Cephalozia connivens 42, 52, 77

- Cephalozia media* 53, 64, 77
Cephaloziella byssacea 10, 11, 21, 35, 61, 62, 77, 86
Cephaloziella hampeana 62, 74, 75, 77, 86
Cephaloziella pulchella 11 (C. rubella according to Schuster)
Chiloscyphus fragilis 10, 11, 35, 37, 39, 47, 64, 71, 73, 77
Chiloscyphus pallescens 4, 20, 41, 52
Chiloscyphus polyanthus 3, 10, 11, 35, 37, 47, 50, 61, 64, 77
Clevea hyalina 11 (according to Schuster)
Cololejeunea biddlecomiae 8, 10, 11, 21, 42, 53, 73
Conocephalum conicum 3, 4, 10, 11, 15, 17, 20-22, 31, 35-37, 41, 42, 46-48, 50, 52-54, 63-66, 68, 71-77, 86, 88-90, 94, 98
Frullania bolanderi 4, 16
Frullania eboracensis 1, 3-6, 8-11, 14, 17, 18, 20, 21, 28-30, 35, 37-42, 47-53, 58-68, 70-77, 80-89, 91-99
Frullania inflata 3, 4, 6, 7, 11, 12, 14, 15, 21, 22, 25, 31-33, 48, 53, 54, 60, 62, 63, 67-71, 79, 80, 82, 90-92
Frullania riparia 10, 11, 20-22, 41, 42, 51-54, 59, 64, 65, 70, 73, 74, 77, 89, 94, 95, 98, 99
Frullania squarrosa 11, 20, 21, 26, 35, 42, 52-54, 62, 64, 70, 73, 77, 85, 94, 95, 98
Harpanthus scutatus 21
Jamesoniella autumnalis 8, 10, 11, 20, 21, 35, 37, 47, 52, 62, 72, 77, 86
Jungermannia lanceolata 21
Jungermannia pumila 73, 77
Leiocolea badensis 11, 47, 98
Lepidozia reptans 10, 11, 21, 37, 42, 52, 63
Lophocolea heterophylla 4, 5, 8-11, 16, 20, 21, 31, 35, 37, 39-42, 47, 50, 52, 53, 61-64, 68, 71-74, 76-78, 84, 86-88, 90, 94, 96-99
Lophocolea minor 3, 4, 8-11, 21, 37, 40-42, 47, 51-53, 61, 63, 72, 73, 77, 86, 87, 99
Lophozia mildeana 62
Lophozia porphyroleuca 21
Lunularia cruciata 64
Mannia fragrans 1, 3, 4, 10, 11, 13, 14, 18, 20, 42, 52-54, 64, 72, 77
Mannia pilosa 10
Mannia rupestris 10, 11
Mannia subirica 11, 21
Marchantia polymorpha 3, 4, 6, 8-12, 15, 17, 18, 20, 21, 30-32, 35-37, 41, 46, 48, 50, 52-54, 60, 62-65, 69, 72, 73, 75-77, 94, 98
Nowellia curvifolia 86
Plagiochila asplenoides 4, 6, 8, 10, 11, 20, 21, 37, 41, 42, 47, 48, 50, 52, 53, 61-65, 70-73, 77
Plectocolea crenulata var. *gracillima* 52
Plectocolea hyalina 11, 35, 52, 61, 72, 73, 77, 86, 99
Porella pinnata 89
Porella platyphylla 11, 21, 37, 42, 53, 54, 58, 64, 73, 77
Porella platyphylloidea 4, 8-11, 17, 18, 20-22, 37, 40-42, 47, 48, 50-54, 58, 61, 63-65, 70, 72-74, 76, 77, 88, 89, 98, 99
Preissia quadrata 10, 11, 20, 21, 35, 37, 42, 47, 52, 53, 77
Ptilidium pulcherrimum 11, 21, 42, 53
Radula complanata 9, 11, 21, 42, 62
Reboulia hemisphaerica 1, 4, 10, 11, 20, 21, 30, 35, 37, 41, 42, 46-48, 50-54, 61-66, 68, 71-77, 88-90, 94, 96, 98, 99
Riccardia pinguis 3, 4, 16, 22, 31, 62, 77
Riccia beyrichiana 1, 15, 21, 29, 37, 39, 41, 47, 50, 51, 60-62, 77, 96
Riccia crystallina 4, 5, 11, 15, 21, 29-31, 37, 39, 50-52, 60-63, 76
Riccia fluitans 2-4, 6, 14-17, 24, 36, 48, 52, 61, 62, 64, 76, 78, 90, 94, 99
Riccia frostii 1, 3-5, 12, 15, 21, 29-31, 37, 39, 41, 50, 51, 60-63, 76
Riccia rhenana 3, 16, (and probably all listed as R. fluitans)
Riccia sullivantii 39, 43, 50, 60-62
Riccioarpus natans 3-7, 11, 13-15, 17, 24, 29-31, 37-41, 45, 47-52, 54, 60-64, 70, 73, 76-78, 88, 94, 98

Scapania nemorosa 21, 72, 73, 77, 86
Tricholea (Trichocolea) tomentella 63
Tritomaria exsecta 11, 21
Tritomaria exsectiformis 10, 21

ANTHOCEROTAE

Anthoceros crispulus 52, 61, 62
Anthoceros laevis 4, 9-11, 21, 37, 47, 48, 50, 52, 55, 61-65, 72-74, 76,
77, 86, 94, 99
Anthoceros punctatus 10, 15, 61-64, 77, 86, 94
Notothylas orbicularis 11, 15, 39, 50, 60-62, 94

LAKE HAMILTON, FLORIDA