Two New Endangered Lichen Species In Strathcona Provincial Park Raise Concerns about BC Parks Management of Conservation Areas

Figure 1: *Euopsis granatina.* Red-listed species new to Vancouver Island, found in Strathcona Provincial Park in 2023

This summer, in spite of adverse conditions created by the challenges of a year of climate extremes the Strathcona Wilderness Institute was able to add to the record of new species documented in Strathcona Provincial Park. The first, *Euopsis granatina* is a red-listed species new to Vancouver Island, and the other tentatively appears to be a new species to science: "*Euopsis X*". This seems to be a new un-described North American species in the genus *Euopsis*. This genus was first described in 1987 by the late Finnish lichenologist Aino Henssen (1925-2011).[1] This would be the third of the two species currently belonging to the genus *Euopsis.*

[1] Henssen A, B.Budel and A. Titze (1987) *Euopsis* and *Harpidium* genera of Lichinaceae (Lichenes) with rostrate asci. Botanica Acta 101: 49-55.

Two years ago I observed and reported three separate occurrences of *Euopsis pulvinata* (**Figure 2)** in three separate locations of the park. While infrequently found, it has no conservation status and is considered widespread. It is found on volcanic rock in open exposed higher subalpine to alpine areas . Like all the *Euopsis,* it is reddish brown and forms lecanorine (cup-like with a border) apothecia with thalline exciple (border made of the thallus.) The thallus is usually no more that about about 1 cm. The apothecia are about 1mm. The thalline exciple photobiont contains the cyanobacteria *Gloeocapsa,* and, importantly, it does not contain green algae. It has a widespread geographic distribution and is found on non-calcareous rock and alpine sod as well as other lichens or mosses.

Figure 2: *Euopsis pulvinata* Infrequent species with thalline apothecia documented in Strathcona Provincial Park in 2021.

The second species which is new to Strathcona Park and to Vancouver Island is *Euopsis granatina,* which is a red-listed species (**Figure 1**). The thalline exciple contains both cyanobacteria (*Gloeocapsa*) and green algae (*Trebouxia*). It is found on volcanic rock in exposed (cliff) conditions. The individivual thallus is about 0.5cm. The apothecia are about 0.3mm in diameter. The green algae give the thalline edges of the apothecia a white or cream colour that makes the thallus appear to be mottled. This species has an arctic and alpine

distribution. Its known distribution appears to be from the arctic to Colorado and the Cascades to Oregon.

The third and new species (**Figure 3)** is temporarily named, for the purposes of this discussion, "*Euopsis X.*" It appears to have never been observed or described, and the consensus so far is that it seems to be a new species. It is found on non-calcareous rock above ~1200 metres. The thallus of this new species resembles closely the striated rows formed by some members of the genus *Pyrenopsis,* another reddish-brown species found on rock. Prior to Aino Henssen's work *Euopsis* was lumped with *Pyrenopsis.* The distinction between the two genuses comes largely from differences in their apothecia. *Euopsis* form bordered thalline apothecia, such as we see in **Figure 3** and **Figure 1.** *Pyrenopsis* form sunken perithecia (vase-like) apothecia. In this new species, the apothecia have, as in *Euopsis pulvinata,* knobby thalline edges. The individual thalli which are only obvious because they form a 2 -3 cm colony, appear to be about 0.25 cm and the apothecia are about 2 mm, visible only with high lens magnification. It looks like a fine-grained version of *Euopsis pulvinata.* Algal constituents have yet to be analysed and determined.

Figure 3: *"Euopsis X"* an undescribed species of Euopsis new to science found in Strathcona Provincial Park in 2023.

While these finds are important in themselves, they also have important implications with regards to BC Park's attitude to the management of the park as a conservation area. Currently, BC Parks is allowing four sets of fires associated with the Wolf River fire to merge with the Mount Con Reid fire and burn out of control.[2] BC Parks invokes a policy of letting natural fires burn in natural areas. Notwithstanding the good intentions of that policy, few scientists would consider our current fire situation to be "a natural process." By all accounts outside of BC Parks and purveyors of conspiracy theories, these fires, as the hundreds that are burning across the province, cannot be construed to be "natural." These fires are a product of climate change which is driven by human agency.

The issue with these fires is that while the public may assume that we know what is burning, just as we assume that we know what we are losing in a clearcut - that is not the case. We have at best only a cursory sense of the species we are incinerating. As I have argued elsewhere: we do not conduct biological surveys to determine what species are present, unless they have a commercial value. To put things politely: we manage without data, we fly blind, we don't know what we are doing.

Although SWI has only been able to carry out shoestring surveys over the last two years, the Wolf River drainage has thus far proven to be a gold mine of rare species. Cursory surveys done on a shoestring have documented important populations of endangered species "Old-growth specklebelly" (*Pseudocyphellaria rainierensis)* and "Wahlenberg's Goblin Lights" (*Catolechia wahlenbergii*). There have also been reports of relict fish populations in streams and lakes above waterfalls.

The discovery of previously unrecorded species, and species previously undescribed in science, does not only tell us about rare species that may be unique to Strathcona Park or Vancouver Island. These discoveries are a reminder of how little we know, even as governments profess to be protecting our ecosystems' hydrological processes, and managing our conservation areas wisely for the benefit of future generations. Surveys done in the alpine ecosystems of the park that turn up previously undescribed species new to science bear witness to the presence of endemics. These are species that were isolated by the retreat of the last Ice Age, or that survived the Ice Age in refugiae, and have now evolved to be unique to this place. While these endemics are less easily observable than the popular "Vancouver Island marmot" (*Marmota vancouverensis*), they are equally of note, because their presence reminds us of the complex evolution of the unique ecosystems we depend on for everything from the water we drink to the homes we live in. Biodivesity is not ornamental, it is the nuts, bolts and rivets that make an ecosystem function and make it unique.

Over the past five years the research work of the Strathcona Wilderness Institute (SWI), which continues to be unsupported, if not obstructed, by BC Parks, has been able to greatly increase the number of species documented in Strathcona Provincial Park. This summer, important work on endangered American Black Swift (*Cypseloides niger*) was scuttled by BC Parks, seemingly, if inadvertently, to protect the interests of the private resort on Moat Lake. Research students were prevented from staying overnight near the lake to record nesting habitat, as per the Bird Studies protocol which requires that three sets of observations be made a half hour before dawn and half an hour after dusk, and therefore requires that in remote locations observers be on site overnight.

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[2] https://www.vicnews.com/local-news/mount-con-reid-fire-grows-to-1577-hectares-in-strathcona-provincial-park-2335412

This survey work is important, not just to help entities such as Birds Canada protect endangered species such as American Black Swifts. SWI's work provides an account of the biodiversity of the park and its distribution for future management planning as well as a record of climate change and its impacts. With the exceptions of the blight of the mine and the damming of Upper Campbell and Buttle Lakes, most of the park's terrestrial and aquatic systems have been minimally disturbed since the last Ice Age. It is a living lab of old-growth and relict species, biodiversity and processes untouched by industry. It also provides an insight into the number of species per square kilometre that would have been expected in pre-contact environments in coastal British Columbia, and therefore of the number of species that are permanently unaccounted for and have been lost to the destructive practices of the Ministry of Forests across the entire province.

The facilitation of the same destruction that brought Larkin to declare that *"the park is a mess,"* now returns and finds new life in new avatars of commercialization and bureaucratic respectability. We vaguely catalogue important species with "Key Biodiversity Areas" that will remain remote entities managed in a far corner of a government office and whose fate will still be subject to ministerial "fiat," notwithstanding glossy mesmerizing publicity that gives the illusion of conservation, while we will promote commercial interests, be they those of settlers or First Nations. We set up a "Strathcona Park Advisory Committee, chaired by a retired mine employee favourable to the mine's interests. We promote "inclusivity" by setting up a reservation system that, as research shows, excludes a significant segment of the public. We exclude research that may not conform or subscribe to the objectives of the government of the day.

The current management policies appear to inadvertently protect commercial interests and neglect conservation and biodiversity priorities to which Canada is a signatory and to which British Columbia, claims to pay lip service. This simply perpetuates the same calamitous mindset that led to the condemnation of BC Parks by Peter Larkin in 1989. We pretend to "reconcile" industry and conservation, as though oil and water can co-exist outside of an Exxon slick. Commerce has no place in parks and conservation areas which generations have fought for, for the public good. A mine in the centre of BC's oldest provincial park had no place in 1988, and it has even less now as we enter a new age of biodiversity crisis. Fire policies that treat the unprecedented fires we now face as "natural" are as out-of-step with the realities of today. Three decades of government policies aiming to perpetuate the "business-as-usual" of the 1960's, without really facing and confronting a climate crisis we were well aware of, has now brought us to the brink. That has equally no place in today's reality. That this mindset should continue to guide conservation policy is no longer acceptable nor tenable.

It is time for the winds of change to return like fresh air. Strathcona Provincial Park is not just home to a generic forest miraculously set aside from BC Forests' "scientific management" by chainsaw and skidder. It is one of BC's last great arks of biodiversity that can still yield up, with minimal effort, new species, unrecorded by science. Their presence is a measure of the government-sanctioned destructivity that takes place daily in this province. To know these species and appreciate their value anchors us into the life of this place. That is "reconciliation," because there is no reconciliation where we do not reconcile with the land. These rare species are a measure of the uniqueness and fragility of these ecosystems that are taken for granted and abused in the name of "recreation," which is often plain destruction where there is no respect for place. Strathcona Park is our Amazon in our back yard, if it is not mined, logged or incinerated in the name of government ,or industry management, or tourism, or death in government care. It is time to look back to 1988 and stand up for Strathcona Provincial Park, once again.

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