

Report from the Herbarium:  
**Pteriffic Pteridophytes:  
Herbarium begins to catalog ferns & fern allies**



By Carol Ann McCormick, Curator, UNC Herbarium

The University of North Carolina Herbarium (NCU), a department within the North Carolina Botanical Garden, is a research collection of pressed plants, fossils, and fungi. We have specimens from all over the world, and they range in age from Devonian fossils (419 million years old) to a fern ally collected on 1 January, 2019 (still in my plant press!).

A series of National Science Foundation (NSF) grants have enabled NCU to catalog some of our nearly 800,000 specimens of fungi, lichens, algae, mosses, and vascular plants. Each entry includes a digital image of the specimen as well as information about where and when it was collected.\*



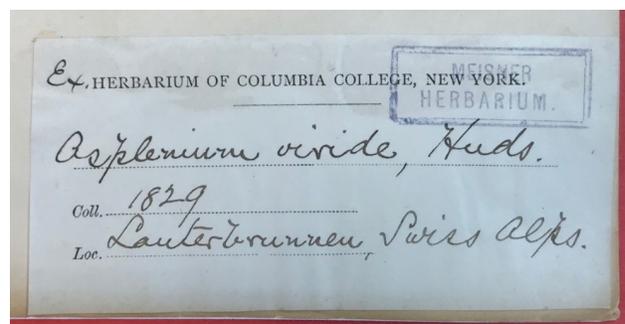
This month we have embarked on our latest cataloging effort: ferns, fern allies, and fossil ferns. Extant ferns and fern allies are cataloged into [pteridoportal.org](http://pteridoportal.org). Fossil ferns will have their own online portal, still in development at the time of this article.

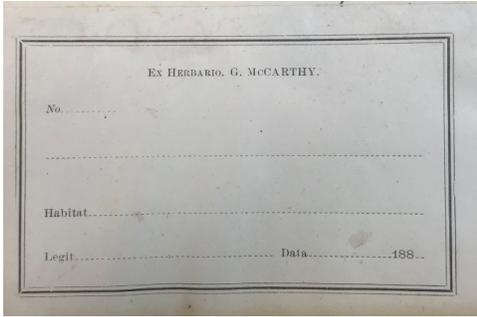
Staff and volunteers at the UNC Herbarium have already entered about 9,500 specimens of ferns and fern allies (clubmosses, horsetails, quillworts, spikemosses and whiskferns) from the southeastern United States into [pteridoportal.org](http://pteridoportal.org). On January 2, we began entering specimens from elsewhere in the Americas, Europe, Asia, Africa, and Australia.

Aside from the fossils, the oldest herbarium specimens in our collection date from the 1820s. On January 3, I found a lovely fern specimen, *Asplenium viride* Huds. (green spleenwort) that was collected in 1829 in the Swiss Alps village of Lauterbrunnen. Unfortunately, the specimen's original label does not include the name of the person who collected the plant. Exactly how it came to be housed at the UNC Herbarium is not known, but tantalizing clues reside on the sheet.

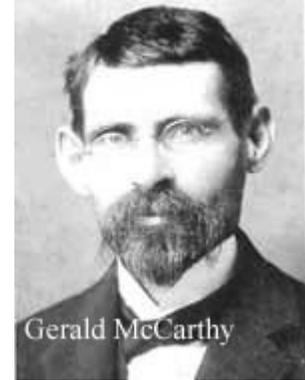
The original label, in the lower right corner, indicates that this fern specimen belonged to the Meisner collections at the Herbarium of Columbia College on Madison Avenue in New York City. "In 1874 the very extensive collection of the late

Professor Meisner, of Basle [sic], Switzerland, specially rich in South American, Asiatic and Australian species...[was] presented to the college."<sup>1</sup> It is possible that our *Asplenium viride* was culled – sold or given away – if the Columbia College Herbarium already had multiple specimens of that fern. The vascular plant specimens of the Columbia College Herbarium were transferred to the New York Botanical Garden in 1896.<sup>2</sup>





At some point, the specimen made its way to the collection of Gerald McCarthy, as indicated by the label in the lower left corner. Gerald McCarthy (1858-1915) was deaf as a result of a cerebrospinal meningitis infection at the age of 15. He attended the National Deaf-Mute College (now Gallaudet University) under the tutelage of botanist John White Chickering, Jr., who was particularly interested in alpine plants and had botanized on Mount Katahdin in Maine and Mount Washington in New Hampshire. (NCU also has about 20 specimens Chickering collected on



Gerald McCarthy. Photo courtesy of the North Carolina State University Herbarium (NCSC)

Roan Mountain in North Carolina.) Undergraduate McCarthy and Professor Chickering published a botanical paper together in 1886, and a few years later, McCarthy came to North Carolina to work as botanist at the state agricultural station in Raleigh, where he started Raleigh's first herbarium. In 1892, while collecting plants along a railroad track, McCarthy was struck and severely injured – due to deafness he had not sensed the locomotive's approach. Although he continued to work afterwards, he was dismissed from his role as state botanist in a political purge of educators and scientists in 1897. With another change in state politics in 1900, McCarthy regained a position in the North Carolina Department of Agriculture, but poor health forced him to retire in 1908, and he remained an invalid until his death in 1915.<sup>3</sup>

According to the history section of the NC State University Herbarium (NCSC) website, “Before the turn of the 19<sup>th</sup> century, two institutional herbaria existed in Raleigh. The oldest was initiated by the first State Botanist, Gerald McCarthy, and housed at the Agricultural Experiment Station. McCarthy described an herbarium of about 2,500 species. The fate of this collection has not been properly documented and remains unclear. So far, only a few specimens collected by McCarthy have been found at NCSC.”<sup>4</sup> NCU has cataloged about 135 specimens in our collection, with more to be found as we continue to catalog, so it seems likely that McCarthy's herbarium found its way to Chapel Hill, perhaps via the University Museum.

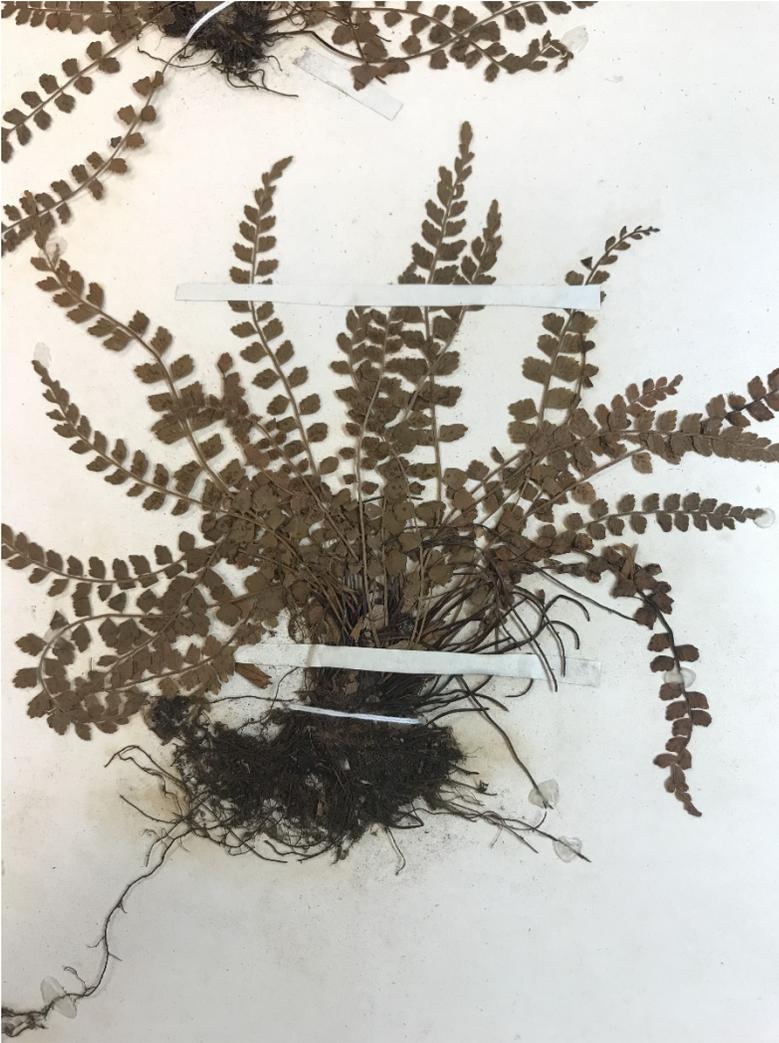


Joseph Austin Holmes. Portrait courtesy of William R. Burk.

Joseph Austin Holmes (1859-1915) was appointed professor of Geology and Natural History at UNC-Chapel Hill. Dr. Holmes was also in charge of the University Museum, located in Old East Building, which “contained over 3,000 specimens of rocks, ores, minerals, and a growing assemblage of woods, as well as zoological and botanical specimens illustrating the local fauna and flora.”<sup>5,6</sup> Holmes was an avid botanist, and the Herbarium has specimens he collected between 1877 and 1890. It seems likely that McCarthy and Holmes knew each other, and perhaps upon McCarthy's departure from Raleigh or upon his retirement, he considered Chapel Hill a safe place for his herbarium specimens.

1908 is usually considered to be the year that the Herbarium at Chapel Hill was founded, as that was the year that Dr. William Chambers Coker became full professor and chair of the newly established Botany Department located in Davie Hall. However, it is clear that botany professors and students had made and accumulated herbarium specimens decades before 1908.

Were the University Museum's specimens incorporated into the new Herbarium in 1908? Were Gerald McCarthy's specimens transferred from Raleigh to the University Museum in 1897, or did they come straight to the newly-founded Herbarium in 1908 when McCarthy retired? How did McCarthy acquire the fern specimen from Columbia College in the first place? I fear these questions may never be answered definitively, but we are fortunate that the specimen is in our collection, and that it is now available to researchers and pteridophiles everywhere via pteridportal.org.



*Asplenium viride* Huds. (green spleenwort)

1. Britton, N. L. 1887. Columbia College Herbaria. Botanical Gazette 12(1): 9-11. <https://www.jstor.org/stable/2994703>
2. Records of the Herbarium Office (RG4). Archives, The LuEsther T. Mertz Library, The New York Botanical Garden. [https://www.nybg.org/library/finding\\_guide/archv/herbarium\\_rg4f.html](https://www.nybg.org/library/finding_guide/archv/herbarium_rg4f.html) accessed on 4 January 2019.
3. Troyer, James. 1999. Stopped ears, open mind: Gerald McCarthy (1858-1915), North Carolina botanist. Journal of the Elisha Mitchell Scientific Society 115(4): 201-212. <https://dc.lib.unc.edu/cdm/singleitem/collection/jncas/id/3572/rec/2>
4. <https://projects.ncsu.edu/cals/plantbiology/nesc/history.htm> accessed on 4 January 2019.
5. Burk, William R. 2007. Collectors of the UNC Herbarium: Joseph Austin Holmes. [http://herbarium.unc.edu/Collectors/Holmes\\_J\\_A.htm](http://herbarium.unc.edu/Collectors/Holmes_J_A.htm) accessed on 4 January 2019.
6. William Burk, pers. comm., 3 January 2019.

\*To explore the specimens curated by the University of North Carolina at Chapel Hill Herbarium and other herbaria across North America, visit: [mycoportal.org](http://mycoportal.org) (fungi); [lichenportal.org](http://lichenportal.org) (lichens); [bryophyteportal.org](http://bryophyteportal.org) (mosses, hornworts & liverworts); [macroalgae.org](http://macroalgae.org) (algae); [serneportal.org](http://serneportal.org) (vascular plants); and [pteridoportal.org](http://pteridoportal.org) (ferns & fern allies). All portals are made possible through financial support provided by American citizens and the National Science Foundation.