

# OBELISK

**Ohio Bryology et Lichenology, Identification, Species, Knowledge**

**Newsletter of the Ohio Moss and Lichen Association. Volume 17 No. 1. 2020.**

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## LEFT HAND CORNER

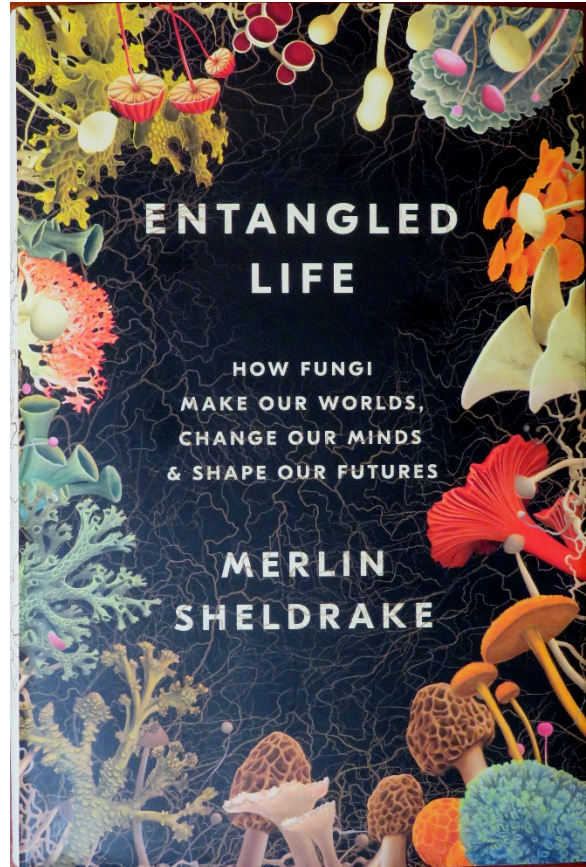
### REQUIRED READING

The primary goals of the OMLA are to add to the knowledge of bryophyte and lichen distribution in Ohio and to stimulate interest in these often-neglected groups of organisms. We have been very successful with this first goal as detailed by an article later in this issue. Our members have addressed the second goal by giving presentations and workshops on a number of occasions. I have also tried to further the second goal by suggesting in previous issues of OBELISK books on lichens and bryophytes which I found to be particularly interesting

This issue contains two more book recommendations in the NEWS & NOTES section. I am also, for the first time, featuring a book in the LEFT HAND CORNER. Entangled Life – How Fungi Make Our World, Change Our Minds & Shape Our Futures is a book about mycology, symbiosis and the connectedness of life on earth. The author, Merlin Sheldrake, writes a fascinating, easy-to-read story of fungi and their myriad relationships with other organisms.

Fungal biology and ecology are made understandable and interesting by “gee whiz” narratives about lichens, luminous fungi, mycorrhizae, truffles,

mycoheterotrophic plants, parasitic fungi which control ant behavior (zombie ants) and magic mushrooms. Something that I did not know – there is even a magic lichen which produces the same psychoactive chemical as magic mushrooms.



If I were planning a seminar on mycology, I would make this book required reading. So, pretend you signed up for the seminar, read the book and let me know what you think.

– Ray Showman

## **MOSS MUSINGS: A TRIBUTE TO OMLA MEMBER, DIANE LUCAS**

Every now and then you meet someone who lives by the philosophy that “you can do a lot if you don’t care who gets the credit”. That person is Diane Lucas. She is an integral part of the Ohio Moss and Lichen Association, often in the background, but playing important roles.

Diane Lucas entered my life 24 years ago when she signed up for a lower plant morphology class that I was teaching at Kent State University (KSU). Diane **REALLY** wanted to learn all she could about bryophytes. The course was offered shortly after the publication of *A Catalog and Atlas of the Mosses of Ohio* (Snider & Andreas 1996). Jefferson County was the only county with no reports of mosses. We decided to collect and publish the bryophytes of Jefferson County. About once a week, over several years, we drove to Jefferson County and found places to collect. That effort resulted in our first publication together (Andreas & Lucas 2006).

Having attained confidence, Diane took on projects like collecting the bryophytes of Cattaraugus County, NY, and Bradley Woods, part of the Cleveland Metro Parks. She established and put on the Consortium of North American Bryophyte Herbaria ([bryophyteportal.org](http://bryophyteportal.org)), a bryophyte herbarium at the Cleveland Museum of Natural History.

For years Diane would come to KSU weekly to work on the identification of mosses. Together we traveled to various bryology events such as the Blomquist and Andrew Forays. Diane has attended all 15 of the Crum Bryological Workshops. Few have

been so dedicated. Diane is also one of the founding members of the Ohio Moss and Lichen Association.

After the publication of the 1996 atlas, we continued to keep records of new county records of the distribution of Ohio mosses. We kept each new record in a notebook that Diane lovingly refers to as the “blue book”. However, she knew she could do better. Diane took a class to learn to use a database program, and soon the information in the 1996 atlas and all new records were put into a database. The OMLA digital maps ([ohiomosslichen.org](http://ohiomosslichen.org)) occur because of Diane’s efforts.



**Photo by Karen Lucas**

Diane grew up in Olean, NY and graduated from Elmira College and St. Bonaventure University. She was trained as a chemist and her professional career began at NASA. There she met and married Jim Lucas, and together they raised two daughters, Karen and Sandy. During that phase of her life she developed an interest in astronomy and solar eclipses. She built her own telescopes and learned to grind the necessary mirrors. That interest took her all over the world chasing solar eclipses.

If you search the Consortium of North American Bryology Herbaria

([bryophyteportal.org](http://bryophyteportal.org)), you'll find that, as of 2020, Diane has submitted 6,147 herbarium records, which represents 500 species, scattered over 13 US herbaria. That's quite an accomplishment for someone who never looked at a bryophyte until age 65.

Andreas, B.K. and D. Lucas. 2006. The bryophyte flora of Jefferson County, Ohio. *Castanea* 71: 160–169.

Snider, J.A. and B. K. Andreas. 1996. A Catalog and Atlas of the Mosses of Ohio. *Ohio Biol. Surv. Misc. Cont.* No. 2. Columbus, OH 105 p.

– **Barbara K. Andreas**

### FROM MOONS TO MOSSES

She started out at NASA,  
then went on to other things,  
from planets and moons to mosses,  
and the joy that learning brings.

Diane has worked behind the scenes,  
more than most people realize,  
in addition to learning moss ID,  
she learned how to digitize.

Then she put this knowledge to work,  
bringing Ohio up to date,  
with bryology distribution lists,  
and maps for all the state.

This has been a tedious task,  
but hopefully it has been fun,  
so thanks from all of us Diane,  
for a difficult job well done!

- **Ray Showman**

### 2020 SUMMER FORAY – FULTON COUNTY

The OMLA Summer Foray was held at Goll Woods State Nature Preserve in Fulton County. Goll Woods is a remnant of the original forest which once covered the Black Swamp region of northwestern Ohio. The woods contains impressive examples of old growth burr oak, chinquapin oak, white oak and shagbark hickory trees.

Fulton County has little topographical relief and is extensively farmed with only a few scattered woodlots. Habitat for lichens and bryophytes is sparse and not very diversified compared to other parts of Ohio. This is reflected by the records for this county. Only 19 species of macrolichens and no crustose species had been previously reported. The bryophyte flora was likewise poorly known with 47 species of moss and no liverworts recorded.

Most of the foray time was spent at Goll Woods but cemeteries in Pettisville were visited for different habitat and to add additional species records for Fulton County.

During this foray a total of 52 lichen species were recorded: 27 species of macrolichens and 25 crustose species; 46 of these were present in Goll Woods SNP. New records for Fulton County macrolichens totaled 20 while all of the crustose would be new, since to our knowledge, crustose had not been studied before.

**Fulton County Lichens. GW=Goll Woods, PC=Pettisville Cemeteries. N=new species for Fulton County (macrolichens only).**

| Lichen Name                        | GW | PC |
|------------------------------------|----|----|
| <i>Absconditella lignicola</i>     | X  |    |
| <i>Amandinea dakotensis</i>        | X  |    |
| <i>Amandinea punctata</i>          | X  |    |
| <i>Anisomeridium polipori</i>      | X  |    |
| <i>Arthonia apatetica</i>          | X  |    |
| <i>Arthonia granosa</i>            | X  |    |
| <i>Arthonia pyrrhuliza</i>         | X  |    |
| <i>Berkleasium conglobatum</i>     | X  |    |
| <i>Biatora vernalis</i>            | X  |    |
| <i>Candelaria concolor</i>         | X  | X  |
| <i>Candelariella efflorescens</i>  | X  |    |
| <i>Chrysothrix caesia</i>          | X  |    |
| <i>Cladonia ochrochlora</i> N      | X  |    |
| <i>Crespoa crozalsiana</i> N       | X  |    |
| <i>Flavoparmelia caperata</i>      | X  | X  |
| <i>Flavopunctelia flaventior</i> N | X  |    |
| <i>Flavopunctelia soledica</i> N   | X  |    |
| <i>Graphis scripta</i>             | X  |    |
| <i>Hyperphyscia adglutinata</i> N  |    | X  |
| <i>Indoderma byssaceum</i>         | X  |    |
| <i>Lecania croatica</i>            | X  |    |
| <i>Lecanora strobilina</i>         | X  |    |
| <i>Lecanora thysanophora</i>       | X  |    |
| <i>Lepraria caesiella</i>          | X  |    |
| <i>Lepraria finkii</i>             | X  |    |
| <i>Lepraria harrisiana</i>         | X  |    |
| <i>Lichenocodium erodens</i>       | X  |    |
| <i>Micarea prasina</i>             | X  |    |
| <i>Parmelia sulcata</i>            | X  | X  |
| <i>Parmotrema hypotropum</i> N     | X  |    |
| <i>Parmotrema reticulatum</i> N    |    | X  |
| <i>Phaeocalicium polyporaenum</i>  | X  |    |
| <i>Phaeophyscia ciliata</i> N      | X  |    |
| <i>Phaeophyscia hirsuta</i> N      |    | X  |
| <i>Phaeophyscia orbicularis</i> N  |    | X  |
| <i>Phaeophyscia pusilloides</i> N  | X  | X  |
| <i>Phaeophyscia rubropulchra</i> N | X  | X  |
| <i>Physcia adscendens</i> N        |    | X  |
| <i>Physcia aipolia</i> N           | X  |    |
| <i>Physcia dubia</i> N             | X  |    |
| <i>Physcia millegrana</i>          | X  | X  |
| <i>Physcia phaea</i> N             |    | X  |
| <i>Physcia stellaris</i>           | X  | X  |
| <i>Physciella melanchra</i> N      | X  |    |

|                                  |           |           |
|----------------------------------|-----------|-----------|
| <i>Physconia leucoleiptes</i> N  | X         | X         |
| <i>Punctelia missouriensis</i> N | X         | X         |
| <i>Punctelia rudecta</i>         | X         | X         |
| <i>Rhinodina papillata</i>       | X         |           |
| <i>Scutellinia vitreola</i>      | X         |           |
| <i>Viridothelium virens</i>      | X         |           |
| <i>Xanthomendoza fallax</i> N    | X         | X         |
| <i>Xanthomendoza weberi</i> N    | X         |           |
| <b>Total</b>                     | <b>46</b> | <b>17</b> |

According to the maps on the Ohio Moss and Lichen Association digital maps ([ohiomosslichen.org](http://ohiomosslichen.org)), there were 47 species of mosses reported from Fulton County. On the June foray, an additional 11 new county records were added (N). Six species of liverworts were found. Previously, there were no liverworts reported from the county (H. A. Miller. 1964. Ohio Liverworts. Ohio J. Sci. 64: 177–184).

#### **Fulton County Bryophytes. N=new species for Fulton County.**

##### Mosses

*Anomodon attenuatus*  
*Anomodon minor*  
*Atrichum altecristatum*  
*Atrichum angustatum*  
*Atrichum crispulum*  
*Brachythecium acuminatum* N  
*Brachythecium campestre* N  
*Brachythecium laetum*  
*Brachythecium rivulare* N  
*Brachythecium rotaeaeum* N  
*Brachythecium rutabulum*  
*Bryum lisae* var. *cuspidatum*  
*Callicladium haldanianum*  
*Calliergonella curvifolia*  
*Calliergonella lindbergii*  
*Ceratodon purpureus*  
*Claopodium rostratum*  
*Climacium americanum* N  
*Dicranella heteromalla*

*Entodon cladorrhizans* N  
*Entodon seductrix*  
*Haplocladium microphyllum*  
*Fissidens taxifolius*  
*Hygroamblystegium varium* var. *humile* N  
*Hygroamblystegium varium* var. *varium*  
*Hypnum imponens*  
*Hypnum pallescens* N  
*Leskea gracilescens*  
*Leskea obscura* N  
*Orthodicranum montanum*  
*Orthotrichum stellatum* N  
*Plagiomnium cuspidatum*  
*Plagiothecium laetum*  
*Platygyrium repens*  
*Rhynchostegium serrulatum* N  
*Tetraphis pellucida*  
*Thuidium delicatulum*

#### Liverworts

*Cephalozia pleniceps* N  
*Frullania eboracensis* N  
*Frullania inflata* N  
*Lophocolea heterophylla* N  
*Nowellia curvifolia* N  
*Porella platyphylla* N  
**- Ray Showman**

### **OHIO'S RARE AND ENDANGERED LICHENS AND MOSSES**

Ohio has had a list of rare and endangered plants, protected by law, since the Ohio Rare Plant Law was enacted in 1978 (Ohio Revised Code Chapter 1518). This list contains all plants determined to be extirpated, endangered, threatened, or potentially threatened, according to criteria set forth in the Ohio law. The list is reviewed every two years (even numbered years) by the Ohio Rare Plants Advisory Committee, and species may be deleted, added, or change in status.

In addition to vascular plants, lichens and mosses have also been included on the list. Since these groups are lesser studied than the vascular plants, the Committee has adopted different criteria for their inclusion. These criteria follow:

1. Lichens and mosses that are known from one or two extant populations in the state with records no more than 20 years old may be proposed for endangered listing. No listings for threatened or extirpated will be proposed, although a lichen or moss already listed as endangered may become threatened if new populations are found, or extirpated if records become older than 20 years.
2. Be very parsimonious. When in doubt, wait for more information. Once listed, species are hard to remove.
3. List only lichens and mosses that have limited US range (near endemics), or are uncommon throughout their range.
4. Preference will be given to lichens and mosses that grow in uncommon habitats (therefore there is some vulnerability to the population or the habitat).
5. Favor larger, easy to recognize species. It is much easier to define populations for protection or avoidance. It is also easier for non-specialists to identify and update records later.
6. List only lichens and mosses that are found growing on natural substrates.
7. Ephemeral mosses, which are often limited to early successional habitats that disappear within a short time, will not be listed.

There are presently 17 lichens, and 16 mosses listed (see below). Many more could be added but with so few people who search for these cryptogams, we have thought to keep the list to a minimum.

**Lichens. X=Extirpated, E=Endangered, T=Threatened, A=Recently listed and awaiting more data**

- Blennothallia crispa*, Crinkled Jelly Lichen - - X  
*Cetraria arenaria*, Sand-loving Iceland Lichen - - E  
*Canoparmelia caroliniana*, Carolina Shield Lichen - - E  
*Dibaeis absoluta*, Pink Dot Lichen - - T  
*Enchylium bachmanianum*, Bachman's Jelly Lichen - - T  
*Enchylium coccophorum*, Tar Jelly Lichen - - E  
*Enchylium conglomeratum*, Dotted Jelly Lichen - E  
*Lathagrium fuscovirens*, Dusky Jelly Lichen - - E  
*Phaeophyscia leana*, Lea's Shadow Lichen - - E  
*Placidium squamulosum*, Brown Stipplescale - - E  
*Punctelia perreticulata*, Reticulate Speckled Shield Lichen - - E  
*Ramalina farinacea*, Dotted Ramalina - - E  
*Ramalina intermedia*, Rock Ramalina - - E  
*Ramalina pollinaria*, Chalky Ramalina - - T  
*Rusavskia elegans*, Elegant Sunburst Lichen - - E  
*Sticta beauvoisii*, Fringed Moon Lichen - - X  
*Thyrea confusa*, Jelly Strap Lichen - - A

**Bryophytes**

- Amphidium mougeotii*, Mougeot's Ice Moss - - E  
*Andreaea rupestris*, Black Rock Moss - - X  
*Anomobryum filiforme*, Common Silver Moss - - E  
*Anomodon viticulosus*, Long Tail Moss - - E  
*Barbula indica*, Twisted Teeth Moss - - E

- Buxbaumia aphylla*, Bug-on-a-stick - - T  
*Buxbaumia minakatae*, Ethereal Elf Cap Moss - X  
*Campylostelium saxicola*, Rock-loving Swan-necked Moss - - T  
*Cyrtomnium hymenophylloides*, Curvey-capsuled Thin-leaved Moss - - E  
*Dichelyma capillaceum*, Awned Dichelyma Moss - E  
*Diphyscium mucronifolium*, Cumberland Grain O' Wheat Moss - - E  
*Fissidens hyalinus*, Filmy Fissidens - - E  
*Forsstroemia producta*, Sullivant's Bark Moss - - E  
*Hylocomium splendens*, Mountain-fern Moss - - X  
*Hypnum pratense*, Wrinkled-leaved Marsh Hypnum - -E  
*Loeskeobryum brevirostre*, Squarrose-tipped Wood Moss - - E

If you find one of these listed species, please carefully note the exact location (GPS if possible) and size of the population (number of individuals or size of colony). If you are unsure of the identification collect a small voucher specimen for determination by an expert. This information should then be turned in to the Division of Natural Areas and Preserves to update their records.

- Ray Showman

**NOBLE COUNTY FORAY YIELDS 46 NEW COUNTY RECORDS FOR BRYOPHYTES, AND 8 NEW MACROLICHENS**

The 2020 Fall Foray was held on October 3 in Buffalo Township, Noble County, Ohio. Dennis LeMond and Ann Acheson opened their 800 plus acres of forest to 16 OMLA members. The areas visited included mixed oak and mixed mesophytic forests, young forests, sandstone ledges and boulders, and

mowed access roads. OMLA member and Ohio's Chief Botanist Rick Gardner planned the foray.

Sixty mosses species were collected, 42 of which are county records. Four liverworts were collected, and all are county records.

**Mosses. N = new for Noble County.**

*Amblystegium serpens* N  
*Anomodon attenuatus*  
*Anomodon tristis* N  
*Arrhenopterum heterostichum* N  
*Atrichum angustatum*  
*Atrichum altecristatum* N  
*Atrichum crispulum* N  
*Bartramia pomiformis*  
*Brachytheciastrum velutinum* N  
*Brachythecium acuminatum* N  
*Brachythecium falcatum* N  
*Brachythecium laetum*  
*Bryhnia graminicolor* N  
*Bryoandersonia illecebra*  
*Callicladium haldanianum* N  
*Calliergonella curvifolia*  
*Calliergonella lindbergii*  
*Campyliadelphus chrysophyllus*  
*Climacium americanum* N  
*Cladopodium rostratum* N  
*Ctenidium subrectifolium* N  
*Dicranum scoparium*  
*Entodon seductrix* N  
*Eurhynchiastrum pulchellum*  
*Fissidens bryoides* N  
*Fissidens bushii* N  
*Fissidens dubius* N  
*Fissidens subbasilaris* N  
*Fissidens taxifolius* N  
*Funaria hygrometrica* N  
*Grimmia pilifera* N  
*Haplocladium macrophyllum* N  
*Hedwigia ciliata* N  
*Homomallium adnatum* N

*Hygoamblystegium varium*  
*Leskea gracilescens*  
*Leucobryum albidum* N  
*Lewinskya sordida* N  
*Orthodicranum montanum* N  
*Orthotrichum pusillum* N  
*Oxyrrhynchium hians*  
*Physcomitrium serrulatum* N  
*Plagiomnium ciliare* N  
*Plagiomnium cuspidatum* N  
*Plagiomnium ellipticum* N  
*Platygyrium repens*  
*Pleurozium schreberi*  
*Polytrichum commune* N  
*Polytrichum ohioense* N  
*Pogonatum pensilvanicum* N  
*Pylaisiadelphina tenuirostris* N  
*Rhizomnium punctatum* N  
*Rhodobryum ontariense* N  
*Rhynchostegium serrulatum*  
*Schistidium apocarpum* N  
*Sciuro-hypnum plumosum* N  
*Sematophyllum demissum* N  
*Thuidium delicatulum*  
*Thuidium recognitum*  
*Ulota crispula* N

**Liverworts**

*Cololejeunea biddlecomiae* N  
*Fossombronina* sp.  
*Frullania eboracensis* N  
*Lophocolea heterophylla* N  
*Nowellia curvifolia* N

Lichens were investigated on as many substrates and habitats as possible during the 2020 Fall Foray. A total of 77 species were either collected or identified in the field. Of these, 32 species were macrolichens and 37 were crustose. Eight of the macrolichens were new records for Noble County (indicated below). Since crustose records are unknown from Noble County, all of the

crustose species reported here can be considered new county records.

**Lichens recorded during the Fall Foray.**  
**N=new for Noble County.**

*Agonimia* sp.  
*Amandinea polyspora*  
*Anisomeridium distans*  
*Anisomeridium polypori*  
*Arthonia apatetica*  
*Aspicilia laevata*  
*Biatora printzenii*  
*Bryobilimbia ahlesii*  
*Buellia erubescens*  
*Caloplaca sideritis*  
*Candelaria concolor*  
*Candelariella efflorescens*  
*Catillaria nigroclavata*  
*Chrysothrix caesia*  
*Cladonia coniocraea*  
*Cladonia furcata*  
*Cladonia ochrochlora* N  
*Cladonia peziziformis*  
*Cladonia pyxidata* complex  
*Cladonia rangiferina*  
*Collema subflaccidum*  
*Cryptodiscus pallidus*  
*Dermatocarpon luridum* N  
*Durella macrospora*  
*Flavoparmelia baltimorensis*  
*Flavoparmelia caperata*  
*Flavopunctelia soledica*  
*Graphis scripta*  
*Gyalolechia flavovirescens*  
*Heterodermia obscurata*  
*Heterodermia speciosa*  
*Hyperphyscia syncolla* N  
*Hypotrachyna livida*  
*Hypotrachyna minarum*  
*Lecania croatica*  
*Lecanora appalachensis*  
*Lecanora hybocarpa*  
*Lecanora layana*

*Lecanora strobilina*  
*Lecidea cyrtidia*  
*Lecidea varians*  
*Leptogium cynescens*  
*Lepraria caesiella*  
*Lepraria finkii*  
*Lepraria hodkinsoniana*  
*Melanelixia subaurifera*  
*Micarea prasina*  
*Multiclavula mucida*  
*Myelochroa aurulenta*  
*Myelochroa galbina*  
*Nectriopsis rubefaciens*  
*Parmelia sulcata*  
*Parmotrema hypotropum*  
*Parmotrema reticulatum*  
*Peltigera evansiana*  
*Peltigera praetextata*  
*Pertusaria pustulata*  
*Phaeophyscia adiastrata* N  
*Phaeophyscia cernohorskyi* N  
*Phaeophyscia rubropulchra*  
*Physcia americana*  
*Physcia millegrana*  
*Physcia pumilior* N  
*Physcia stellaris*  
*Punctelia caseana*  
*Punctelia rudecta*  
*Pyxine soledata*  
*Rinodina papillata*  
*Ropalospora viridis*  
*Porpidia albocaerulescens*  
*Rosellinia subiculata*  
*Scoliciosporum pensylvanicum*  
*Scytinium dactylinum* N  
*Trapelia placodioides*  
*Usnea mutabilis* N  
*Viridothelium virens*  
*Willeya diffractella*

- **Barbara Andreas**



### TRIAL BY VIRUS

This virus has been a trial,  
of everything we know,  
now we wear a face mask,  
'most everywhere we go.

But OM-LA has been undaunted,  
our forays still went on,  
and we'll keep on doing them,  
after the virus is all gone.

We managed two this year,  
to the corners of the state,  
we're planning two for next year,  
and I think they'll both be great!

So bring your mask if need be,  
but definitely plan to attend,  
we'll find more mosses and lichens,  
and have a good time to the end!

- Ray Showman

### THE OMLA – A GREAT SUCCESS

The primary mission of the OMLA is to add to the knowledge of lichen and bryophyte distribution in Ohio. Since 2004, 36 counties have been visited during OMLA forays and the number of new county records produced has been most impressive. As indicated in the tables below, the total for macrolichens is 421, with 913 new records for mosses and 142 for liverworts.

#### New County Records - Bryophytes

| OMLA Event, County     | Moss | Liverwort |
|------------------------|------|-----------|
| 04 Fall Foray, Adams   | 4    | 0         |
| 05 Summer Foray, Lucas | 10   | 5         |

|                           |            |            |
|---------------------------|------------|------------|
| 05 Fall Foray, Lawrence   | 37         | 14         |
| 05 Fall Foray, Jackson    | 0          | 1          |
| 06 Summer Foray, Vinton   | 31         | 7          |
| 06 Fall Foray, Washington | 28         | 11         |
| 07 Fall Foray, Pike       | 7          | 3          |
| 07 Fall Foray, Ross       | 1          | 0          |
| 08 Summer Foray, Gallia   | 14         | 2          |
| 08 Fall Foray, Erie       | 5          | 0          |
| 09 Summer Foray, Darke    | 57         | 0          |
| 09 Fall Foray, Meigs      | 41         | 8          |
| 10 Summer Foray, Henry    | 43         | 0          |
| 10 Fall Foray, Muskingum  | 65         | 10         |
| 11 Sum. Foray, Defiance   | 44         | 1          |
| 11 Fall Foray, Crawford   | 30         | 8          |
| 11 Fall Foray, Morrow     | 10         | 6          |
| 12 Summer Foray, Fayette  | 21         | 2          |
| 12 Fall Foray, Monroe     | 34         | 10         |
| 13 Summer Foray, Allen    | 31         | 0          |
| 13 Fall Foray, Columbiana | 30         | 15         |
| 14 Summer, Pickaway       | 25         | 8          |
| 14 Fall Foray, Adams      | 3          | 2          |
| 14 Fall Foray, Pike       | 8          | 0          |
| 15 Summer, Brown          | 44         | 3          |
| 15 Summer, Highland       | 6          | 0          |
| 15 Fall, Montgomery       | 50         | 0          |
| 16 Summer, Carroll        | 44         | 16         |
| 16 Fall, Miami            | 32         | 0          |
| 17 Summer, Licking        | 15         | 0          |
| 17 Fall, Morgan           | 49         | 0          |
| 18 Summer, Wayne          | 13         | 0          |
| 18 Fall, Hocking          | 3          | 0          |
| 19 Summer, Wood           | 18         | 0          |
| 19 Fall, Ashtabula        | 15         | 0          |
| 20 Summer, Fulton         | 11         | 6          |
| 20 Fall, Noble            | 42         | 4          |
| <b>Total Number</b>       | <b>913</b> | <b>142</b> |

#### New County Records - Lichens

| OMLA Event, County     | Macrolichen |
|------------------------|-------------|
| 04 Fall Foray, Adams   | 0           |
| 05 Summer Foray, Lucas | 9           |

|                           |            |
|---------------------------|------------|
| 05 Fall Foray, Lawrence   | 16         |
| 05 Fall Foray, Jackson    | 9          |
| 06 Summer Foray, Vinton   | 1          |
| 06 Fall Foray, Washington | 20         |
| 07 Fall Foray, Pike       | 9          |
| 07 Fall Foray, Ross       | 6          |
| 08 Summer Foray, Gallia   | 1          |
| 08 Fall Foray, Erie       | 14         |
| 09 Summer Foray, Darke    | 16         |
| 09 Fall Foray, Meigs      | 5          |
| 10 Summer Foray, Henry    | 14         |
| 10 Fall Foray, Muskingum  | 19         |
| 11 Sum. Foray, Defiance   | 25         |
| 11 Fall Foray, Crawford   | 18         |
| 11 Fall Foray, Morrow     | 11         |
| 12 Summer Foray, Fayette  | 24         |
| 12 Fall Foray, Monroe     | 23         |
| 13 Summer Foray, Allen    | 12         |
| 13 Fall Foray, Columbiana | 29         |
| 14 Summer, Pickaway       | 15         |
| 14 Fall Foray, Adams      | 0          |
| 14 Fall Foray, Pike       | 3          |
| 15 Summer, Brown          | 6          |
| 15 Summer, Highland       | 1          |
| 15 Fall, Montgomery       | 0          |
| 16 Summer, Carroll        | 11         |
| 16 Fall, Miami            | 23         |
| 17 Summer, Licking        | 14         |
| 17 Fall, Morgan           | 16         |
| 18 Summer, Wayne          | 7          |
| 18 Fall, Hocking          | 4          |
| 19 Summer, Wood           | 8          |
| 19 Fall, Ashtabula        | 4          |
| 20 Summer, Fulton         | 20         |
| 20 Fall, Noble            | 8          |
| <b>Total Number</b>       | <b>421</b> |

In addition to new county records, OMLA members have also added a number of new state records for lichens and bryophytes. These have been detailed in previous issues of OBELISK. The knowledge of crustose

lichens in Ohio has also been greatly increased by the work of Don Flenniken, and more recently Tomás Curtis, a student member of OMLA.

I think no other conclusion can be drawn than **the Ohio Moss and Lichen Association is a great success!**

- Ray Showman

**RICHARD SPRUCE  
1817-1893**

**Distinguished Botanist, fearless explorer,  
humble man\***

**\*from plaque on cottage where he lived  
out his retirement**

A flora that I like to use quite a bit is Howard Crum's *Liverworts of Southern Michigan*. I like his personal touch that he uses, similar to that of his moss floras. An abbreviated version of the quote below starts out his flora:

*I like to look on plants as sentient beings, which live and enjoy their lives — which beautify the earth during life, and after death may adorn my herbarium... It is true that the Hepaticae have hardly as yet yielded any substance to man capable of stupefying him, or of forcing his stomach to empty its contents, nor are they good for food; but if man cannot torture them to his uses or abuse, they are infinitely useful where God has placed them, as I hope to live to show; and they are, at the least, useful to, and beautiful in, themselves — surely the primary motive for every individual existence. — Richard Spruce*

I have read the above quote numerous times. Recently I wondered – who is Richard Spruce?

Looking him up online, I saw that he was a British botanical explorer from the nineteenth century, and somebody certainly worth getting to know better. After a little more searching and reading I have a better picture of this personality who lived over 150 years ago, that I would like to briefly present below.

Richard Spruce was born in 1817 near a very small village of Northern England called at Ganthorpe, in Yorkshire. As a child, he was taught by his father, who was a schoolmaster. He showed an early interest and talent in botanical matters, especially bryophytes. At age 16 he listed plants of his hometown area of Ganthorpe, with a focus on bryophytes - 402 species. At age 19 he had listed 485 flowering plants for the nearby "Malton District." At age 27 he published a paper for another area of Northern England, called Teesdale. He listed 167 mosses and 41 liverworts. Five of the mosses and one of the liverworts were new to England. An earlier flora for the area showed only four mosses.

He was a math teacher for five years until his school closed down. This was a fortunate occurrence for botany, as he was then more free to pursue his botanical interests, which were largely self-taught, as well as consorting with notable and accomplished botanists.

Noting his exceptional botanical ability, he was approached by William Hooker, the director of the Royal Botanic Gardens at Kew, and was offered the opportunity to carry out a major expedition to the Pyrenees border region between France and Spain from 1845 to 1846. He collected both vascular plants and bryophytes. In regard to bryophytes, he discovered at least 17 new

species and, although there were reports before that gave a low estimate of the number of bryophytes in that region, he increased the count from 169 listed to 478.

After that "jaunt" he was presented with a much larger opportunity by the Royal Botanic Gardens - the Amazon! He was to spend the next 15 years of his life there – not leaving South America once, working in Brazil, Ecuador, Peru, and a bit in Venezuela.

It should be noted here that Spruce was not a healthy man. From an early age he suffered from many illnesses. He had numerous undiagnosed ailments including regularly spitting up blood, having doctors of the time to suspect TB. Nevertheless, he decided to go, thinking that a warmer climate might help him. Also, he decided if he did not go now, he probably never would have this opportunity again.

He arrived in Brazil in 1849 and in the 15-year period, he explored and collected in the headwaters of the Amazon in Brazil, and subsequently the headwaters of the Amazon in Peru and Ecuador, in the Northern Andes. During that time, he collected many specimens of flowering plants as well as ferns, lichens, mosses, and liverworts.

Much of his work led him into activity that was very arduous, and at times endangered him and those assisting him. More than once he feared that his life was over. His drive, willingness, and unselfish attitude to endure difficulties can be perhaps best illustrated by work to procure *Cinchona* seedlings and seeds by the British government. This source of quinine, the only known remedy for malaria at the time, was found in Ecuador located in the northern Andes and was very expensive. He dropped his plans

and started work on this project as soon as he heard the request. The trip to Ecuador was one of the most difficult trips he ever took. It took 100 days to make the trip – all on foot or canoe (of which 90 of those days involved rapids). Once there he spent two years persuading the government to let him proceed, researching the tree to find the best specimens, cultivating seedlings, collecting seeds, etc., etc. All this Spruce had to do mostly himself. During this time, Spruce's health took a bigger fall. He became partly paralyzed in the back and legs, causing him great pain in moving. This did not stop him from his work. His work with *Cinchona* helped to start plantations in India and Sri Lanka, making quinine much cheaper and helped to save many lives. After the *Cinchona* work was done, most rational men would have gone home – what with major health problems – but not Spruce. He spent three more years studying the vegetation of the Pacific slopes of the Andes – which he had not seen before.

Although he collected many vascular plants and lichens as part of his exploring, his great love was bryophytes, especially liverworts. After he returned to England, and in spite of being largely an invalid, he worked up his liverwort collections from the Andes, and in 1885 produced the book entitled *Hepaticae Amaonicae et Andinae*.

To describe a bit more of the importance of this work, I am going to refer to an article by Rob Gradstein, noted liverwort specialist, entitled *Spruce's Hepaticae Aazonicae et Andinae and South American floristics*, published in *Richard Spruce – Botanist and Explorer* in 1996. Gradstein says that the above book is "...Richard Spruce's magnum opus. Today, in spite of being over a hundred years old [it] is still the most

important reference on topical South American hepatics...The fact that Spruce knew all his species in the field, together with his outstanding skills as a taxonomist, his eye for detail and his passion for the hepatics, must be reasons why the book is so good. Many of Spruce's taxonomic concepts are still valid today and modern classifications of important families such as the Frullaniaceae, Plagiochilaceae and Lejeuneaceae are heavily based on Spruce's treatment in *Hepaticae Amaonicae et Andinae*." (p. 142),

Richard Spruce was a multi-talented man. Besides his obvious talents with plants, he had many other talents and interests. He was very good with linguistics. Besides English, he could speak Spanish, Portuguese, and French. He also learned 21 different tribal dialects or languages, making an effort to record, for the first time, vocabularies for each language. He also studied and recorded aspects of the anthropology, geology, and geography of the different areas he travelled. He was a good artist, drawing beautiful pictures of plants he saw, as well as sketches of native life and towns. He also took careful notes of the political and social aspects of different people groups that he travelled amongst. In addition to these, he could handle the many details of travelling through unknown lands, adjusting to primitive living conditions, procuring food for himself with his shotgun when he ran out while travelling, and so on.

After he came back to England, his health was pretty much broken. He eventually lived out the rest of his days in a small cottage near where he grew up. He received a small pension of 100 pounds per year from the British government, for his work on cinchonas, which he subsisted on.

Unfortunately, he could not look at all the bryophyte collections he brought back from his travels for long, as after a few minutes at the scope he developed excruciating headaches. He relied heavily on colleagues to make final determinations. However, he did finally write up the results of his work, as well as write numerous other articles. He also kept up an active correspondence with other bryologists. He died in 1893 of influenza, his weakened body unable to resist it. He was buried next to his parents in the local church yard, having never married.

In researching this piece, I read through numerous accounts of his life. Almost all talked of the man's outstanding personal characteristics. His modesty and humility stood out. He did not complain about his poor living conditions or his health. He had a sense of humor even in the hard times. He did not boast or exaggerate his accomplishments for his own benefit. Even though he took detailed notes during his travels, on many things, along with accomplished drawings, he did not write a book about himself and his travels; rather spending his time figuring out liverworts. He was known for his kindness and concern for others and being an even-tempered person even in the roughest of times. But the search for fame, for renown, was not for him.

A closing note, it seems that very few people know much about Richard Spruce today. He is not as well-known as other English nature explorers of the 1800s, outside of scholars in his area of knowledge (e.g., liverworts). Perhaps this is due somewhat to his humble, quiet nature.

His good friend, and also eminent and better-known Victorian explorer, Alfred

Wallace took his many notes, after his death, and put them together to form the two-volume account of his travels. It is called *Notes of a Botanist on the Amazon & Andes*. Fortunately, a facsimile of the original books can be found for sale on-line at a reasonable price. I found the narrative quite interesting and certainly not dry.

Another good book I found is *Richard Spruce: Botanist and Explorer*. It is a collection of essays on his life and work from a symposium held in England on the 100<sup>th</sup> anniversary of his death.

– **Bill Schumacher**

### **THE CHRISTMAS LICHEN** *(Cryptothecia rubrocincta)*

As Christmas approaches, it seems appropriate to include a few notes on the Christmas Lichen, *Cryptothecia rubrocincta*, a striking crustose lichen that is widely distributed in the southeastern United States as well as tropical and subtropical areas of the West Indies, Central America, and South America. The Christmas Lichen has also been found in a few African mountain ranges. The specific epithet *rubrocincta* means “red” and “girdled/encircled,” an apt description of the red and green concentric rings of the lichen's thallus, which are reminiscent of a Christmas wreath. The Christmas Lichen was first described by the German naturalist Christian Gottfried Ehrenberg in 1820.

The Christmas Lichen does not produce sexual structures (e.g., apothecia) and reproduction takes place via fragmentation of the bright red isidia that proliferate from the center of the thallus. The red pigment is chiodictoric acid, which produces a PD+ **deep reddish-purple spot test, K+ very dark**

purple-red, KC- and C-. However, chemical spot tests are unnecessary since no other lichen exhibits the flashy red and green coloration of the Christmas Lichen.

While working on my landscape photography book, *The Floridas*, which was published by Browntrout Publishers in 2005, I traveled extensively in the Sunshine State, and observed Christmas Lichen on cypress, oak, and Sabal palm tree bark in swamp forests throughout the state. There are many displays of Christmas Lichen along the 0.4-mile boardwalk in the 400-acre swamp forest which borders Lee Road, about 10 miles west of Boynton Beach, near the headquarters of the vast Loxahatchee National Wildlife Refuge in western Palm Beach County. This is where I took the two attached photographs.

Snow is a very rare occurrence in Florida, but the Christmas Lichen proudly displays its Yuletide colors every month of the year in the Sunshine State.



**-Ian Adams**



## MOSS AND LICHEN DIVERSITY ON BLUFFS OVERLOOKING LAKE ERIE

In 2012 Lake Erie Bluffs in Lake County was acquired by Lake Metroparks. This was 592 acres of beach, lake bluffs, wet fields, and forests. A big thanks to my father John Pogacnik who, as a biologist working for Metroparks, helped attain grants to preserve this fantastic tract of land. One of the rarest habitats on the property is the constantly eroding lake bluffs. These bluffs were first known to have the potentially threatened greater fringed gentian (*Gentianopsis crinita*), the rare Pringle's aster (*Symphyotrichum pilosum* var. *pringlei*), and potentially threatened golden fruited sedge (*Carex aurea*). I had hiked the property before I had a strong interest in mosses, lichens, or plants in general.



A few years ago, when I first met Tomás Curtis, he notified me of a rare lichen that grows on bare clay of the eroding lake bluffs. The lichen was called Bachman's

jelly lichen (*Enchylium bachmanianum*). It is listed as endangered in Ohio. I went in search of this lichen and found it in multiple places. This piqued my interest in the lake bluffs.



*Enchylium bachmanianum*

Last year while exploring the lake bluff at the Metropark with my father I found a strange moss which almost resembled algal haircap moss (*Pogonatum pensilvanicum*), with a persistent protonema and sporophytes with tiny leaves at the base. Something was off about this moss though; it lacked a hairy calyptra it had a calyptra on one side of the sporophyte.



*Discelium nudum*

I later found out that this moss was known as naked flag moss (*Discelium nudum*) a globally rare moss which Natureserve lists

as a G3 globally vulnerable species. With further research I found this moss had been in 11 Ohio counties mostly in Northeast Ohio. The Consortium of North American Bryophyte Herbaria shows a handful of Ohio records with the most recent a collection from Diane Lucas in Erie County along the Vermillion River. Any other collections of this moss were before 1950. The few mosses besides *Discelium* and *Pogonatum* that have a persistent protonema include the ephemeral “earth mosses” in the genus *Ephemerum* and goblin’s gold (*Schistostega pennata*). This moss should be sought after in places with constant eroding clay soils in the months of November to January.

After finding this I had a real interest in these bluffs and had to look for more. A trip into Ashtabula in October this year with John Pogacnik found some similar habitat. We discovered more *Discelium nudum*, *Enchylium bachmanianum*, and a new liverwort for me, common kettlewort (*Blasia pusilla*).



*Blasia pusilla*

When I saw this liverwort my first thought was *Pellia epiphylla*, another thallose liverwort, but this had gemmae on the lobe tips. *Blasia* is unique by having two types of gemmae; the gemmae on the lobe tips and

others in flask shaped structures protruding from the thallus. The lobes also have colonies of the blue-green bacterium *Nostoc* on them. There are very few records for *Blasia*, i.e., a handful on CNABH and a couple of recent iNaturalist records from Rob Curtis and Chris Poling. After finding it at this site I had to check the original bluffs where I thought I had seen this *Pellia* lookalike. I saw an observation from Rob Curtis in the general area and sure enough I saw it when I revisited the site. This was a significant find for both sites. This is also true for the *Enchylium bachmanianum*. Talking to Tomás he told me about how this lichen was very overlooked and is probably in more counties than have been recorded. The jelly lichens (family Collemataceae) are unique by containing cyanobacteria or “blue green algae” rather than the usual true algae. There are between one to two dozen species of this family recorded in Ohio. The Lake Erie Bluff, which is also home to variable forklet moss (*Dicranella varia*) and lesser smoothcap moss (*Atrichum angustatum*), will be a good spot to check on the Lake County forays next fall!



*Dicranella varia*

There are other cool places to look for mosses and lichens along the lake. Eastern cottonwood (*Populus deltoides*) is especially



good for lichens. On a recent outing with Robert Klips, during which he took the photos shown here, we visited one of my favorite spots, Geneva State Park in Ashtabula County. Specifically, at this site is a stand of medium sized cottonwoods growing on the east side of the beach. This is by far one of my favorite habitats to look for lichens as I think it is home to some of the most stunning lichens. This site has almost every sunburst lichen known for Ohio: maritime sunburst lichen (*Xanthoria parietina*), hooded sunburst lichen (*Xanthomendoza fallax*), poplar sunburst lichen (*Xanthomendoza hasseana*), bare bottomed sunburst lichen (*Xanthomendoza weberi*), and elegant sunburst lichen (*Rusavskia elegans*), the latter growing on a nearby breakwall. All this site is missing is powdery sunburst lichen (*Xanthomendoza ulophyllodes*).



*Xanthoria parietina*

But the sunburst lichens are not the only gems at this site. Other lichens I have found here include bushy sinewed lichen (*Ramalina americana*), starry rosette lichen (*Physcia stellaris*), mealy rosette lichen (*Physcia millegrana*), hooded rosette lichen (*Physcia adscendens*), smooth shadow crust lichen (*Hyperphyscia syncolla*) and smooth shadow lichen (*Phaeophyscia ciliata*)

among many others. I find similar species along the lake on cottonwoods but nothing like this site.



*Xanthomendoza hasseana*



*Phaeophyscia ciliata* and *Physcia stellaris*

The sunburst lichens are quite easy to ID as there are only a handful. First, they can be split in half by looking for soredia. The species that will have soredia are *Xanthomendoza fallax* and *X. weberi*. *X. weberi* can be easily told by its narrow lobes and lack of rhizines. *X. fallax* will have lobes with upturned hoods filled with soredia. It is also good to note that apothecia are quite rare on the sorediate sunburst lichens. All sunburst lichens that lack soredia will most often have apothecia. These include *Xanthomendoza hasseana*, *Xanthoria parietina*, and *Rusavskia elegans*. *Rusavskia elegans* is restricted to calcareous

rock such as limestone. This lichen is quite unique as it has almost rounded lobes. *Xanthoria parietina* will have flat lobes that are wide and can be found on both rock and bark. *Xanthomendoza hasseana* will have abundant pycnidia and conspicuous rhizines.



*Rusavskia elegans*

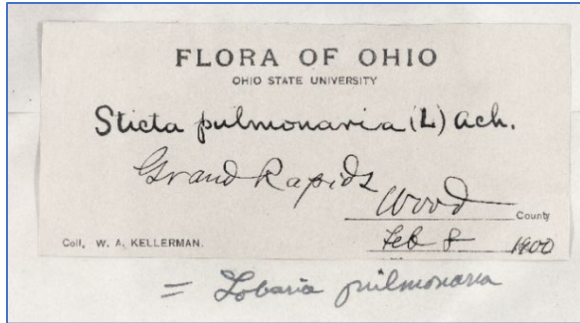
The rosette and shadow lichens at the site these are easy identifications as well. The most distinctive one is *Physcia adscendens* which has hooded lobe tips and ciliate margins. This lichen is common on the bark of cottonwoods along the lake but becomes more uncommon inland. Bob noted that he usually only sees this lichen growing on gravestones. *Physcia millegrana* is another easy one which has finely dissected lobes with soredia and occasional apothecia. *Physcia stellaris* will have narrow light-colored lobes without soredia and apothecia that are almost always present. *Phaeophyscia ciliata* will look very similar to *Physcia stellaris* but will have dark green lobes and have cilia along the lobe margins. Lastly *Hyperphyscia syncolla* grows tight against the bark and almost appears crustose. Thanks to Robert Klips for pictures of these mosses and lichens at these sites.

– Shaun Pogacnik

## THE OSU HERBARIUM: FUN AND ADVENTURE

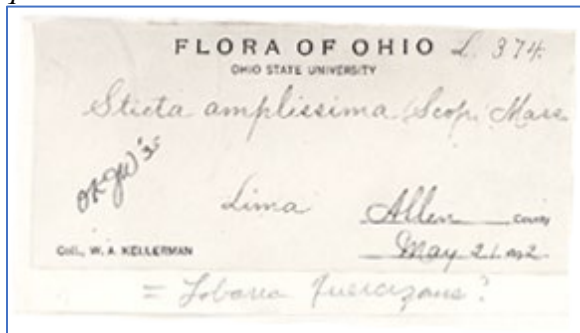
The Ohio State University Herbarium (OSU) has been the source of great fun, even though I didn't have a chance to visit this year. The fun has been going through images of specimen labels and entering some basic information into the online database for North American lichens, the Consortium of North American Lichen Herbaria (reachable at [lichenportal.org](http://lichenportal.org)). The OSU lichen and bryophyte collections are managed as live data sets on their respective portals (the one for bryophytes is separate but identically configured) and are now searchable by collector name, date, country, state, county, or scientific name. Your search will return the database information plus, in most instances, an image of the label. (Initially entries were made to the database as "skeletal records" consisting of just the label images and scientific names. New records are added directly to the portal, and labels are printed using those data.) I, in addition to other volunteers and OSU student workers, have been transcribing data from the images to online data fields so that they can be electronically searched, compiled and filtered by visitors worldwide. Also, we can go on armchair field trips following in the footsteps of Ohio's great lichenologists.

In 1891, William A. Kellerman became the first Professor of Botany at OSU, and the same year founded the herbarium. In Ohio, Kellerman collected lichens primarily in Adams, Fairfield, Morgan and Vinton counties. One of his interesting collections is this "*Sticta pulmonaria*," now known as *Lobaria pulmonaria*, with the common name "lungwort."



This is Kellerman's only collection from Wood County. The species is now presumed extirpated from Ohio. We can imagine 100 years from now, when the pristine air of northwest Ohio once again harbors *Lobaria pulmonaria*.

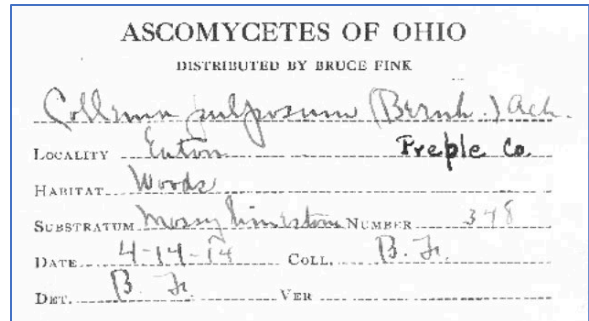
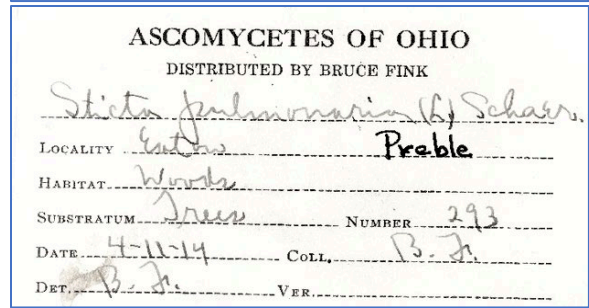
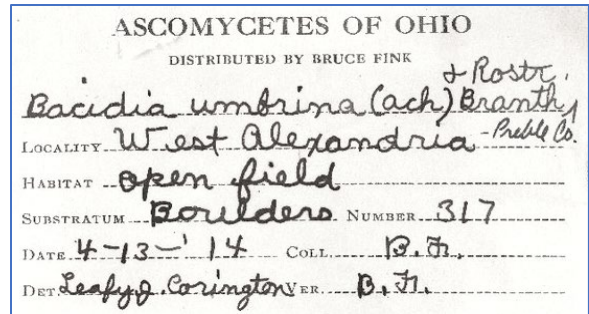
On a trip to Allen County in 1892, Kellerman collected another *Sticta* that until recently was known as a *Lobaria*, now a great rarity in our state, *Ricasolia quercizans*.



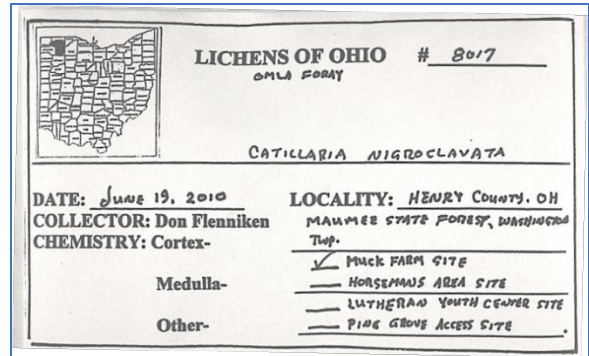
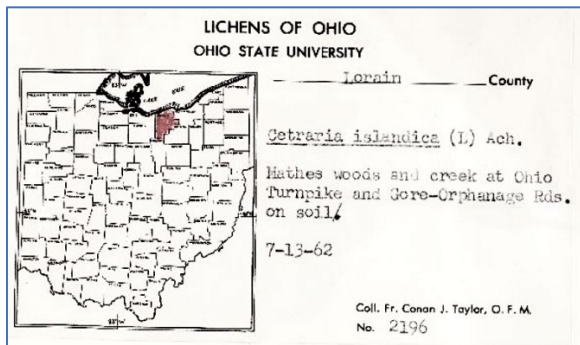
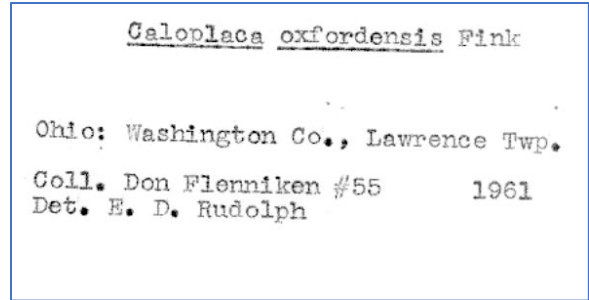
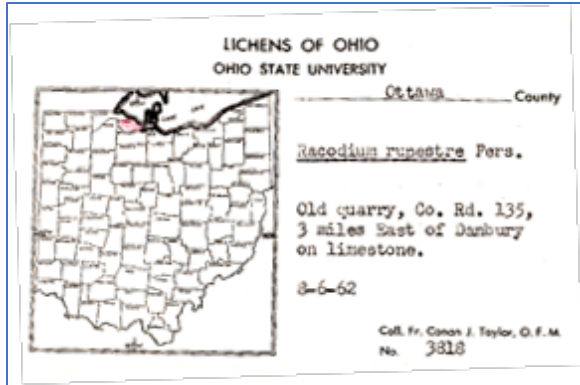
Kellerman collected only two other species from northwest Ohio: *Physcia millegrana* near Green Springs in Sandusky County and *Peltigera canina* at Fostoria in Seneca County.

The Bruce Fink collection at the OSU Herbarium consists of 395 specimens, including 186 from Ohio, 109 from Iowa, and 52 from Minnesota. The Ohio specimens are primarily from Adams, Butler, Highland and Preble counties, as well as Fayette, Ross and Warren. Butler and Preble are close to Miami University, where Dr. Fink was Professor of Botany from 1906 to 1927. These include another sample of lungwort, a still-common rock-dwelling crust

now known as *Scoliciosporum umbrinum*, and a jelly lichen, *Collema tenax*.



Conan J. Taylor, author of *The Lichens of Ohio* (1967), collected lichens in Ohio from 1959 to 1962. He contributed about 2900 specimens from throughout Ohio. These include the odd filamentous dwarf fruticose lichen known as "rock hair" (*Racodium rupestre*) and an Iceland lichen (*Cetraria arenaria*) in 1962 from a Lorain County site that was subsequently destroyed. The species was presumed extirpated from Ohio until 2018, when it was discovered at Thompson Ledges in Geauga County.



Don Flenniken, author of *The Macrolichens in West Virginia* and co-author of *The Macrolichens of Ohio*, donated approximately 6700 specimens to OSU, including about 1800 from Ohio and 2650 from West Virginia. Don also collected in Maine, Virginia, North Carolina, Wisconsin and Missouri.

One of Don's early finds was the Oxford orange lichen (*Rufoplaca oxfordensis*). It is known from scattered localities in northeastern North America and western Europe. Don collected *Catillaria nigroclavata* during the OMLA summer foray to Henry County in 2010.

Ray Showman, co-author of *The Macrolichens of Ohio* and the editor of *OBELISK* has contributed nearly 800 specimens from all parts of Ohio, as well as West Virginia, Indiana and Kentucky. His collections include many jelly lichens, such as the skin lichen (*Leptogium corticola*), which has been found in North and Central America, the Medeira and Azores archipelagos, and southern Europe. I've been curious about jelly lichens for the last few years. This year I finally found my very first one in the field during the OMLA fall foray to Noble County.

Of particular interest is Showman's Hypotrachyna Lichen (*Hypotrachyna showmanii*), which occurs in the Appalachian Mountains. Ray introduced me to this species on a ridge top in the Edge of Appalachia Preserve. It's always rewarding to be out in the field with experts.

|   |           |          |
|---|-----------|----------|
| State <u>Ohio</u> County <u>Vinton</u>  |           |          |
| Location: <u>Madison twp., sect. 30</u><br><u>R.E.M.A. Near type locality for</u><br><u>this species.</u> |           |          |
| Substrate: <u>Chestnut oak bark</u>   |           |          |
| <u>Hypotrachyna showmanii</u> Hale  |           |          |
| Collected: <u>Ray Showman</u>   | <u>K</u>  | <u>C</u> |
| Date: <u>8/12/09</u>  |           |          |
| Ident: <u>RES</u>   | <u>KC</u> | <u>P</u> |

The next best thing to visiting the herbarium in person is to enjoy it online. Happy searching!

-- Jim Toppin

## NEWS AND NOTES

### OHIO MOSS ATLAS IS UPDATED

Initiated in 1996 (Andreas and Snider 1996) and updated and revised in 2011 (Andreas 2011), The Ohio Moss Atlas has now had a second revision and is online on our web site. Like the 2011 revision, the core of the new version is a database produced by Barb Andreas and Diane Lucas that is a compilation of moss taxa and their verified herbarium specimen records and literature records. As before, the maps are county-level resolution with two symbols: dots for verified specimens and squares for literature only. Nomenclature has been updated, using names set forth on a list of Ohio mosses developed by Bill Buck and Barb Andreas published this year on the Consortium of North American Bryophytes web site.

An innovative mapping method was employed to make this new atlas. Dismayed that there did not seem to be any utility or “app” to convert spreadsheet data into dot maps, we contacted the Geospatial Information Librarian at The Ohio State University, Joshua Sadvari, who gave us initial guidance and connected us with Adam Porr and Ruiyu Tan, Consulting Manager and undergraduate student, respectively, at the OSU Center for Urban and Regional Analysis. They

produced an elegant system to batch produce (yay! captioned (hooray!) .jpeg distribution maps that employs a combination of ArcGIS mapping and spatial analysis software and the programming language Python. This was accompanied by a clear, concise, and complete user’s guide. We are extremely appreciative of their efforts. Now that it is a breeze to make distribution maps, updates can be made more frequently. Bill Schumacher is now maintaining the OMLA moss database and is participating in a new endeavor, with Brandon Ashcroft and Barb Andreas, to produce a complementary liverwort atlas.

I uploaded the maps to the media storage portion of OMLA web site and made a downloadable PDF. Using Diane’s spreadsheet with html (web) code for the maps of all 397 moss species and varieties and data on occurrences in each of Ohio’s 88 counties, Julia Wiesenbergh updated all 88 separate county pages on our site.

Snider, Jerry A. and Barbara K. Andreas 1996. *A Catalog and Atlas of the Mosses of Ohio*. Ohio Biol. Surv. Misc. Cont. No. 2 iv + 105p.

Andreas, Barbara K. 2011. *Ohio Bryology and the History of the Moss Atlas*. OBELISK (8): 9-13.

### – Bob Klips

This issue of OBELISK is my 15th as editor and major contributor. I have decided that it is time for some new blood, new ideas and new articles for OBELISK, and this issue will be my last. I would like to thank everyone who has contributed articles, making OBELISK more than a newsletter – almost a scientific journal. I would also like to thank Janet Traub who was my co-editor for several years, and Bob Klips who is my current co-editor and will be assuming the role as primary editor next year. I hope you will all help Bob as much as you have helped me and keep OBELISK an outstanding newsletter.

## **FLENNIKEN AWARD**

This year's Flenniken award for the top student article in OBELISK is awarded to Shaun Pogacnik for his excellent writeup of unique bryophytes and lichens of the northeastern Ohio Lake Erie shoreline. Shaun is a Junior at Ohio University where he is studying Biology. Congratulations and thank you, Shaun!

## **ANNUAL MEETING ONLINE: CALL FOR MEMBER INPUT**

Due to the continuing pandemic, we will not be meeting in person but will have our annual meeting online via Zoom. If you have any ideas you want to air, or new business, please send a note to Barb Andreas for inclusion at the meeting. Also, using the "share screen" function of Zoom we will be having a round-robin set of short member sharing presentations on the theme of "Best Finds of 2020." Join in! (Date to be determined – be on the lookout for an email about the meeting.)

## **2021 FORAYS**

We managed 2 forays in 2020 with no ill effects so we will try again in 2021. If all goes well, we will have a Summer Foray in Belmont County and a Fall Foray in Lake County. More information will follow at the annual meeting.

## **BOOK RECOMMENDATIONS**

***Field Guide to the Lichens of the Great Smoky Mountain National Park*** by Erin A. Tripp and James C. Lendemer. In spite of the title, I don't think this is a field guide, but rather a book for your library or beside your dissecting scope. This comprehensive book contains keys for all 920 species of lichens now known from GSMNP and has descriptions with color photos for most of

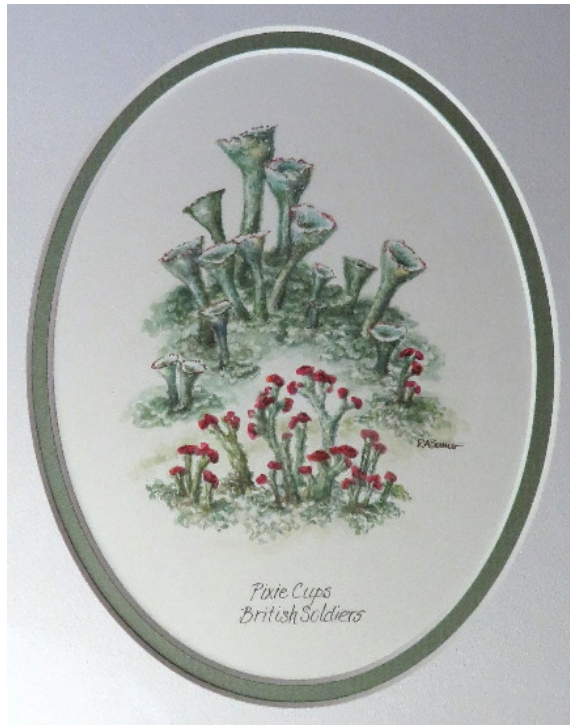
these species, many of which are also found in Ohio. The book contains an excellent introductory section on lichen biology with many illustrations. Also covered are the history and ecology of the GSMNP. The entire book is written in a casual, easy-to-read style that is a welcome change from some of the more technical scientific writing.

The book does not contain any of Brodo's common names (*Lichens of North America*), but rather has somewhat cutesy, whimsical or humorous impressions of the lichens. For instance, *Heterodermia speciosa* (Powdered Fringe Lichen) is "Put A Hair Net On It," and *Flavoparmelia caperata* (Common Greenshield) is "Yellow Glory." This may confuse people who are trying to learn the lichens by their common names. Notwithstanding this minor criticism, I would heartedly recommend this book to anyone interested in lichens or more broadly, the Smoky Mountains.

***The Tangled Tree. A Radical New History of Life.*** By David Quammen, 2018. This was recommended to me by Barb Andreas and was recommended to her by another eminent bryologist. This easy-to-read book provided a strong booster shot of evolutionary biology, needed since I haven't had an academic biology course for around 50 years. It not only gives a history of evolutionary thinking and the latest theories of the mechanisms of evolution, but also provides great examples of the process of science. I recommend it for anyone with an interest in biology.

– **Ray Showman**

## LICHENS AND MOSSES IN ART



Botanical art is not uncommon, and sometimes you even see drawings of mushrooms, but lichens are rarely seen. This original art was given to me by a very special person. – **Ray Showman**



Ernst Haeckel (1834-1919) was a prolific and influential biologist and artist who, among other things, first used the word “ecology.” This marvelous mess of mosses is from his 1899 *Kunstformen der Natur* (“Art Forms in Nature”) My family gave me a framed copy of this. – **Bob Klips**



**2020 Summer Foray at Goll Woods** (left to right): Bob Klips, Bill Schumacher, Barb Andreas, Carole Schumacher, Diane Lucas, Jim Toppin, Janet Traub, Ray Showman, Chris Poling, Julia Weisenberg, Tomás Curtis, David Weisenberg (not pictured: Ian Adams and Dean Porter).  
**Photo by Bob Klips**



**2020 Fall Foray at Noble County** (left to right): Ian Adams, Megan Osika, Jim Toppin, Diane Lucas, Chris Poling, Janet Traub, Tomás Curtis, Dennis LeMond, Barb Andreas, Shaun Pogacnick, Brandon Ashcroft, Ray Showman, Rick Gardner, John Potter, Bob Klips, Dean Porter, Carole Schumacher, Bill Schumacher.  
**Photo by Bob Klips**