

# Serpentine rock lichen survey —update 2016

Michele Piercey-Normore

Photo: Joe Brazil



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**Figure 1.** Collecting team 2016 and large peridotite boulder.

Team 2016 included André Arsenault, Joe Brazil, Michael Burzinski, Claudia Hanel, Jennifer Hoffman, Anne Marceau, Andrus Voitk, Maria Voitk, and myself (Figure 1). This year we added the Blow Me Down Valley to last year's Tablelands in our effort to determine what species grow on peridotite and whether they are unique to peridotite or are present on other rocks in the area as well, but can tolerate the inimical peridotite conditions.

Small peridotite boulders along the Blow Me Down Valley trail were scattered among many non-peridotite (mainly gabbro) rocks and boulders, and heavy vegetation. Non-peridotite rocks often had a wide range of lichens. The trail weaved its way through black spruce, balsam fir and birch dominated forests, occasionally opening into exposed low vegetation. Contorted white pine trees—the oldest in Atlantic Canada—were present in the open sunny areas adding character to the forest (Figure 2). After a considerable walk through such landscape, the trail ascended into tuckamore, interspersed with small fields of peridotite rubble. Delighted, we began searching for lichens in the rubble with renewed energy.

This inhospitable rock from the Earth's mantle showed a similar absence of lichens as it did last year. Last year two lichens were predominant on peridotite, while others were very rare, usually on rock with mixed mineral content. This year, only one of those two peridotite lichens was common. Pending definitive identification, we call it the "ghost lichen" (title banner). The other, which we name the "bleeding lichen", could not be found. One other lichen with scattered light gray aeroles was present—perhaps a strained effort from a *Rhizocarpon* or *Diplotomma* to grasp a hold on the hostile substrate. Some of the larger boulders had larger veins of olivine and pyroxine throughout the boulder, which are not as hostile toward lichens as peridotite, and provided suitable surface for common lichens in the area. One boulder was almost entirely pyroxine and had some very common lichens including *Rhizocarpon geographicum*, *Parmelia sulcata*, and *Caloplaca holocarpa*. As last year, erratics, mostly granite deposited from scouring glaciers, stood out with many colourful lichens.

Interestingly, we found large boulders with small bones deposited on top, where birds may have perched to feed on their prey. These bird perches have guano, bird excrement with high levels of nitrogen and phosphorus. Species that typically like to grow on bird perches were also present here, despite the underlying peridotite (Figures 3 & 4).

This year's survey was done in only one day, a large part of which was spent getting to and from the peridotite fields. Still, we added 10 new species to the 71 from last year. We plan to sample other areas of peridotite in Newfoundland over the next few years to learn which lichens can grow in these inhospitable conditions. Meanwhile, definitive identification, including consultation by saxicolous crustose lichen specialists, is progressing apace. At the end we hope to produce a list of lichen species from our serpentinized rock fields, both on peridotite, and on other rocks.



Photo: Claudia Hanel

**Figure 2.** Fleeting glimpse of the rare, old *Pinosaurus strobos*.



Photo: Joe Brazil

**Figure 3.** *Caloplaca* sp. on bird perch.



Photo: Joe Brazil

**Figure 4.** *Rusavskia elegans* on bird perch.