

# Collecting lichens

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Lichens are ascomycetes with a photobiont (partner able to make sugar from atmospheric CO<sub>2</sub> using the sun's energy), but differ from other mushrooms in some important ways. For example, the *Leccinum scabrum* you might pick is the visible fruiting body of a large underground organism (the fungus), whose photobiont is a birch tree. Its underground part, the mycelium, is made up of a network of fibers called hyphae. Some extract water and minerals from the soil. Others wrap around the root tips of its birch partner. When you pick a *Leccinum scabrum*, you only remove a fruiting body from a large organism. The dual entity of fungus and birch is a much larger system; it would be physically impossible for you to collect such a system and take it home in your mushroom basket.

The photobiont of a lichen-fungus is not a huge tree, but a collection of unicellular organisms, so small that the fungal fibers wrap right around them, totally enveloping the partners in fungal tissue, incorporat-

ing them throughout its physical structure. It does not need a huge mycelial network to collect water and minerals from afar, because this small partners' needs are easy to satisfy. The system of fungus and photobiont is tiny, all contained within the visible fungus. Although collecting a lichen may seem similar to collecting a mushroom, collecting the lichen removes the entire organism and entire system, including both fungus and partners, not just one fruiting body. This may be fine with many of our lichen weeds, but with rare lichens it is not nearly so fine. Some rare lichens, like *Erioderma pedicellatum*, Figure 1, are only known from a handful of sites, where the number of separate "organisms" (actually mutualistic bipartite systems) are counted. To collect a basketful from such a site is not considered good form.

Therein lies the difference between mushrooms and lichens. Both are fungi, but with one, what you see is a small part of the organism, whereas with the other

*Figure 1. Erioderma pedicellatum, boreal felt lichen. Very rare in Newfoundland, which has 90% of the world population of this lichen. Not particularly distinctive, if I did not know, I might well fill my basket with them, were I out collecting lichens.*

Photo: Mac Pitcher.





what you see is the entire system, fungus and photobiont partner. Hence the first difference between collecting mushrooms and collecting lichens. Unless you know lichens and know exactly what you are collecting, you could remove the last representatives of a species on this earth. For this reason, lichens collecting should be left to experts. Mushrooms, on the other hand, can be collected by all of us in virtually any quantities.

If you have collected mushrooms for even a short time, you know that they follow Ecclesiastes: to every thing there is a season. Morels fruit in the spring, chanterelles in the summer, pine mushrooms in the fall and *Stromatocyphella conglobata* during periods of thaw in the winter. Fruiting may be seasonal, but the organism is always there. Just like the lichen. Except that the lichen organism is visible and may fruit all the time (Figure 2). A single tree may have literally thousands of individual lichens (Figure 3), on it all the time. With such abundance, making several collections of lichens does not add much real information. Even for people who can tell the lichen weed from the last species on earth, good practice is to collect or record one species per region/area/trail; an estimate of abundance can be done accurately by means other than counting collection numbers.

This explains why our lichen data merely indicates the presence or absence of a species. Because lichens are visible, an accurate representative count is possible that reflects all species and their relative abundance in a region. This sort of recording is appropriate in a more controlled and scientific setting than an amateur foray. For mushrooms, whose organisms are not visible except for the fruiting bodies, the abundance numbers we record are a very rough estimate for fruiting bodies. This may not correlate with the abundance of



Figure 2. *Cladonias* and others. Note the happy little British soldiers (*Cladonia cristatella*), no followers of Ecclesiastes, fruiting away with their red apotheciae three days before Christmas. Photo: Henry Mann.

organisms, and is certainly incomplete for the number of species. Not good, but the best we have.



Figure 3. *Parmelia squarrosa*, bottle-brush lichen. One of the very common lichens in our province (see Mac Pitcher's article, *OMPHALINA* II (7):18-19;2011). There were literally hundreds, if not thousands of them on this fallen tree, some happily in fruit in February, nadir of our dark winter. Photo: Maria Voitk.