

Beatrix Potter and the Lichens

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The UNC Herbarium's lichen collection of 1,500 specimens is dwarfed by the vascular plant collection of over 750,000. Just as lichens (a.k.a. lichenized fungi) and non-lichen fungi are an obscure part of our flora, one of their champions is also obscure, being instead celebrated for her achievements in children's literature. Ironically, it was the harsh dismissal by the scientific community of Victorian England that led Miss Beatrix Potter to exile in the countryside where she wrote the *Peter Rabbit* series. Prior to *Peter Rabbit*, Potter was an aspiring biologist interested in lichens. Some modern biographers have claimed she was an early proponent of the then heretical theory that lichens are a symbiosis between fungi and algae.^{1,2}

UNC Biology Librarian and fellow fungal enthusiast Bill Burk alerted me to Scott Kroken's recent article in *Inoculum*,³ which concludes that Potter did not believe in the symbiotic nature of lichens, and that she instead considered herself "an old fashioned lichenologist." I had to find out more, so I obtained a copy of *The Journal of Beatrix Potter 1881–1897* to learn what Miss Potter herself had to say.

The journal portrays an individual with many interests, primarily art and natural history. It wasn't until the final years of her journal, when Potter was in her late twenties, that she collected, illustrated, and studied fungi and endured the prevalent sexism of the scientific community of that time. Sadly, her frustrations were compounded by her shy nature, and she ultimately abandoned "my scientist's endeavors."

Through her uncle, chemist Sir Henry E. Roscoe, Potter obtained a student's ticket at the Royal Botanical Gardens, Kew, to conduct germination experiments of fungal spores with the "idea" that "all higher fungi have probably a mould . . ." (entry: 8/31/1896). In modern terms, Potter's "mould" would be the "hyphae" and "mycelia"—the vegetative, microscopic portions of the fungal organism. (The "mushroom" that we see is only the fertile, spore-producing portion of the organism.) Potter's journal doesn't give many details about her work, but she did remark on writing a paper reporting her findings. "On the Germination of the Spores of Agaricineae" was read at a Linnaean Society meeting on April 1, 1897 by Kew mycologist George Masee in her absence (women were seldom allowed to attend). Potter's paper was never published and was subsequently lost.

In one of her final entries dating from December 30, 1896, Potter gives us her views on lichen symbiosis from a conversa-

tion she had with George R. M. Murray, "keeper of Botany" at the Natural History Museum, London:

I asked him about lichen books and drew out an exposition of his views on the Schwendener theory [Simon Schwendener was the first to propose that lichens were fungal-algal symbiotic organisms in 1867]. I asked him whether the algae had spores too, or how it came to be always at hand. He said the algae grew by themselves but the fungus would not. . . . Upon the subject of chlorophyll and symbiosis I am afraid I am unpleasant. I could hardly contain myself with amusement. I don't think anyone else is *at it* [her italics]. [This curious statement may refer to her belief that lichens, as other fungi, have a hidden mycelium, which would make sense as it agrees with her primary research interest. It was misinterpreted by others that she believed in symbiosis.] He was so very high-handedly contemptuous of old fashioned lichenologists. [Again this suggests that Murray was a Schwendenerist, and Potter herself an "old fashioned lichenologist."]

In 1997, one hundred years after being barred, Beatrix Potter was given an official apology by the Linnaean Society at a meeting in her honor, and her works in mycology were recognized in a subsequent publication of *The Linnaean*.⁴ However, if one reads her own words, Beatrix Potter was not a proponent of the symbiotic nature of lichens. As

I interpret her journal entries, Potter's real contribution lies instead in being a proponent of the idea that lichenized fungi, just like other fungi, are composed of a network of microscopic filaments (hyphae) that form the vegetative portion (mycelium) of the organism.

References

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