

Noteworthy Lichen Specimens in the Herbarium

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The University of North Carolina Chapel Hill Herbarium (NCU) has nearly 6,000 lichen specimens among its collections. It is an actively growing and evolving collection which has received considerable accessions and a thorough revision this year. Here I highlight the lichen specimens new to the Herbarium, with particular emphasis on species new to the collection. This is broken down into three areas: 1) specimens donated by Edward C. Uebel; 2) new state and county records; and 3) new species from recent taxonomic splits.

Part 1: the Uebel Collection.

In February 2017 NCU received an offer of a collection of lichens from Edward C. Uebel of Maryland. Within a week of our expressing interest, Mr. Uebel's lichen specimens arrived in five large boxes (Fig. 1).



Figure 1. Five boxes of the Edward C. Uebel lichen collection, donated to the UNC Herbarium.

In the delivery were over 330 lichen specimens from Maine, Virginia and West Virginia. Mr. Uebel had collected most of these specimens during lichen classes and workshops that he attended in the past two

decades. Many were beautifully preserved with great care taken to their preparation (Fig. 2), so much so that we simply affixed barcodes and entered label information into our on-line catalog, lichenportal.org.



Figure 2. An example of Edward C. Uebel's careful processing of lichen specimens.

The Uebel collection consists of 158 taxa representing 76 genera in 37 families. Thirty species are new to the NCU collection, including one species (*Ropalospora chlorantha*) that represents a family new to the collection. [For a list of species in the Uebel collection, click here.](#)

Part 2: New species to North Carolina and new county records

Over the past year the Herbarium received lichen specimens from across North Carolina. Among these additions are some new records both to the state and to individual counties. Catalog numbers for specimens in lichenportal.org (NCU-L-xxxxxxx) are provided.

Guilford County, North Carolina: NCU is the most important repository for lichen specimens as we are the sole herbarium curating 23 of the 58 species documented from Guilford County. Noteworthy recent accessions include:

Hyperphyscia syncolla: Linda Phillips' collection from Audubon Natural Area (NCU-L-0004930) is a new county record. This species had previously been documented from Burke, Carteret, Chatham, Durham, Granville, Hertford, Johnston, Jones, Orange, Pitt, Swain, Washington and Wake counties.

Lecanora symmicta (Fig. 3A): Linda Phillips' collection (NCU-L-0005324) from the wooden deck of a house in Greensboro, is new to the North Carolina Piedmont and a county record.

Parmotrema simulans : Linda Phillips' collection (NCU-L-0005321) from Greensboro represents the first specimen from not only Guilford County, but from the Piedmont region as well. It has previously been reported from Avery, Buncombe, Burke, Jackson, Macon, Stokes and Transylvania counties.

Halifax County, North Carolina has only 21 species of lichens documented by herbarium specimens, so this is fertile ground for those seeking county records! *Lobaria scrobiculata* (Lobariaceae; NCU-L-0005205) (Fig. 3B) and *Heterodermia albicans* (Physciaceae; NCU-L-0005206), both collected near the Rocky River in Weldon by Gary Perlmutter in 2017, are county records and are only found in NCU's collection.

Yancey County has a well-documented lichen flora of 263 species. Noteworthy recent accessions to NCU include:

Peltigera rufescens is reported from North Carolina with collections from the Piedmont and mountain regions of the state.¹ Linda Phillips' three specimens (NCU-L-0005251, NCU-L-0005252, NCU-L-0005253) from a parking lot at Mount Mitchell State Park appear to be a new county record.

Rhizocarpon petraeum (Fig. 3C) is not reported from North Carolina in the literature, but a recent search of lichenportal.org revealed specimens from Anson, Madison, and Mitchell counties. Linda Phillips' specimen from Mount Mitchell State Park (NCU-L-0005317) is a new record for that County.

Xanthomendoza ulophyllodes (Fig. 3D) is found in the Great Lakes region as well as northeastern United States and Canada. One specimen (NCU-L-0005329) collected in Yancey County by Linda Phillips documents its presence in the high elevations of the Southern Appalachians -- which is not unreasonable. This represents a new state record as well as a significant range extension southward.

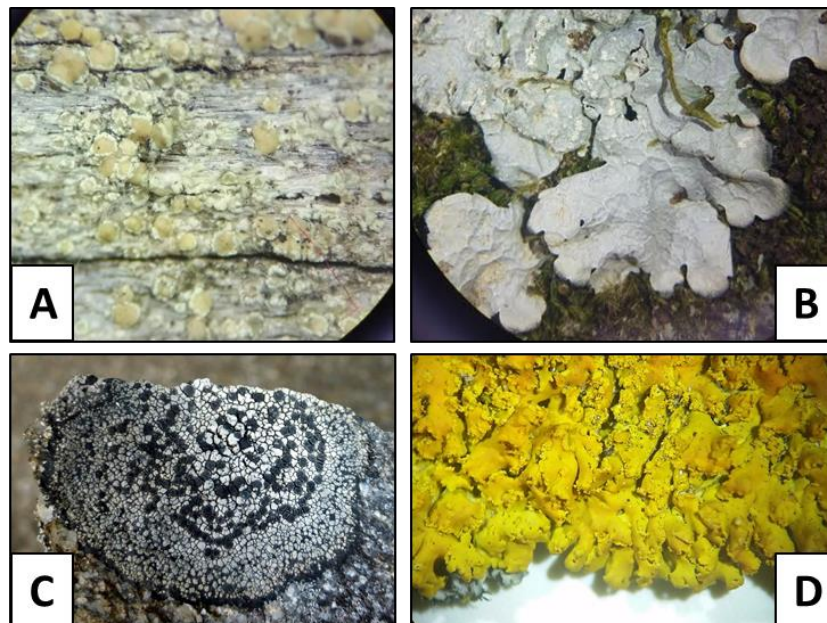


Figure 3. New species to the NCU lichen collection. A. *Lecanora symmictica*, on wood (Guilford County). B. *Lobaria scrobiculata* on bark (Halifax County). C. *Rhizocarpon petraeum* on rock (Yancey County). D. *Xanthomendoza ulophyllodes* on rock (Yancey County). All images by the author except for C: by Linda Phillips.

Part 3: New species from taxonomic changes

Recent taxonomic studies have placed once-familiar species into new genera. In the largely tropical family Trypetheliaceae, *Trypethelium* has been split into multiple species^{2,3}. Our very familiar Speckled Blister Lichen, *Trypethelium virens*, is now a new species in a different genus, *Viridothelium virens*³ (Fig 4A). Another group of common lichens including the False Bitter Wart Lichen (*Pertusaria multipunctoides*) (Fig. 4B) have been split from the wart lichen genus *Pertusaria* into the genus *Variolaria* with the addition of the very common Pustule Lichen (*Loxospora pustulata*).⁴ More recently this group was further split from the family Pertusariaceae into the related family Variolariaceae with another genus change, to *Lepra*.⁵ These name changes resulted in over 100 specimen annotations in the NCU collection.

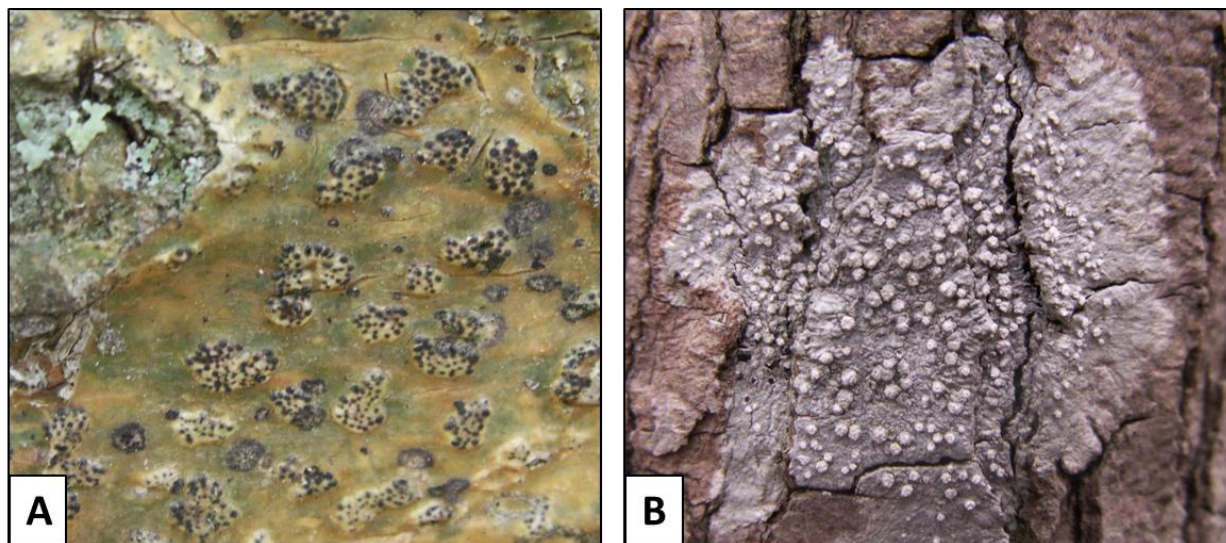


Figure 4. Two species whose names have recently changed. A. *Viridothelium virens* (formerly known as *Trypethelium virens*). B. *Lepra multipunctoides* (formerly known as *Pertusaria multipunctoides*, then *Variolaria multipunctoides*)

Two new reports were published that split species commonly found in North Carolina.^{6,7} T. L. Esslinger reports on a new species among the small rock-inhabiting foliose lichen *Physcia subtilis*.⁶ The new species, *Physcia thomsoniana* (Fig. 5B), is distinguished from the more typical *P. subtilis* (Fig. 5A) in having more robust lobes that appear to overlap, whereas those in *P. subtilis* are more adnate on the rock substrate. These distinctions are supported by internal anatomical differences between the two species

J. C. Lendemer *et al.* recognize two additional species within the common *Bacidia schweinitzii*.⁷ *Bacidia schweinitzii* (Fig. 5C) honors Lewis David von Schweinitz (1780-1834), “the father of American mycology.” (It is interesting to note that during his stay in North Carolina in the early 19th century, von Schweinitz was elected President of the University of North Carolina, but declined the offer to remain active the Moravian church in Salem, North Carolina.⁸) *Bacidia schweinitzii* was known to have variable “fruits”, from black to brown to blonde, and their internal anatomy differed in color too. From molecular analysis, Lendemer and colleagues found that these morphs are distinct enough to be considered separate species. The brown-fruited morph is now *B. ekmaniana* (Fig. 5D), and a third species, *B. purpurans*, was distinguished by its internal anatomy and chemistry.

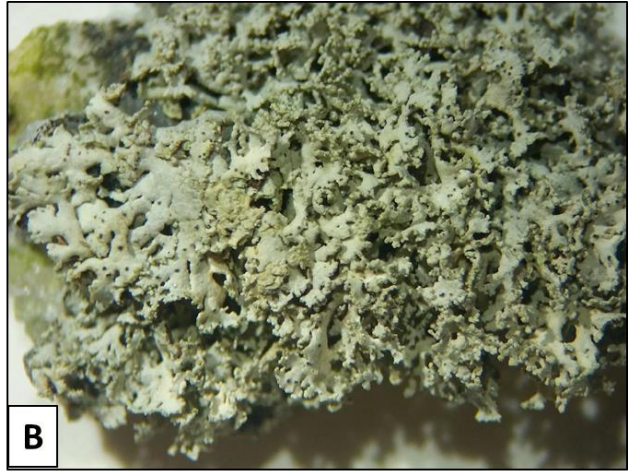


Figure 5. New species splits. A. *Physcia subtilis*. B. *Physcia thomsoniana*. C. *Bacidia schweinitzii*. D. *Bacidia ekmaniana*.

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