1-1-1904

Lichens and Mosses of Montana, a List Based on Material Collected during the Summer of 1901, with Additions

University of Montana--Missoula. Biological Station, Flathead Lake

Wilson P. Harris

Carolyn W. Harris

Follow this and additional works at: https://scholarworks.umt.edu/umbiologicalseries

Let us know how access to this document benefits you.

Recommended Citation
University of Montana--Missoula. Biological Station, Flathead Lake; Harris, Wilson P.; and Harris, Carolyn W., "Lichens and Mosses of Montana, a List Based on Material Collected during the Summer of 1901, with Additions" (1904). University of Montana Bulletin: Biological Series, 1901-1910. 7. https://scholarworks.umt.edu/umbiologicalseries/7

This Book is brought to you for free and open access by the Flathead Lake Biological Station at ScholarWorks at University of Montana. It has been accepted for inclusion in University of Montana Bulletin: Biological Series, 1901-1910 by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.
Lichens and Mosses of Montana,
A LIST BASED ON MATERIAL COLLECTED DURING THE SUMMER OF 1901, WITH ADDITIONS.

BY
WILSON P. HARRIS AND CAROLYN W. HARRIS

PREPARED IN CONNECTION WITH THE WORK OF THE UNIVERSITY OF MONTANA BIOLOGICAL STATION, UNDER DIRECTION OF MORTON JOHN ELROD.

University of Montana, Missoula, Montana, U. S. A.
1904.

Entered August 24, 1901, at Missoula, Mont., as second class matter, under act of Congress July 16, 1894.
View of portion of the Swan River Valley, the Swan Range in the Background. On the left is Haystack. In the distance is Silinear Mountain. The big mountain in the foreground is Craig, only a portion of which is shown. This is typical of the country in which the collections were made. The whole region is wooded. Photo in July, 1902, by M. J. Elrod. The view is east.
Lichens and Mosses of Montana,
A LIST BASED ON MATERIAL COLLECTED DURING THE SUMMER OF 1901, WITH ADDITIONS.

BY
WILSON P. HARRIS AND CAROLYN W. HARRIS

PREPARED IN CONNECTION WITH THE WORK OF THE UNIVERSITY OF MONTANA BIOLOGICAL STATION, UNDER DIRECTION OF MORTON JOHN ELROD.

University of Montana, Missoula, Montana, U. S. A.
1904.
Introduction.

The material represented in this bulletin was collected by Wilson P. Harris, as will be noted later. The identifications were made by his mother, Mrs. Isaac Harris. As a basis for subsequent work I deem it advisable to record the results in permanent form, without attempting descriptions or keys for identification.

The localities marked with an * are from material collected by myself at different times, and identified by Prof. Bruce Fink. The notes enclosed in brackets are my own.

The illustrations were made at the University of Montana, due credit being given therefor. By consulting Bulletins Nos. 3, 4, 5 and 6 of the Biological Series many additional illustrations of the region may be seen, showing the character of the country, soil, mountain summits, etc.

The mosses were identified by Mrs. Elizabeth G. Britton, the well known authority for this group.

Duplicates of the collections made by Mr. Harris are in the possession of Mr. Harris and his mother, of the New York Botanical Garden at Bronx Park, and at the University of Montana at Missoula, Mont.

MORTON J. ELROD.

Missoula, Mont., June 17, 1903.
Preliminary Announcement.

These specimens were collected while I was with an expedition from the University of Montana, with the co-operation of the New York Botanical Garden, to collect biological specimens in the Flathead and Mission valleys in Flathead county, Montana. The time of collecting was about seven weeks, from the middle of June to the middle of August, 1901. The elevations varied between 2,600 and 7,700 feet above sea level.

Some collecting was done on the mountains around Missoula and in the valley of the Missoula river before the expedition set out. The mountains are steep pastured slopes, with occasional outcrops of shale. They are heavily wooded on the summits with Pinus ponderosa and Pseudotsuga taxifolia. The valley is a flat wooded plain, with a limestone silt soil and some white alkali.

The expedition travelled through the Missoula valley to O'Keefe canyon, then up this canyon to Evaro. The canyon is narrow and steep, with a small stream running through it. It is heavily wooded. The soil is scanty, with a large per cent of lime.

From Evaro the expedition travelled down to the Jocko valley, then to Selish. The valley is wide, covered with native prairie grass. From there the expedition moved to Sinyaleamin lake. This body of water is in a "pocket" in the Mission mountains. The country is heavily wooded with Engelmann's spruce, bull (yellow) pine and cedar. The soil is fine limestone silt over a glacial gravel. During the stay of five days excursions were made up the mountain sides and over the low pass to the south as far as the series of small ponds.

From Sinyaleamin the expedition moved to McDougal lake, which is about twenty miles to the north, in the same range. The timber here is principally bull pine and Douglas spruce, and is confined principally to the bottom of the valley. The mountain sides were very precipitous, covered with limestone shale and brush. Owing to the position of the lake and to the rainy weather, very little collecting was done except along the shores of the lake.

From McDonald lake a move was made to Mud creek, near its source in the mountains, a distance of thirty miles. The country is flat and heavily timbered with bull pine and larch (tamarack), with some spruce. The soil is deep rich clay loam. There is no appearance of alkali. At this place some specimens of water-loving mosses were found.

From Mud creek the next move was to the lower end of Flathead lake, on the east shore. During the stay of five days in this region collecting was done on the lake shore and well up the mountain sides. The soil
and vegetation was of the same general character as that of McDonald lake.

From this place the expedition moved directly to the University of Montana Summer Station at Bigfork. From this as a base excursions were made into the Swan range. The first was to Echo lake. On this trip MacDougal peak was ascended. Camp was later moved to Rost lake. From there a trip was made to Wolf creek canyon, to Silloway mountain, then around Wolf creek head, over Craig mountain, and return to camp. Wolf creek valley is heavily timbered with bull pine, larch and Douglas spruce. On the mountain side the Douglas spruce predominates, but near the summit of the range gives way to a small scrubby pine. The soil is scanty on the hills and is covered by a species of yucca known locally as bear grass.

On this trip the Usnea was noticed at the elevation of 5,800 feet on the south-western slopes, and not above 5,000 feet on eastern and northern slopes.

The second trip from Bigfork was to Swan lake. No collecting was done except along shore.

The distances between the various stations have never been measured and are rather uncertain. The elevations were determined by Prof. M J. Elrod, of the University of Montana.

W. P. HARRIS.

125 St. Marks Ave., Brooklyn, February 9, 1902.
List of Species of Lichens.

Acolium tympanellum (Ach.) De Not.
Bigfork, Flathead Lake, 2,960 ft., July 6, 1901.
Rost Lake, Alt. 3,000 ft., July 13, 1901.
Echo Lake,* Alt. 5,000 ft., August 12, 1901.

Alectoria jubata (L.), var. chalybeiformis Ach.
O'Keefe canyon, 4,000 ft., June 14, 1901.

Alectoria ochroleuca (Ehrh.) Nyl., var. rigida Fr.
O'Keefe canyon, Alt. 3,500 ft., June 14, 1901.

Alectoria ochroleuca (Ehrh.) Nyl. var. sarmentosa Nyl.
Rost Lake, Alt. 3,000 ft., July 20, 1901.
Craig Mountain, 6,150 ft., July 19, 1901.
Sinyaleamin Lake, 3,800 ft., June 21, 1901.

Alectoria fremontii Tuckm.
Sinyaleamin Lake, 3,800 ft., June 21, 1901.
*Missoula, Alt. 3,225 ft.

This is commonly spoken of as “black moss.” It seems to grow most luxuriantly on Douglas Spruce, Pseudotsuga mucronata (Raf.) Seed. It often trails from the limbs a foot or more. Sometimes it almost covers a small tree from top to base. Indeed, it is possible the lichen kills small trees by covering the leaves and shutting out the sun. In dense woods and damp places it grows in great abundance.

Baeomyces aeruginosus (Scop.) DC.
Wolf Creek, Alt. 3,000 ft., July 31, 1901.
Craig Mountain, 6,700 ft., July 19, 1901.

Biatora paddensis Tuck.
O'Keefe Canyon, 4,000 ft., June 14, 1901.
Rost Lake, 3,000 ft., July 15, 1901.

Biatora decipiens (Ehrh.) Fr.
Mission range, 3,000 ft., June 29, 1901.

Biatora rufonigra Tuckm.
Silloway Mountain, 7,650 ft., June 18, 1901.

Buellia petraea (Flot. Koerb.) Tuckm. var. montagnoei Tuck.

* This locality must be on the mountain side above Echo Lake. If not the altitude is incorrect, as this is almost on the same level as Rost Lake.
Buellia geographica (L.) Tuckm.
McDonald Lake, 3,800 ft., June 23, 1901.

Buellia cidalea Tuckm.
Rost Lake, 3,000 ft., July 15, 1901.

Calicium quercinum Pers.
Echo Lake, Alt. 3,000 ft., August 12, 1901.

Cetraria platyphylla Tuckm.
O'Keefe canyon, 4,000 ft., June 14, 1901.
* Lo Lo Hot Springs, Alt. 5,000 ft., June, 1897.
Sinyaleamin lake, 3,800 ft., June 29, 1901.

Cetraria ciliaris (Ach.) Tuck.
* Lo Lo Hot Springs, Alt. 5,000 ft., June 25, 1897.

Cetraria glanca (L.) Ach.
O'Keefe Canyon, 4,000 ft., June 14, 1901.
McDonald Lake, 3,800 ft., June 22, 1901.
Mud Creek, 2,700 ft., June 28, 1901.
Swan Lake, 3,200 ft., Aug. 16, 1901.
* Lo Lo Hot Springs, Alt. 5,000 ft., June 25, 1897.
Sinyaleamin Lake, 3,800 ft., June 21, 1901.

Cetraria juniperina (L) Ach.
Sinyaleamin Lake, 3,800 ft., June 21, 1901.
Swan Lake, 3,200 ft., Aug. 16, 1901.
* Lo Lo Hot Springs, Alt. 5,000 ft., June 27, 1897.

Cladonia amaurocraea (Fl.) Schaer.
McDonald Lake, Alt. 3,800 ft., June 24, 1901.

Cladonia caespiticia (Pers.) Fl.
Silloway Mountain, Alt. 7,750, July 18, 1901.

Cladonia cariosa (Ach.) Spreng.
McDonald Lake, Alt. 3,800 ft., June 23, 1901.

Cladonia crispeata (Ach.) Flot., var. infundibulifera (Schaer.) Wa
McDonald Lake, Alt. 3,800 ft., June 24, 1901.

Cladonia coccifera (L.) Willd., var. pleurota (Flk.) Willd. Craig
Mountain.

Cladonia cornuta (L.) Fr.
McDonald Lake, Alt. 3,800 ft., June 25, 1901.

Cladonia deformis (L.) Hoffm.
Sinyaleamin Lake, Alt. 3,800 ft., June 21, 1901.

Cladonia digitata (L.) Hoffm.
Flathead Lake, Alt. 2,900, July 8, 1901.

Cladonia fimbriata (L.) Fr.
* Flathead Lake, Aug., 1899.
* Lo Lo Hot Springs, Alt. 5,000 ft., June 25, 1897.
On rotten wood.  Abundant on decaying logs.
Cladonia fimbriata (L.) Fr., var. radiata Fr.
* Missoula, Alt. 3,225.

Cladonia fimbriata (L.) Fr., var. tubaeformis Fr.
Mud Creek, Alt. 3,000 ft., June 28, 1901.

Cladonia gracilis (L.) Nyl., var. verticellata Fr.
Sinyaleamin Lake, Alt. 3,800 ft., June 20, 1901.

Cladonia gracilis (L.) Nyl., var. symphycarpia Tuckm.
Sinyaleamin Lake, Alt. 3,800 ft., June 20, 1901.

McDonald Lake, Alt. 3,300 ft., June 24, 1901.

Cladonia pyxidata (L.) Fr.
Stage Station, Flathead Lake, Alt. 2,960, June 28, 1901.
Bigfork, Alt. 3,000 ft., July 6, 1902.
* Flathead Lake, Alt. 3,000 ft., Aug., 1899.
* Missoula, Alt. 3,225 ft.

Cladonia turgida (Ehrh.) Hoffm. var. conspicua (Schaer.) Nyl.
* Lo Lo Hot Springs, Alt. 5,000 ft., June 25, 1897.

Cladonia rangifernia (L.) Hoffm., var. sylvatica L.
Sinyaleamin Lake, Alt. 3,800 ft., June 19, 1901.
McDonald Lake, Alt. 3,300 ft., June 24, 1901.
* Flathead Lake, Alt. 3,000 ft., Aug., 1897.

Endocarpon miniatum Ach.
Sentinel Mt., 5,000 ft., on damp rocks, June 12, 1901.

Evernia vulpina (L.) Ach.
Sentinel Mountain, Alt. 5,000 ft., June 12, 1901.
Sinyaleamin Lake, Alt. 3,800 ft., June 20, 1901.
* Flathead Lake, Alt. 3,000 ft., Aug., 1899.

(This beautiful yellow lichen, see plates LVIII and LXII, is very abundant, growing on dead trees and stumps, usually selecting yellow pine. Sometimes tall dead trees are covered from base to crown with this growth, presenting a beautiful sight. Not only does it grow abundant, but it becomes large. It grows in masses, sometimes many feet in length and width of a limb or trunk.)

Lecanora atra (Huds.) Ach.
Flathead Lake, Alt. 3,000 ft., July 20, 1901.
Rost Lake, Alt. 3,200 ft., July 20, 1902.

Lecanora cervina (Pers.) Nyl., var. cinerevella Fink.
Craig Mountain, Alt. 7,250 ft., July 19, 1901.

Lecanora pallescens (L.) Ach.
Growing on mosses.

Lecanora chlorophana (Wahl.) Ach.
Craig Mountain, Alt. 7,250 ft., July 19, 1901.

Lecanora punicea Ach.
Rost Lake, Alt. 3,200 ft., June 15, 1901.
Lecanora rubina (Vill.) Ach.
Sentinel Mountain, Alt. 5,000 ft., June 12, 1901.

Lecanora subfusca (L.) Ach.
Flathead Lake, Alt. 3,000 ft., July 20, 1901.
Post Creek, 2,800 ft., June 22, 1901.

Leptogium Sp.
Undetermined because of lack of fruiting plants.
*Missoula, Alt. 3,225, 1897.

Lecanora xanthophana Nyl. var. dealbata Tuck.
Craig Mountain, Alt. 7,250 ft., July 19, 1901.

Parmelia conspersa (Ehrh.) Ach.
Post Creek, Alt. 2,800 ft., June 22, 1901.
McDonald Lake, Alt. 3,300 ft., June 23, 1901.
*Missoula, Alt. 3,225, 1899.

Parmelia olivacea (L.) Ach.
Sentinel Mountain, Alt. 5,000 ft., June 12, 1901.
St. Ignatius, Alt. 2,800 ft., June 17, 1901.
Post Creek, Alt. 2,800 ft., June 22, 1901.

Parmelia physodes (L.) Ach.
*Lo Lo Hot Springs, Alt. 5,000, June 25, 1897.

Parmelia physodes (L.) Ach., var. vittata Ach.
Sentinel Mountain, Alt. 5,000 ft., June 12, 1901.
Sinyaleamin Lake, Alt. 4,000 ft., June 18, 1901.
*Lo Lo Hot Springs, June 25, 1897.

Parmelia physodes (L.) Ach var. enteromorpha Tuck.
*Lo Lo Hot Springs, Alt. 5,000, June 25, 1897.

Parmelia saxatilis (L.) Fr.
Sinyaleamin Lake, Alt. 3,800 ft., June 19, 1901.
*Flathead Lake, Alt. 3,000 ft., Aug. 1, 1899.

Parmelia saxatilis (L.) Fr., var. sulcata Nyl.
O'Keefe Canyon, Alt. 4,000 ft., June 14, 1901.
McDonald Lake, Alt. 3,300 ft., June 25, 1901.
*Lo Lo Hot Springs, Alt. 5,000 ft., June 25, 1897

Peltigera apthosa (L.) Hoffm.
Sinyaleamin Lake, Alt. 3,800 ft., June 20, 1901.
*Missoula, Alt. 3,225, June 6, 1897.
*Lo Lo Hot Springs, Alt. 5,000. June 25, 1897.
*Flathead Lake, Alt. 3,000, Aug., 1899.
Peltigera canina (L.) Hoffm.
Sinyaleamin Lake, Alt. 3,800 ft., June 20, 1901.
O’Keefe Canyon, Alt. 3,000 ft., June 14, 1901.
McDonald Lake, Alt. 3,300 ft., June 23, 1901.
* Flathead Lake, Alt. 3,000 ft., Aug., 1899.
* Missoula, Alt. 3,225, June 8, 1897.

Peltigera venosa (L.) Hoffm.
Bigfork, Alt. 3,000 ft., July 8, 1901.

Placodium Elegans (Link.) D. C.
McDonald Lake, Alt. 3,300 ft., June 24, 1901.
* Missoula, Alt. 3,225, Aug., 1898.

Physcia stellaris (L.) Tuckm.
St. Ignatius, Alt. 2,800 ft., June 17, 1901.

Physcia stellaris (L.) Tuckm., var. aipolia Nyl.
Flathead Lake, Alt. 3,000 ft., July 6, 1901.

Placodium oreina (Ach.) Mass.
On rocks.

Ramalina calicaris (L.) Fr., var. fastigiata Fr.
Flathead Lake, Alt. 3,000 ft., Aug. 14, 1901.

Sticta pulmonaria (L.) Ach.
Mud Creek, Alt. 2,700 ft., June 28, 1901.
McDonald Lake, Alt. 3,300 ft., June 24, 1901.

Theloschistes Lychnens (Nyl.) T.
Bigfork, Alt. 3,000, July 6, 1901.
* Missoula, Alt. 3,225 ft., Oct. 11, 1898.

Umbilicaria hyperborea Hoffm.
McDonald Lake, Alt. 3,300 ft., June 23, 1901.

Umbilicaria phaea Tuckm.
McDonald Lake, Alt. 3,300 ft., June 23, 1901.

Umbilicaria vellea (L.) Nyl.
McDonald Lake, Alt. 3,300 ft., June 13, 1901.
* Lo Lo Hot Springs, Alt. 5,000 ft., June 25, 1897.
(This is a beautiful species, jet black beneath, greenish brown or brown above. It covers the wet surfaces of rocks with its broad, thick thallus, often to the extent of several square yards.)

Usnea barbata (L.) Fr.
Sentinel Mountain, Alt. 5,000 ft., June 12, 1901.
Mud Creek, Alt. 2,700 ft., June 28, 1901.
* Flathead Lake, Alt. 3,000 ft., August, 1899.

Usnea barbata (L.) Fr., var. hirta Fr.
Sentinel Mountain, Alt. 5,000 ft., June 12, 1901.

Usnea cavernosa Tuckm.
McDonald Lake, Alt. 3,300 ft., June 26, 1901.
List of Mosses.

Atrichum selwyni Aust.
O'Keefe Canyon, 3,000 feet, on clay, June 14, 1901.

Aulacomnium androgyoniom Schwaegr.
McDonald Lake, Mission Mountains, 3,300 feet, June 23, 1901.

Amblystegium varium (Hedw.) Lindt.
Mud Creek 2,700 ft., on earth, June 28, 1901.

Campothecium aeneum Mitt.
Old Stage Station, east side Flathead Lake, 2,600 feet, on dead Pinus ponderosa, June 28, 1901.

Bryum bimum Schreb., same as
Ceratodon purpureus Brid.
Mud Creek, 2,700 feet, June 28, 1901.

Climacium dendroides Met. and Wohr.
McDonald Lake, 3,300 ft., on earth in swamp, June 24, 1901.

Dicranum bergeri Bland.
McDonald Lake, Mission Mountains, 3,300 feet, June 25, 1901.

Dicranum fragilifolium Lindt.
Mud Creek, 2,700 feet, June 28, 1901.
McDonald Lake, Mission Mountains, June 24, 1901.

Dicranum strictum Schleich.
O'Keefe Canyon, 3,000 feet, on dead wood, June 14, 1901.

Eucalypta macounii Aust.
McDonald Lake, Mission Mountains, 3,300 feet, on earth, June 25, 1901.

Euhrynchium strigosum B. & S.
McDonald Lake, Mission Mountains, 3,800 feet, June 23, 1901.

Fontinalis antipyretica L.
Mud Creek, 2,700 feet, in water, June 28, 1901.

Grimmia calyptrata Hook.
Missoula, 3,200 feet, wet rocks, June 13, 1901.

Grimmia montana B. and S.
Bigfork, 2,900 ft., on dry rocks, June 26, 1901.

Hylocomium triquetrum (L.) B. & S.
McDonald Lake, Mission Mountains, 3,300 feet, June 25, 1901, in cedar swamp.
Hylocomium proliferum (L.) Lindb.
McDonald Lake, Mission Mountains, 3,300 feet, in cedar swamp, June 25, 1901.

Hylocomium cuspidatum L.
Mud Creek, 2,700 feet, on dead wood, June 28, 1901.

Hylocomium fluitans L.
Daphni Pond, 2,700 feet, in swamp, July 5, 1901.

Hylocomium giganteum Schimp.
Mud Creek, 2,700 feet, June 28, 1901.

Hylocomium subimponens Lesq.
McDonald Lake, Mission Mountains, 3,300 feet, on damp rocks, June 24, 1901. Also found on earth.

Hylocomium uncinatum Hedw.
McDonald Lake, 3,300 ft., on wood, June 25, 1901.

Leptobrium pyriforme Schimp.
O'Keefe Canyon, 3,000 feet, on clay, June 14, 1901.

Mnium affine Bland.
McDonald Lake, Mission Mountains, 3,300 feet, June 25, 1901.

Mnium insigne Mitt.
McDonald Lake, Mission Mountains, in cedar swamp, 3,300 feet, June 24, 1901.

Mnium medium B. & S.
McDonald Lake, Mission Mountains, in cedar swamp, 3,300 feet, June 24, 1901.

Mnium orthorrhynchum B. and S.
McDonald Lake, 3,300 feet, in cedar swamp, June 25, 1901.

Mnium punctatum Hedw.
McDonald Lake, 3,300 ft., on damp earth, June 25, 1901.

Mnium spinulosum B. and S.
McDonald Lake, Mission Mountains, 3,300 feet, on earth, June 24, 1901.

Mnium venustum Mitt.
McDonald Lake, Mission Mountains, 3,300 feet, June 25, 1901.

Neckera douglasii Hook.
McDonald Lake, Mission Mountains, 3,300 feet, on wet rocks, June 25, 1901.

Orthotrichum speciosum Nels. same as
Grimmia orata Met. and Wohr.
McDonald Lake, 3,300 ft., in cedar swamp, June 24, 1901.

Orthotrichum rupestre Schleich.
McDonald Lake, 3,300 ft., on earth with lichens, June 24, 1901.
**Summary**

Lichens, genera 20, Species 67.
Mosses, genera 19, Species 37.
Total, genera 39, Species 104.
1. Parmelia physodes var vittata.
2. Cetraria platyphylla.
3. Cetraria juniperina.
4. Cetraria glanca.
1. Cladonia rangiferina var sylvatica.
2. Cladonia cariosa.
3. Cladonia deformis.
4. Cladonia cornuta.
Sticta pulmonaria (L.) Ach.
Evernia vulpina (L) Ach., one of the most common lichens in the northwest.
Bulletins of the University of Montana, Biological Series.

No. 1. Summer Birds of Flathead Lake, by P. M. Silloway. 84 pp., Plates I—XVI.

No. 2. Announcement of the Fourth Annual Session of the University of Montana Biological Station. 4 pp.


No. 4. Announcement of the Fifth Annual Session of the University of Montana Biological Station. Pp. 183—190, 4 ills.

No. 5. Lectures Delivered at the University of Montana Biological Station during the Session of 1902. Pp. 191—288, plates XLVII—LII, figs. 4—31.
