

Report: Les Mehrhoff Botanical Research Fund

Bryoflora of Mt. Greylock 110 Years Later

By Susan A. Williams. December 3, 2015.

Background:

Approximately 110 years ago A. Leroy Andrews did one of the most complete bryofloras known in Massachusetts at the time. He surveyed the Mt. Greylock region in Berkshire County over several summers from 1901-1911 and was ahead of his time in thinking that a systematic approach might be more useful than the sporadic collecting that had occurred up to that point. In 1960, when F. J. Hilferty published his "Mosses of Massachusetts", over 75% of the specimens cited for Berkshire county came from Andrews' survey at the turn of the century.

Even today when we know that bryophytes comprise a unique and critical component of communities, they are rarely included in survey work and are poorly documented. Currently there is no complete listing of the bryophytes for Massachusetts or anything documenting rarity.

Since we know that both mosses & liverworts have been used as indicators of atmospheric changes as well as pollutants due to their sensitivity to such changes, a re-survey of Mt. Greylock could help us to understand how the bryoflora has changed over the last 100 years and also to provide a new baseline for future survey work. This could be valuable, as well, in helping to understand how climate change might affect the bryophyte layer over the next 100 years.

Methods:

The first task was to update the nomenclature in Andrews lists. Next, using Andrew's publications, I ascertained as well as possible the areas he likely collected. He was unspecific in his first publication only saying that he collected at "various points in the townships of Williamstown, New Ashford, North Adams and Adams" and confined his list "to the mountain region, from brook-beds at base to its summit." Using topographic maps I then chose several locations in the Greylock region to survey including the summit and areas north, west, south & east from lower elevations to the summit and including woodlands, brooks, swamps, limy areas, rocks & ledges to try and get the highest diversity possible. I also used surveys I did in 2011 as part of a Bioblitz done on Mt. Greylock. These included some of the summit, the CCC Dynamite Trail, Jones Nose and Money Brook Falls and trail.

My survey approach in the beginning of the field season was to go to a specific location, identify as many species in the field as possible and collect the rest for further determinations. I remained in the area until I was not finding anything new. I also made note of the most dominant mosses at that site. Later in the season I was more interested in finding specific mosses that I was missing and I would then go to a specific place where I thought I might find it, and also do broader surveys i.e. walk along trails through many habitats and noting the species found.

Results:

The areas I surveyed were as follows (see also Appendix 1):

<u>Survey Date</u>	<u>Elevation (ft)</u>	<u>Location</u>	<u>#of Species collected</u>
6/10/11 & 10/29/15	2900-3491	Summit & Overlook Trail	72
6/10/11 & 6/13/11	2750	CCC Dynamite Trail	53
6/13/11	2500	Jones Nose	44
6/15/15	2000	Money Brook Falls & Trail	55
5/25/15	2500	Ragged Mt.	56
7/12/15	1500	Bellows Pipe Trail	54
8/5/15	2600	Rounds Rock,	37
8/5/15	2350	Beaver Swamp on Northrup Trail	26
8/5/15	2400	New Ashford Scenic Pullout	13
8/19/15	3250	Outlook Trail Pond, Gould Tr	64
8/22/15	1250	Lower Money Brook Falls Trail	18
9/16/15	2750	Robinson's Point	51
9/16/15	1350	Greylock Glen #1	41
9/26/15	1500-1750	Hopper Brook	50
10/11/15	1500	Greylock Glen #2, Thiel Farm area	71
10/22/15	1400-2250	Gould Trail to Cheshire Harbor Trail	50
10/25/15	1250-2250	Roaring Brook Trail to Deer Hill Falls	49
11/7/15	2750-3000	Jones Nose, AT South, Old Adams Rd	64

Of the original 148 species of moss that A. LeRoy Andrews listed, I re-found 117, for a total recovery of almost 80%. 31 species remained elusive (See Appendix 2 for notation on those species as to whether they are likely to be there). I also found 51 additional species not listed by Andrews.

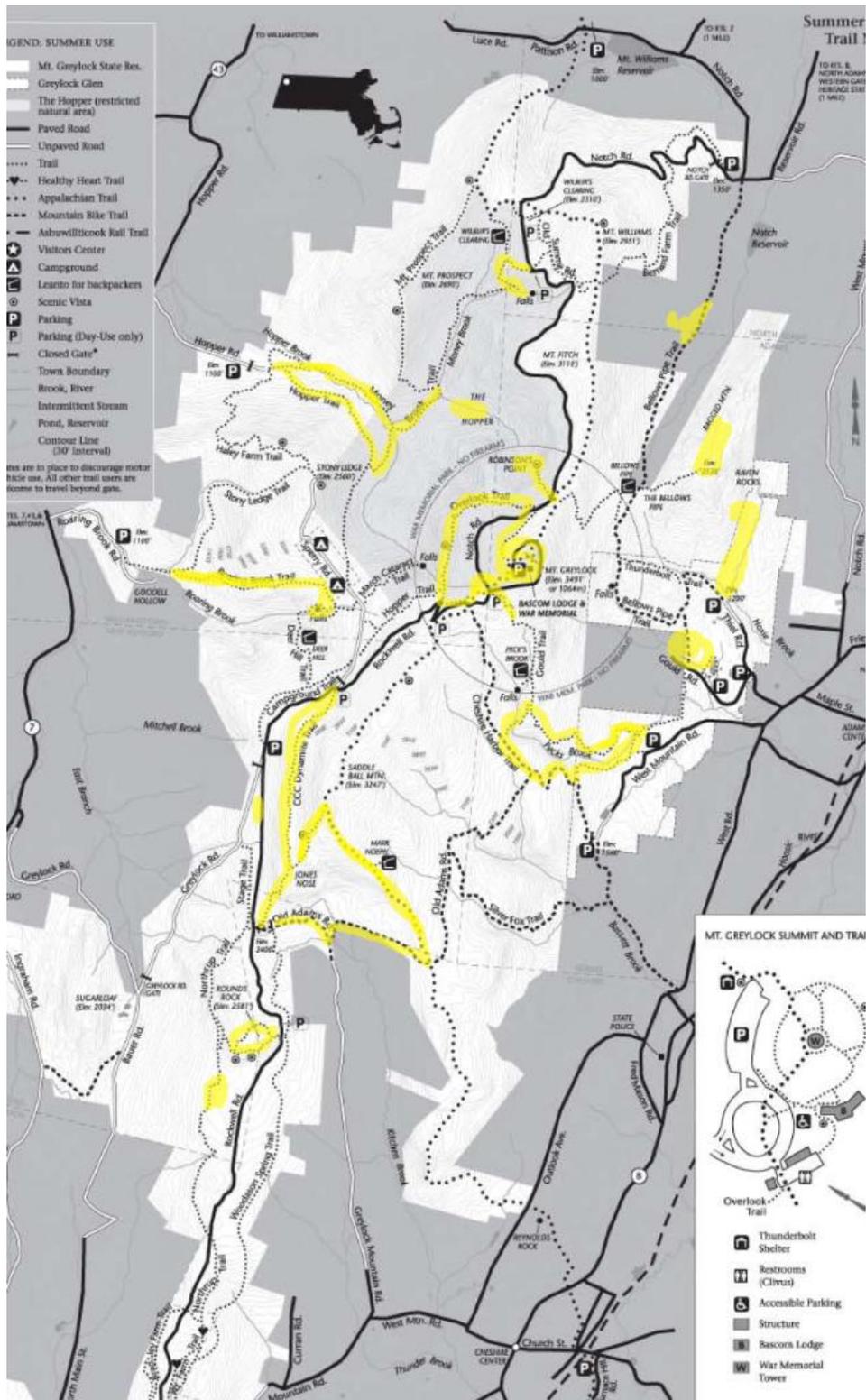
Of the total 168 species that I found, 34 species turned up in over half of the places I collected and they were widespread and fairly common. (see Appendix 2). 51 species were found in only one location, however many of these updated old or historic records for Berkshire county.

Uncommon species I collected:

- Amphidium lapponicum* – Deer Hill falls in splash zone on ledge
- Dichodontium pellucidum* – CCC Dynamite trail
- Dicranella schreberiana* – Greylock Glen on wet soil in cattail swamp near trail
- Grimmia muehlenbeckii* – in ledge crevice at scenic overlook on AT South
- Hygrohypnum duriusculum* – Off Bellows Pipe trail on rock in brook
- Hylocomium umbratum* – near summit, on Overlook trail & Robinson Pt on ground
- Philonotis marchica* - Greylock Glen on wet soil in cattail swamp near trail
- Polytrichum longisetum* – At summit, on ledges near parking area
- Rhytidiadelphus squarrosus* – in wet area near trail to Robinsons Point
- Sematophyllum marylandicum* – on rock near Money Brook Falls
- Syntrichia ruralis* – on exposed ledge at Jones Nose in open field

Specimens that I collected will be packaged and sent to the NEBC Nonvascular Herbarium at Harvard.

APPENDIX 1



The locations in yellow are the areas where I surveyed

APPENDIX 2

The following list summarizes the species of moss collected in the Mt Greylock region:

Moss Species	
<i>Abietinella abietina</i>	Black = species Andrews listed that I also found
<i>Amblystegium serpens</i>	Blue = species Andrews found that I did not
<i>Amblystegium varium</i>	Red = species I found that Andrews did not
<i>Amphidium lapponicum</i>	
<i>Anacamptodon splachnoides</i>	Names followed by an * were species that were common &
<i>Andreaea rupestris</i>	occurred in over half the sites I collected
<i>Anomodon attenuatus</i> *	
<i>Anomodon minor</i>	
<i>Anomodon rostratus</i> *	
<i>Anomodon rugellii</i>	
<i>Anomodon viticulosis</i>	
<i>Aphanorregma serrulatum</i>	
<i>Atrichum altecristatum</i> *	
<i>Atrichum angustatum</i> *	
<i>Atrichum crispum</i>	
<i>Aulacomnium heterostichum</i>	- Likely to be found with more searching, more common southward
<i>Aulacomnium palustre</i>	
<i>Bartramia pomiformis</i>	
<i>Barbula unguiculata</i>	
<i>Blinda acuta</i>	
<i>Brachythecium campestre</i> * (old <i>salebrosum</i>)	
<i>Brachythecium curtum</i>	
<i>Brachythecium laetum</i> *	
<i>Brachythecium plumosum</i>	
<i>Brachythecium populeum</i>	
<i>Brachythecium reflexum</i> *	
<i>Brachythecium rutabulum</i>	
<i>Brotherella recurvans</i> *	
<i>Bryhnia graminicolor</i>	
<i>Bryhnia novae-angliae</i> *	
<i>Bryoandersonia illecebra</i>	
<i>Bryum algovicum</i>	- Possible, infrequent, possibly overlooked. Determination of original needed
<i>Bryum argenteum</i>	
<i>Bryum capillare</i>	
<i>Bryum caespiticium</i>	
<i>Bryum lisae</i> var. <i>cuspidatum</i>	
<i>Bryum pseudotriquetrum</i>	
<i>Buxbaumia minakatae</i>	- Likely, but very infrequently found

Callicladium haldanianum*
Calliergon cordifolium
Calliergonella cuspidata - Likely, especially in Greylock Glen area in limy wetlands
Campylium chrysophyllum
Campylium hispidulum - Likely, easy to overlook. On logs or tree bases
Campylium sinuolatum - Used to be combined with Campylium chrysophyllum
Campylium stellatum
Ceratodon purpureus
Climacium americanum
Climacium dendroides
Conardia compacta - Doubtful. Determination of original specimen needed
Cratoneuron filicinum - Possible, especially in Greylock Glen area in limy wetlands
Ctenidium molluscum - Possible, on limy soil
Dichodontium pellucidum
Dicranella heteromalla*
Dicranella schreberiana
Dicranella varia - Possible, on limy soil
Dicranum flagellare*
Dicranum fulvum*
Dicranum montanum*
Dicranum polysetum
Dicranum scoparium*
Dicranum bonjeanii
Dicranum viride
Didymodon rigidulus – Possible. Andrews found on rocks high in the Hopper
Diphyscium foliosum*
Ditrichum lineare
Ditrichum pusillum
Drepanocladus aduncus
Drummondia prorepens – Possible. More common here in the past. Southern species.
Entodon cladorrhizans
Endotodon seductrix
Eurhynchium hians
Eurhynchium pulchellum
Fissidens adianthoides
Fissidens bryoides
Fissidens bushii
Fissidens dubius
Fissidens osmundioides – Possible
Fissidens taxifolius
Funaria hygrometrica
Grimmia muehlenbeckii

Gymnostomum aeruginosum
Haplohymenium triste
Hedwigia ciliata*
Helodium elodioides
Herzogiella striatella*
Herzogiella turfacea – Likely. Easily overlooked on logs.
Homalia trichomannoides
Homomallium adnatum
Hygroamblystegium tenax
Hygrohypnum duriusculum – would be equal to Andrews’ finding of Hygrohypnum molle
Hygrohypnum eugyrium
Hygrohypnum montanum – Possible, on rocks in streams. Uncommon.
Hygrohypnum ochraceum
Hylocomium brevirostre
Hylocomium splendens
Hylocomium umbratum
Hymenostylium recurvirostrum – Possible, on limy rocks
Hypnum cupressiforme
Hypnum curvifolium – Unknown, very similar to H. lindbergii
Hypnum imponens*
Hypnum lindbergii
Hypnum pallescens*
Hypnum pratense – Unknown, very similar to H. lindbergii as well
Isopterygiopsis muellariana
Leptobryum pyriforme – Likely in disturbed places
Leptodictyum riparium
Leskea gracillescens
Leskea polycarpa
Leskeella nervosa
Leucobryum glaucum*
Leucodon andrewsianus
Mnium hornum
Mnium marginatum
Mnium spinulosum
Mnium stellare
Mnium thomsonii
Myurella sibirica
Neckera pennata
Orthotrichum anomalum
Orthotrichum obtusifolium
Orthotrichum ohioense
Orthotrichum sordidum*

Orthotrichum stellatum
Paraleucobryum longifolium*
Philonotis fontana
Philonotis marchica
Physcomitrium pyriforme – Likely in disturbed places
Plagiomnium ciliare*
Plagiomnium cuspidatum*
Plagiothecium cavifolium*
Plagiothecium denticulatum
Plagiothecium laetum
Platydictya confervoides – Possible. Very tiny and easily overlooked
Platydictya jungermannioides
Platydictya subtilis – Possible. Very tiny and easily overlooked
Platygyrium repens*
Pleurozium schreberi
Pogonatum dentatum
Pogonatum pennsylvanicum
Pogonatum urnigerum – Likely, near summit
Pohlia annotina
Pohlia cruda
Pohlia elongata – Doubtful, often misidentified. Usually long-necked form of <i>P. nutans</i>
Pohlia filum – Doubtful, not in our area. Originally listed as <i>Pohlia Rothii</i> (Correns) Broth.
Pohlia nutans*
Polytrichastrum alpinum
Polytrichum commune*
Polytrichum juniperinum
Polytrichum longisetum
Polytrichum ohioense
Polytrichum pallidisetum *
Polytrichum piliferum
Pseudotaxiphyllum distichaceum
Pseudotaxiphyllum elegans
Pterigynandrum filiforme
Ptilium crista-castrensis
Pylaisia intricata – Possible, easy to confuse with other Pylaisia species
Pylaisia selwynii
Racomitrium aduncooides – Used to be included with <i>Racomitrium aciculare</i>
Racomitrium sudeticum – Possible
Racomitrium venustum – This is probably what Andrews listed as <i>Racomitrium heterostichum</i>
Rauarella scita
Rhabdoweissia crispata
Rhizomnium punctatum*

Rhodobryum ontariense
Rhyncostegium serrulatum
Rhytidiadelphus squarrosus
Rhytidiadelphus triquetrus
Sanionia uncinata
Schistidium apocarpum
Schistidium rivulare
Sematophyllum marylandicum
Sphagnum capillifolium
Sphagnum compactum
Sphagnum cuspidatum
Sphagnum fallax
Sphagnum fimbriatum
Sphagnum fuscum - Possible
Sphagnum girgensohnii
Sphagnum magellanicum
Sphagnum palustre
Sphagnum recurvum – Possible
Sphagnum russowii – Likely
Sphagnum squarrosum
Sphagnum tenerum – Doubtful. Past taxonomic confusion with <i>S. capillifolium</i>
Sphagnum warnstorffii – Possible, in limy wetland
Syntrichia ruralis
Taxiphyllum deplanatum
Tetraphis pellucida*
Thuidium delicatulum*
Thuidium recognitum
Tomenthypnum nitens
Torrentaria riparioides
Tortella tortuosa
Trichostomum tenuirostre
Ulota crispa*
Ulota coarctata
Ulota hutchinsaie

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