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Happy Valley - Goose Bay

Newsletter of FORAY NEWFOUNDLAND AND LABRADOR
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FORAY NEWFOUNDLAND AND LABRADOR

is an amateur, volunteer-run, community, not-for-profit organization with a mission to organize enjoyable and informative amateur mushroom forays in Newfoundland and Labrador and disseminate the knowledge gained.

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COVER

Gosling lake. *Photo by Maria Voitk.*

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Message from the Editor

I am pleased to present to you the 2016 Foray Report. We have received many wonderful contributions this year ranging from photo submissions, stories, articles, and of course our raison d'être, the species lists. In this special edition of the Omphalina we start you off with Michael's travelogue, followed by Simon's not-to-be-missed perspective on the Foray as a first time attendee. Next, a series of articles on a treasure trove of Labrador finds; thank you Leanne, Troy and Andrus for these contributions. We are also pleased to include a key to arboreal lichens for the HV-GB area courtesy of Troy and Yolanda. You will want to tuck that away somewhere for future reference.

Along with a lot of hard work, a Foray is a great opportunity to learn, have fun and enjoy the company of like minded folk. Once again, Foray NL hosted a series of talks, walks, and work shops– for those see our Foray Fotos, Workshops and Walks sections. Thanks to all who offered to teach and share their enthusiasm with the rest of us. And a special thanks to the organisers of these events.

Lastly, once the official Foray is over, work still continues, examining the collections and compiling the data. Please check out the 2016 species lists to see the culmination of those efforts. We have come a long way.

Marian Wissink
Guest Editor

Tracy Hill Trail, overlooking Red Bay. Photo: Roger Smith

Words from the President

Thanks to Everyone Involved!

Foray 2016 in Happy Valley-Goose Bay was a great success. We had 52 participants and identified 1,100+ specimens of lichens and fungi (some of our faculty are still working on specimens that they brought home with them). This was the most complex Foray to arrange so far, and we received a lot of help from area residents Betty-Anne Fequet and Robin McGrath before and during the event, and also from Estelle Michelin and Cyril Brennan.

We were very impressed by the scenery and hospitality in central Labrador, and by the size of the task for the Foray if we really hope to sample the fungi of the entire province of Newfoundland and Labrador! We are also grateful to Minister of Environment and Climate Change, the Hon. Perry Trimper and his wife Caroline Hong, for welcoming Foray participants to his riding—it is a rare honour for the foray to have the attention of the government!

Birch Brook Nordic Ski Lodge was a wonderful location for our base, and with the Youth Camp across the road it provided everything that we needed. The ski and snowshoe trails traverse a diversity of habitats, and many specimens were collected in the vicinity of the Lodge. This building and its extensive trails are a wonderful asset for the community and an important resource for anyone interested in exploring the natural history of Labrador. We look forward to holding another Foray in Labrador!

Although Foray 2016 is long over, the work continues. The team has been finalizing the database, checking over each of the 1,015+ dried specimens, and preparing this final report. Each year this takes us many weeks of work, but it is critical so that we can present you with the results.

And the Foray board never sleeps. We have already begun to prepare for Foray 2017 in Humber Valley, and over the coming months we will work out the details of faculty, accommodations, meals, working areas, and funding. My thanks again to everyone who contributed to the success of Foray 2016, and I look hope to see you at Foray 2017.

Michael Burzynski
President, Foray Newfoundland and Labrador

Photo: Roger Smith

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Photo: Maria Voitk

Getting There—the Trip to Goose Bay

Michael Burzynski

Michael and Roger's car driving the TLH, as seen (or not seen?) from Andrus and Maria's car. Maria Voitk.

Getting to Goose Bay was as much of an adventure as Goose Bay itself. Five of us drove from Newfoundland (Helen and Don Spencer drove via Québec – in comparison, we took the short cut!). Andrus and Maria Voitk in a rented van, André Arsenault in a truck, and Roger Smith and I in a rented SUV. We had to rent the two larger vehicles to carry the equipment that we require for a Foray.

Each Foray has two components: the Faculty Foray, which starts on the Monday or Tuesday before the Foray; and the actual Foray, which starts on Friday afternoon and ends with the Annual General Meeting on Sunday afternoon. The Faculty Foray is a chance for invited identifiers to familiarize themselves with the area and its mushrooms and lichens. It is also a chance for the scientists to collect material for their own research. So, each Foray actually lasts a full week for those of us who are organizing the event. Because of the distance, Labrador took several days longer!

We picked up the two rental vehicles on Thursday, September 1st, loaded them to the dome lights with compound and dissecting microscopes, microscopy kits, dryers, books, empty specimen bags and boxes, data cards, lights, computers, projectors, cameras, specimen trays, programs, hats, whistles and all sorts of other necessary equipment. On Friday morning we squeezed into the already bulging vehicles and headed north to catch the 1:00 pm ferry from St. Barbe to Blanc Sablon.

After a quiet 1¾-hour crossing, we drove directly to Forteau, where we booked into a cabin and then headed out for a walk along the Overfall Brook Trail. Andrus was hoping to find an omphalina-like musroom, collected there once before, which may be an unknown species. Although we did not see that mushroom, we found and photographed *Gyromitra ambigua*, saw a dredge offshore that was preparing an underwater trench for the hydro cable from Muskrat Falls, watched a humpback whale for a couple of breaths, and then walked

back to our cabin with an amazing full-arc rainbow framing the massive cliff excavation north of Forteau where rock is being quarried for the hydro project.

Maria descending the Overfall Trail, Forteau. Roger Smith.

Gyromitra ambigua, *Overfall Trail. Michael Burzynski*

Next morning we picked up an emergency satellite phone – provided free of charge by the government for travelers of the Trans Labrador Highway (TLH) – and headed north, stopping first at the dunes in Forteau to photograph the false truffle *Alpova cinnamomeus*, the recently described waxcap *Hygrocybe jackmanii* (*Omphalina* Vol. VII, No.1, 2016), and the black earthtongue *Sabuloglossum arenarium*—three special Labrador species. Then we headed to Pinware River Provincial Park, where we first walked through the grass-covered dunes [marram grass (*Ammophila arenaria*) and sea lyme-grass (*Leymus mollis*) growing together] looking for interesting fungi, then we checked out the lawns around the parking lot and moved into the forest of small weather-beaten spruce and fir (tuckamore). About an hour later we were chased out of the woods by ravenous mosquitoes, and bolted for the cars (grabbing a few quick photos along the way). We hit the road and headed for Red Bay.

Andrus at Forteau dunes photographing Hygrocybe jackmanii *(the orange dot) and* Sabuloglossum arenarium *(the black dot). Michael Burzynski.*

Grass-covered dunes at Pinware River Provincial Park. Michael Burzynski.

We did not have time to search Saddle Island—the Basque whaling station from the 1500s, so we confined ourselves to Tracy's Hill Trail, a boardwalk from sea level to hill summit that includes 689 stairs. There we found many leccinums and russulas, and some promising looking omphalinas, which turned out to be much less interesting once Andrus was able to look at them closely.

Tracy Hill Trail, overlooking Red Bay. Michel Burzynski.

Back at the base of Tracy Hill we took a branch trail to the Boney Shore, collecting a few specimens around the massive bowhead and right whale skulls left there by the Basques 500 years ago.

Ancient whale skulls on the Boney Shore. Michael Burzynski.

In the cars again, we made double sure that our tanks were full of gasoline and then headed out of Red Bay and onto the TLH. It is wide and straight and unencumbered by asphalt for most of its 606 dusty kilometres. North of Red Bay, long stretches of the highway have recently been rebuilt following the contours of the land. The earlier route was carefully and expensively blasted into the landscape, producing deep roadcuts that acted as dumping sites for wind-blown snow. These proved impossible to keep open in winter, so there are now long parallel scars across the rocky landscape. Very few vehicles were using the highway, and they were visible from far off because of the brown plumes that rose behind them. Each passing vehicle left a pall of rock dust.

Original highway on the left, new highway on the right. Michael Burzynski.

We reached Port Hope Simpson around 7:00 pm, and booked into the Alexis Hotel, where illness led to the unfortunate situation of desk staff having to double as cooks. The local scallops were well cooked—really well cooked—and memorable for their unusual chewiness, but on the road, food is food!

Next morning we headed for Goose Bay again, making a few stops along the way to rest and check for mushrooms. The mosquitoes and blackflies had obviously been underfed, so we paid for our explorations in blood. The landscape was beautiful, with several large rivers and seemingly endless black spruce forest interspersed with rock barrens, lakes, and bogs. Except for the occasional Department of Highways depot, there are no houses, gas stations or other human structures.

Typical scenery along the highway. Michael Burzynski.

About two thirds of the way to Goose Bay, a car passed the SUV that Roger and I were in, and we heard one quiet little "tic" as something hit our vehicle. It was a rock, of course, and it chipped the uppermost edge of the windshield—another centimetre or two and it would have missed completely—but no, it got us. For the rest of the drive to Goose Bay we watched the tiny crack lengthen and wander across the glass as the car rattled around in potholes, eventually reaching about 25 cm.

Roadside wetland. Michael Burzynski.

Somewhere in the woods, still many kilometres from Goose Bay, the gravel suddenly disappeared beneath perfectly smooth black asphalt, and we knew that the drive would soon be over. It took us about 7 1/2 hours to drive from Port Hope-Simpson to Goose Bay. We were all pretty tired at this point, but after making our way through Goose Bay and driving another 35 km to our lodgings at Motel North in North West River, we found that our trip was not yet over. We had to drive back into Goose Bay to register and pick up keys from Hotel North. Aaaand even then it was not over, because that's when we found out that in Goose Bay there is a Hotel North and a Hotel North Two, and only one has the keys to the rooms at Motel North. Finally, after visiting more Hotels North than one would think necessary, we drove the 35 km to North West River for the third time, and unloaded just in time to drive back to Goose Bay to meet arriving mycologists and lichenologists at the airport.

The rest of the Happy Valley-Goose Bay experience was wonderful, with great weather and field trips during the Faculty Foray and the actual Foray. The ferry schedule did not leave adequate time to pack everything on Monday and drive far enough to catch the ferry on Tuesday, so we stayed an extra day. This gave us enough time to pack all the gear, and to dry all the specimens completely, saving the need to unpack them at home, set up dryers, dry them, and then repack them—usually our first chore after a foray. Except for slight damage to the second vehicle's windshield, the return trip was uneventful. We did make a stop to check ditch and bog fungi part way along, and found several interesting specimens.

Ditch mushrooms along the highway. Top, probable Rickenella fibula *on the left and an unknown* Arrhenia *on the right; bottom,* Galerina *cf.* terrestris. *Michael Burzynski.*

After an overnight stop in Mary's Harbour, by late afternoon on Wednesday, Sept. 14, we were back home again—still buzzing from all the driving.

A first-time Forayer's report from the Newfoundland and Labrador Mushroom Foray, 2016

Simon Jackson

The plan to attend the Foray was hatched in an unlikely meeting with our good buddies and mushroomers from Torbay, Don and Helen Spencer, at St. John's airport in June where my wife, Joy, and I had a 2-hour stopover on route from Ottawa to London. First, we would all holiday together for a couple of weeks in the Saguenay area of Québec and then we would head, one way or another, up to Happy Valley-Goose Bay for the Foray. For us, with our "is there a difference between a mushroom and a toadstool" level of mushroom knowledge, it was, we were assured, a great opportunity to commence our education in the wonderful world of fungi. After all, back at our little farm, we had just taken the first steps in mushroom farming when we blindly inoculated dozens of logs with shiitake and oyster mushroom spawn.

Well, it did not bode well when we mentioned our plan to a Labrador archaeologist friend who knowingly informed us that the famous Labrador explorer, George Cartwright, a keenly observant outdoorsman, wrote that he "never saw a Mushroom in Labrador". Nor did the omens improve when, in the Saguenay a few months later, it became unnervingly clear with each attempt to identify even the rudiments of a fungus along the trail's edge that our ignorance was going to make us the laughing stock of the Foray. "Oh, you'll be fine", Helen reassured us with a deeply concerned glance at a despairing Don.

And so the day came that we waited to board the flight from Halifax to Goose Bay. Glancing around, we observed the Tilley hats, hand lenses and baskets of the surely would-be mushroomers. As the forayers congregated in the arrivals area at Goose Bay, we congratulated ourselves that we could recognise mushroomers with 100 percent accuracy, even if we could not identify a single mushroom. "I'm Andrus Voitk, how are you?" a voice greeted us. "We're great", we stammered. "That will soon pass" came the foreboding reply.

The Foray convened at the Birch Brook Nordic Ski Lodge the next evening. Joy and I had naturally signed up for Mushrooms 101, which was a very useful introduction to the extraordinary science of fungi. Fortunately, there was no associated assessment, and we were just beginning to think we were going to get through at least the first evening unscathed when Joy made the first howler. "So are we are going to find lots of edibles?", she asked Andrus. "Do you think when bird watchers are out birdwatching, they're asking which ones they can eat?" came the terse response.

The next day dawned bright and sunny and we arranged ourselves in groups. We were lucky to be teamed with group leader Greg Thorn, who is a wonderfully knowledgeable and patient leader/instructor. A university professor from Western University, he had presumably taught similarly inept although much less attentive students. In no time at all, the group had found – and Greg had identified and waxed lyrical over – dozens of mushroom. Under a warm Labrador sun, a more enlightening and pleasant few hours would have been difficult to attain.

We returned our haul to the Lodge for "the Faculty" to sort, identify, photograph, and catalogue – astonishingly, more than a 1,000 species, all told. It was going to be a long night for them. Dinner featured some delicious dishes cooked with locally grown chanterelles after which we attended presentations.

The following day dawned grey with threatening skies. Joy attended a workshop on cooking with mushrooms, while I, no doubt to Greg's deepening despondency, attended his mushroom identification workshop in the display room where some of the best specimens collected were on show. I was pleased to see a fine bolete that I had found had been selected. In the afternoon, Joy went on an excellent lichen tour with lichenologist, Troy McMullin, while I attended the "Pick for the Pot" collecting trip where, in the now pouring rain, we were let loose on a veritable sea of chanterelles. An evening of frying later, they fit nicely in a half dozen freezer bags for the flight back home the next day.

Have we learned to identify a wide range of mushroom species? Absolutely not. For a while, I thought I had mastered the bolete but then, despairingly, I discovered imposters. Did I learn something of the extraordinary and unimagined (to me) roles that fungi play in nature? Absolutely. Will we be attending next year's Foray? Sorry, Greg, but we are already making plans … and will be signing up for Mushrooms 101 at the first opportunity. Now, let's all hope that George Cartwright found no mushrooms in the Humber Valley either.

Greg Thorn's group lunching at the Foray – Greg still smiling!

Shaggy Mane

Leanna Butters

I had the pleasure of attending my first, ever, Foray in Goose Bay, where I came across the **shaggy mane**. Though I am told it is quite common,[1] I was enchanted by its shape and size. It is no surprise then that when asked to choose a mushroom to write about for this issue, it was the shaggy mane that first came to mind.

Shaggy mane, or *Coprinus comatus*, has been described as a 'large and meaty' mushroom often found growing in gardens, parks, on lawns, and amidst decomposing matter.[2] It can be found growing in the spring, summer, and fall. In our area it is most common on lawns and along roadsides at the end of September or early October. When I came across it in Goose Bay, it grew in a cluster of three among tall grass, obscured almost entirely but for the top of one cap. It wasn't until I moved the grass aside that I realized how robust it was (at least compared to mushrooms I had looked at so far—remember, this is my first foray), reaching over six inches (15 cm) in height. The one on the right measured 33 cm. Apparently it is known for breaking up pavement.[3]

The caps of these mushrooms are long, cylindrical, and covered with shaggy scales—hence their common name. Their gills are packed closely together and, as the mushrooms age and spores are released, will begin to blacken and melt (deliquesce) at their lower edges. The blackening will continue and the edge will melt upwards, as the mushroom dissolves its own tissues, after reaching maturity.

I have yet to try them myself, but shaggy manes are considered very good edibles. Sources suggest they are best picked and eaten young. They keep blackening and deliquescing after collecting, so mushrooms should be stored in the refrigerator and prepared quickly. Apparently the black material does not affect the taste, but does influence the looks.[4] Boiling them halts the blackening process.[5]

I'll certainly be keeping an eye out for these charming mushrooms on future hikes!

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Hypogymnia pulverata—a new North American population, discovered in Labrador, Canada

During Foray Newfoundland and Labrador's 2016 annual foray in the Happy Valley-Goose Bay region of Labrador, a rare lichen in North America was discovered, *Hypogymnia pulverata* (Nyl. ex Cromb.) Elix (title banner & Figure 1). It was reported for the first time on the continent from a single collection on the northeastern shore of Hudson Bay in northern Québec,[1] a single specimen was then collected in Oregon,[2] a large population was found next in Alaska,[3] and it was most recently reported from the Chic-Choc Mountains in eastern Québec.[4] The collections reported here represent the easternmost known population in North America and extend its range approximately 650 km northeast of the Chic-Choc Mountains (Fig. 2).

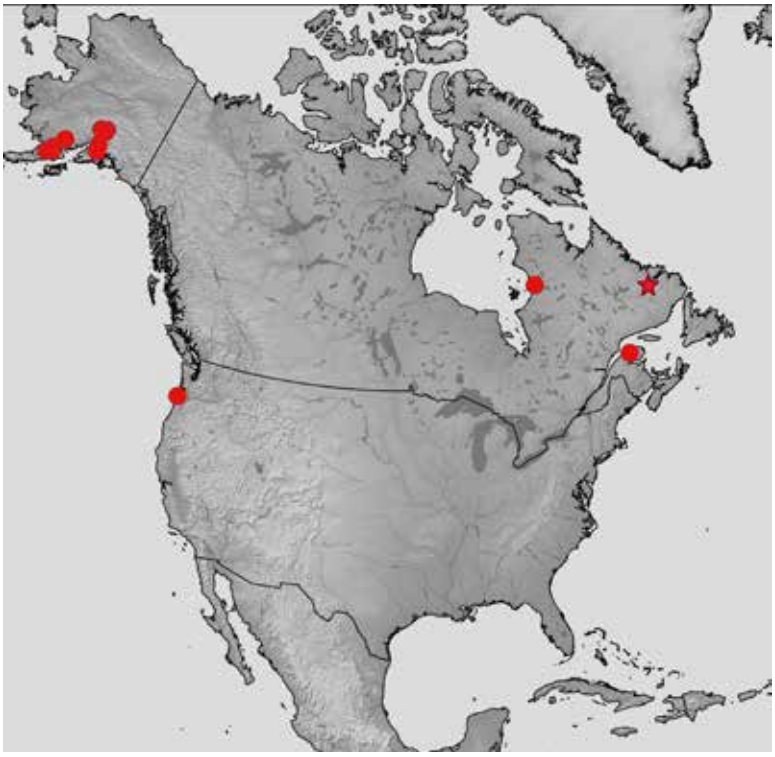

Figure 2. *The North American distribution of* Hypogymnia pulverata. *The new Labrador population is indicated by a star.*

Hypogymnia pulverata was collected at three sites (North West River, Mud Lake, and Birch Brook Nordic Ski Club) during the foray (see Specimens Examined, below, for site details). The North West River and Mud Lake sites were the furthest apart at approximately 26 km. At the North West River site, 15 thalli were observed along a ~120 metre transect, at the Mud Lake site one thallus was located on a ~100 metre transect, and at the Birch Brook Nordic Ski Club site 10 thalli were observed

Figure 1. Hypogymia pulverata *at the North West River site in Labrador, McMullin #17108 (CANL).*
Title banner. Hypogymia pulverata *at the Birch Brook Nordic Ski Club site in Labrador, McMullin #17147 (CANL). Scale bar = 1.9 cm.*

over a ~150 metre transect. All sites had similar habitats (Figure 3)—humid conifer forests dominated by balsam fir (*Abies balsamea*) and spruce (*Picea* spp.). Thalli were usually on the dead branches of live trees and rarely on the trunks. All of the populations in North America are coastal except the population reported here. These sites, however, are in close proximity to Lake Melville, which is a large body of water (3,069 km^2) and may produce a coastal environment similar to proximity to an ocean.

Labrador specimens were chemically consistent with most North American populations: a positive medullary reaction to an alcohol solution of para-phenylenediamine (turning red). Only the Oregon population had a negative reaction. Populations globally have been found with and without the chemicals that cause this reaction (physodalic and protocetraric acid).[5] *Hypogymnia pulverata* is widely dispersed globally in Australasia, China, eastern Russia, Japan, and South America.[6–8] Of the 38 *Hypogymnia* species known from North America, it is the only one with a solid medulla, laminal soredia, and a lower surface that is not pitted.[4, 9]

The specimens reported here are the first records of *H. pulverata* in the province of Newfoundland and Labrador. They contribute to a growing understanding of its distribution in North America.[4] Though the distribution of *H. pulverata* remains notably scattered, these records help to narrow the gap between some populations.

Specimens Examined

CANADA. NEWFOUNDLAND AND LABRADOR. Division 10. North West River, Labrador Heritage Museum, Labrador Interpretation Trail, 53.534989°N, 60.148467°W, humid conifer forest, tree cover dominated by *Abies balsamea* and *Picea mariana* (black spruce), ground cover dominated by *Pleurozium schreberi*

Figure 3. *Typical habitat of* Hypogymia pulverata *at all of the Labrador sites reported here. Image is of the North West River site.*

(Schreber's big red stem feathermoss), 6-Sept-2016, corticolous on *A. balsamea*, ~80 m north of the parking lot, McMullin 17108 (CANL), corticolous on *P. mariana*, ~25 m north of the parking lot, McMullin 17106 (CANL), corticolous on *P. mariana*, ~10 m north of the parking lot, McMullin 17107 (CANL); Birch Brook Nordic Ski Club, along the North West River Road at Gosling Lake, on Robin's Route Trail, 53.433632°N, 60.380856°W, humid conifer forest dominated by *A. balsamea* and *P. mariana*, 10-Sept-2016, corticolous on *P. mariana*, ~75 m northwest of the lodge, McMullin 17147 (CANL); Mud Lake, 53.307478°N, 60.172758°W, humid mixed-wood conifer forest, 08-Sept-2016, corticolous on *P. mariana*, ~10 m west of the waterway between Mud Lake and the Churchill River, McMullin 17089 (CANL).

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Multiclavula mucida

Andrus Voitk

Photo: Roger Smith

Wherever students of lichenized ascomycetes gather, if talk turns to *Multiclavula mucida*, the room of previously collegial scientists polarizes into two acrimonious camps. Democrats argue that *M. mucida* should be allowed free access to the land of lichens, while isolationists clamour to build a wall barring its entry; they maintain that although it grows near algae, maybe even has an obligatory association, the relationship lacks structure, i.e. a **thallus** (a fungal structure containing algae). The HVGB area provided several good fruitings of *M. mucida*, allowing us to conduct our own investigation to see whose argument can be substantiated.

The thick algal mat in which these small clubs grow is readily seen in the title banner. Algae have covered the soil, fallen conifer duff, and surrounding moss, everything but the beetle in the middle. The mat is magnified in Figure 1. Although enlarged beyond its optimal resolution, the photo clearly shows that the algae are not present as a loose film, but definitely structured, arranged in small adjacent globules—indistinguishable from the thallus of many lichenomphalias, whose lichenized state is readily acknowledged by students of lichenized ascomycetes.

Microscopic examination may have been easier, using fresh globules and a dissecting microscope. Preparing slides from dried collections with unaided 76-year-old eyes was more challenging. Despite several washings, tiny silt fragments clung to algal globules, impeding a flattened preparation, requiring considerable up and down focussing to reconstruct a 3-D concept of the ultrastructure. This is attempted in Figure 2 on the next page (original magnification 400 ×), showing,

A: Visible granules are irregularly ovoid, enclosed by flat mycelial cells, visible as flat tiles on the upper surface (cyan lines), and as a thin enveloping cell layer around the perimeter (yellow lines). The content is made up of multiple individual packets of algae contained within similar enveloping cells (orange line), compartmentalized by walls of flat fungal cells. **B**: Small globule, a single packet containing compressed algae (note few visible chloroplasts). **C**: Fungal hyphae course between and through granules making intimate contact with packets and algal cells.

This is the common "*Botrydina* type" thallus structure built by basidiolichens a) to protect algae from UV light, b) to guard them from drying by sun and wind, and c) to maintain intimate contact with them by a hyphal network constantly delivering water and minerals for their survival.

Conclusions

1. Algal globules of *M. mucida* have a definite thallus: alga contained within fungal tissue. Ergo, *M. mucida* is a basidiolichen, not an "ally" or other casual bystander.

2. Score one for the democrats. No need for a wall.

3. Obviously, algae are the original farmers, keeping a stable of *M. mucida* to house, protect and nurture them, in exchange for a little bit of sugar. Sweet deal!

Photo: Roger Smith

Figure 1

I thank Robert Lücking for reviewing the manuscript.

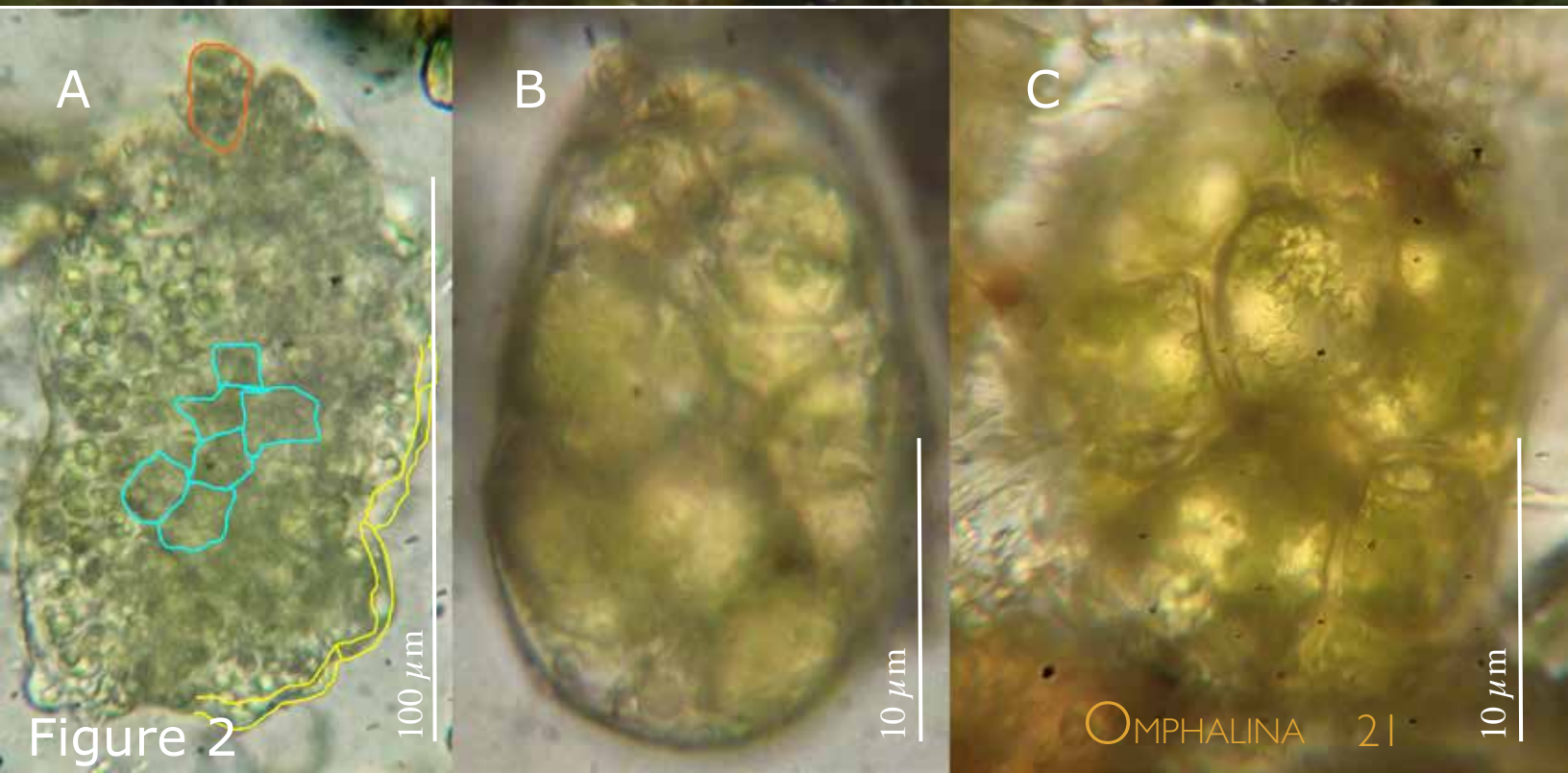

Figure 2

Andrus Voitk

OCTOSPORA HUMOSA

and other farmers of Labrador

There are mushrooms everywhere. Like for example, in collections of other mushrooms.

Driving back from Labrador, we made a brief roadside pitstop. In the gravel and sand of the Labrador ditch we found some small brown mushrooms (Figure 1, and right upper figure, p. 13) that I assumed to be *Arrhenia peltigerina* because around their base was a small *Peltigera aphthosa*. Once home, a closer look showed that he leafy greenery around their base was not the lichen *Peltigera aphthosa* (Figure 2), but the liverwort, *Blasia pusilla*. They resemble each other because both have visible dark green nodules of the cyanobacteria *Nostoc* in their leaves. Well, if the mushroom is not *Arrhenia peltigerina*, might it be *Blasiphalia pseudogrisella* (Figure 3—note the dark *Nostoc* nodules in the *Blasia* thallus), another mushroom associated with *Blasia*? Not really—our mushroom is a bit bigger, its cap is too bowl-shaped and too dark for *B. pseudogrisella*, and microscopically it did not have the required cystidia.

Challenge to anybody familiar with this mycota: what is this little brown mushroom? (See also p. 13.)

While the experts weigh in with their answers, let us continue with our story, because the point was to introduce you to the delightful *Octospora humosa* (title banner). During my closer examination of the soil, something orange among the moss caught my eye: a little orange cup fungus! Too pretty to discard, I took a quick photo (title banner) and tried to identify

Figure 1

Figure 2

it. An orange cup, a few mm in diameter, helps narrow the search, and after a while with several ascomycete books, *Octospora* seemed the best fit for genus. Microscopic appearance matched *O. humosa* best.

In an effort to learn more, I turned to the ultimate source of all knowledge: the world wide web. And do you know what?

Octospora has its own website!

Honest: <www.octospora.de>, with gorgeous photos, especially microscopic. I asked for permission to use one to show you what I saw through my microscope. In a few days, Jan Eckstein sent a beautiful photo (Figure 4): asci, spores and paraphyses of *Octospora humosa*. Thank you, Jan.

Lesson: always examine your specimens for more specimens!

What was this mushroom doing there? Some suggest it is a moss parasite, but the moss around it was as healthy as all the other moss, no sign of dying off or undue suffering. Maybe it was doing the same as the *Blasiphalia pseudogrisella* and the unidentified brown mushroom: eking a living in the inhospitable sand and gravel by some mutualistic arrangement with willing neighbours. Just like lichens, which are said to "farm" algae and cyanobacteria; just like the *Blasia*, which similarly "farms" *Nostoc*; just like the *Blasiphalia*, which is "farming" *Blasia*; just like the unknown brown mushroom, which is also "farming" some other partner, *Blasia* or moss; maybe this little cup is also "farming" its partner, a *Polytrichum*. The sandy habitat of a Labrador roadside ditch has very little organic matter of nutritious content. In such places, probably a mutualistic lifestyle offers the best chance of survival for all. Hyphae penetrating rhizomes are not necessarily a sign of parasitism. Such hyphae are mere conduits, and can just as easily exchange as only take.

In the give-and-take world of mutualism, who farms whom? The moss or the *Octospora*? The *Peltigera aphthosa*, the *Nostoc*, or the green alga? Elsewhere, does birch farm *Boletus betulicola* or the bolete farm birch?

Figure 3

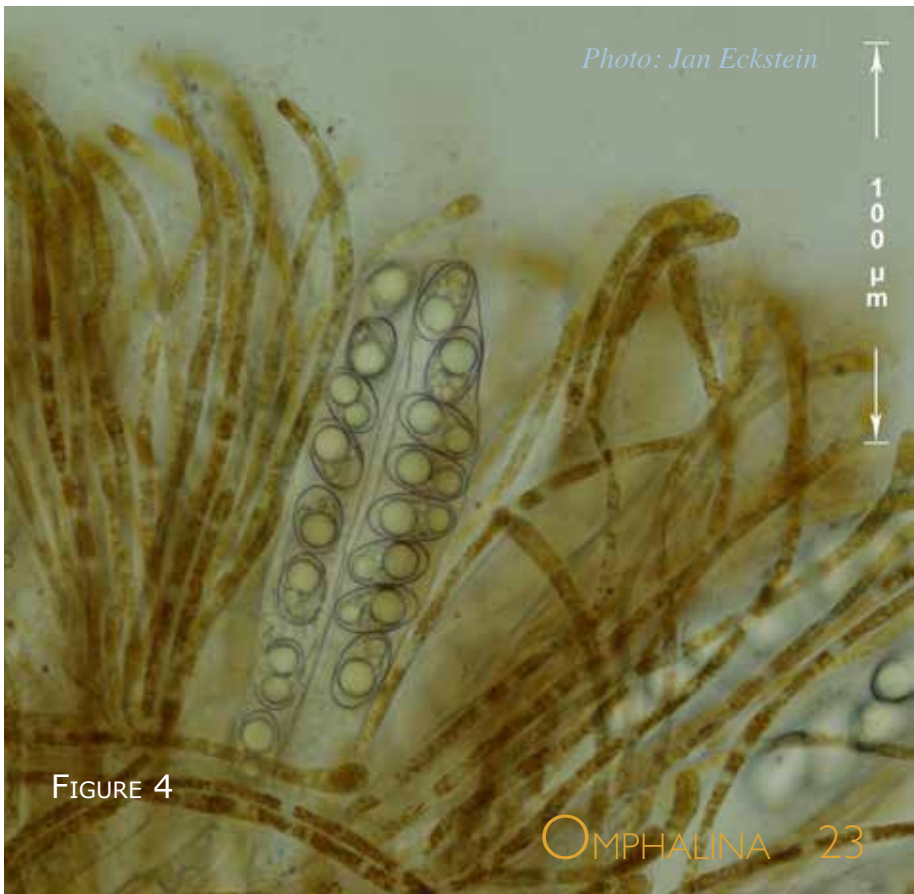

Figure 4

Atoposporina betulina

Andrus Voitk

The January, 2013, issue of Omphalina introduced you to 12 pyromycetes you could identify in the field.[1] To these we have since added another two.[2,3] The first dozen was an Atlantic effort, with the help of Dave Malloch from New Brunswick and Adrian Carter from Prince Edward Island. During the preparatory work, Adrian told me of a black spot on dwarf birch leaves, *Atopospora betulina*, which he said was another species that could be recognized by sight, without need for microscopy. It was left out only because I had not seen it and lacked its photo. Adrian had seen it on Gros Morne, where it had been recorded by Parmalee in 1988, who also reported it from *B. papyrifera* in Labrador.[4] Well, on the way to the Happy Valley-Goose Bay foray, I finally found it on the leaves of *Betula glandulosa* in the sand dunes of Forteau. Add it to your identifiable pyreno list.

The life cycle of this fungus is much like that reported for *Rhytisma andromedae*. The raised black spots you see are the new ascomycete fruiting bodies, fully grown after a warm season inside the leaf. Inside it are cavities called apothecia, inside these are asci, and inside them are spores. They could mature now, but there is no point, because the leaves they need to infect are about to fall. Therefore, instead, they fall with their leaf and overwinter, maturing as the weather warms up. The contraction and expansion caused by the freeze-thaw cycles crack the surface. Alternating dry and wet during days of spring rain also help crack the shiny surface, permitting the now mature spores a way of egress.

How they get from the leaf litter to infect new leaves—what are the vectors—is a mystery, but they do, and by the next fall another set of black spots become evident, starting the cycle anew.

As you see, simple cycle, all spores overwintering in fallen leaves. Therefore, easy to cure. Rake up the leaves fall and spring, and burn them, destroying the spores. No more infection of new leaves.

When we published the life cycle of *Rhytisma andromedae*, we also offered a small number of colourful bog rakes for raking up leaves.[5] You may want to look up that old issue, because we still have a small supply of rakes left. Unfortunately, due to unfavourable exchange rates since that time, prices have increased by 32% (plus tax), so the cost is a little more, but still worth considering, should you find *Atopospora betulina* on your favourite dwarf birch. Write and ask for our special bulk pricing, or ask for our new Bog Rake Franchise Agreement.

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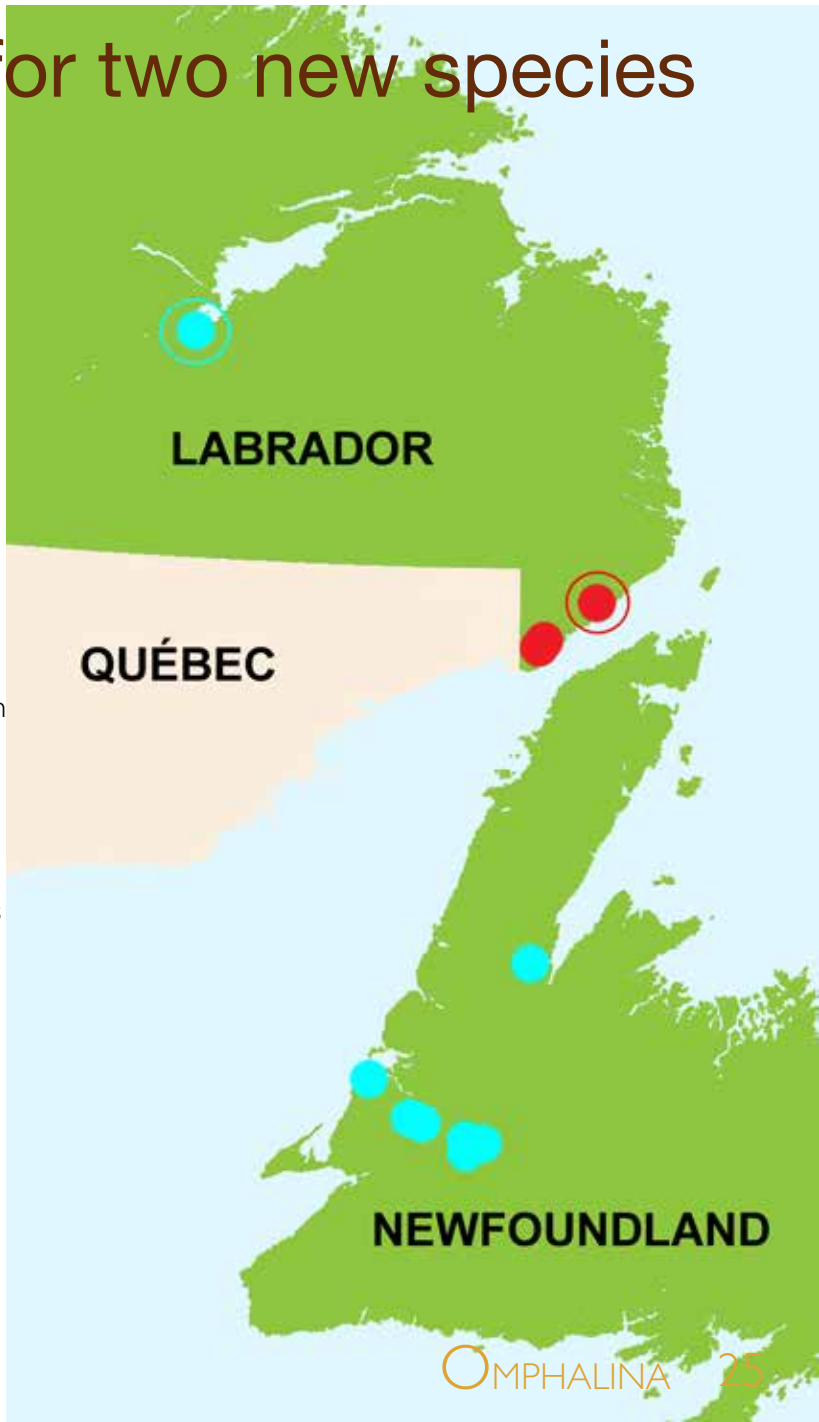
Range extension for two new species

Andrus Voitk

We collected two recently described species from Labrador, extending the known range for both. *Gymnopus eneficola* (upper left photo), described from the Island in 2014,[1] was collected in the Goose Bay area, thus extending its known range to the mainland. A much wider range is expected for this decayer of leaf litter. *Hygrocybe jacksonii* (upper right photo), described from Forteau in 2015,[2] was collected from Pinware Provincial Park, 40 km farther northeast along the Labrador Strait. Not a huge extension, but in keeping with the expectation that this species will be found in sand dunes far north along the coast.

On the map (right) known collection sites for *G. eneficola* are shown in cyan, and known collection sites for *H. jacksonii* are shown in red. The new sites from the 2016 foray are circled. Collections along the Labrador Straits were made during the road trip from the Island to Goose Bay.



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Arboreal lichens

of the Happy Valley-Goose Bay region of Labrador

Richard Troy McMullin, Yolanda F. Wiersma

INTRODUCTION

Foray Newfoundland & Labrador organizes annual forays (gatherings of people interested in mushrooms and lichens) in different localities throughout Newfoundland and Labrador. In September of 2016, the annual foray was in the Happy Valley-Goose Bay (HVGB) region of Labrador. Here we present a description of the general habitat and a diagnostic key for the arboreal lichens likely to be encountered there, to aid people in identifying the lichens of the region.

THE LABRADOR ENVIRONMENT

If you are flying in to HVGB from St. John's and have a window seat, one of the first things that strike you as you approach is the sweep and bend of the Churchill River (known as the Grand River by the people of NunatuKavut and Nunatsiavut, and as the Mishtashipu by the Innu). This 856 km-long river has its headwaters at the Smallwood Reservoir and empties into Lake Melville and thence into the Atlantic Ocean. The river drains an area of 79,800 km^2, and carries silt, which has been deposited over the years on the floodplain on which Happy Valley-Goose Bay sits. As you take your first walk along any trail within the town, you will be struck by the sandy soil, carpeted with lichens, particularly those in genus *Cladonia*.

The area around Goose Bay lies in the High Boreal Forest (Lake Melville) Ecoregion, one of 12 ecoregions that make up the "Big Land" (the island part of the province has 9 ecoregions). The High Boreal Forest is dominated by black spruce (*Picea mariana*). The forests around HVGB are generally more extensive and productive than other parts of the boreal (including mainland boreal forests). Although this is a fire-driven system, there are a few more post-burn gaps and patches than in the neighbouring forest ecoregions. As well, the fire return interval is thought to be longer (perhaps even 300-500 years) than in other parts of the continental boreal forest, likely due to the slightly more maritime climate. In addition to *P. marina*, other trees include white birch (*Betula papyrifera*), which occurs mostly on moist valley slopes and river terraces, and balsam fir (*Abies balsamea*).

The landscape around HVGB is also heavily influenced by glaciation. Ribbed fens and upland terraces are the legacy of the massive ice sheets and create interesting pockets of habitat, including plateau bogs and extensive peatlands, which will likely harbour some unique lichens.

LABRADOR LICHENS

We selected the lichens in the dichotomous key below because they were either found during the 2016 foray or because they are expected to be encountered in the region. Our selection of species that were not encountered were based on: digitized collection records from 82 herbaria (Consortium of North American Lichen Herbaria 2016), published records from Newfoundland and Labrador (Ahti 1983, Thomson 1983, 1997, McCarthy *et al*. 2015, McMullin and Wiersma *in review*), studies in other parts of the boreal forest in eastern North America (Brodo *et al*. 2001, Brodo and Craig no date, Walker 2007, McMullin *et al*. 2013), and personal experience of the authors.

KEY TO SELECTED ARBOREAL LICHENS EXPECTED TO BE IN THE HAPPY VALLEY-GOOSE BAY REGION

- Selected species comprise a small amount of the arboreal lichen richness in HVGB.
- Descriptions are based on dry specimens, particularly the colour of the thallus, which often changes when wet.
- Uncommon terminology is defined in the glossary at the end.

1a. Thallus foliose **2**
1b. Thallus crustose or fruticose **23**

2a. Thallus yellow or orange **3**
2b. Thallus brown or shades of grey-green, not distinctly orange or yellow **4**
3a. Thallus yellow, KOH-; soredia marginal; apothecia absent; typically on shrubs or the base of conifers.. ..... ***Vulpicida pinastri*** **(Fig. 1A)**
3b. Thallus orange, KOH+ dark purple (anthroquinones); soredia absent, apothecia present; typically on deciduous trees ..... ***Xanthoria hasseana*** **(Fig. 1B)**

4a. Lobes hollow **5**
4b. Lobes solid **6**

5a. Soredia on the lower surface of upturned lobe tips ..... ***Hypogymnia physodes*** **(Fig.1C)**
5b. Soredia on the upper surface of lobe tips ..... ***Hypogymnia tubulosa*** **(Fig. 1D)**

6a. Thallus shades of brown **7**
6b. Thallus shades of grey, green-grey or yellow-green (usnic acid) **12**

7a. Thallus ascending from the substrate; lobe margins ruffled, with pycnidia (cylindrical spike-like projections), cilia present or absent; medulla C- **8**
7b. Thallus usually appressed to the substrate; lobe margins typically flat; cilia absent **9**

8a. Medulla UV+ blue-white (alectoronic acid) ..... ***Tuckermanopsis americana*** **(Fig. 1E)**
8b. Medulla UV- ..... ***Tuckermanopsis orbata*** **(Fig. 1F)**

9a. Sorediate; apothecia absent; soredia often rubbing off leaving abraded areas; isidia occasional, granular to minutely cylindrical; medulla C+ red (lecanoric acid) ***Melanelixia subaurifera*** **(Fig. 2A)**
9b. Soredia absent; isidia present or absent; medulla C- **10**

10a. Isidia present, hollow, lobulate; apothecia rare; medulla PD- ..... ***Melanohalea exasperatula***
10b. Isidia absent; apothecia common; medulla PD+ red (fumarprotocetraric acid) **11**

11a. Pseudocyphellae (white spots) laminal; apothecial disks strongly concave ..... ***Melanohalea olivacea***
11b. Pseudocyphellae absent; apothecial disks typically flat ..... ***Melanohalea septentrionalis*** **(Fig. 2B)**

12a. Thallus yellow-green (with usnic acid) **13**
12b. Thallus shades of grey or green-grey (usnic acid absent) **15**

13a. Thallus <20 cm wide; lobes <8 mm wide; lower surface black; medulla P + red, UV- (protocetraric acid).....***Flavoparmelia caperata*** **(Fig. 2C)**
13b. Thallus <8 cm wide; lobes <1 mm wide; lower surface light brown to black; medulla P -, UV+ white (divaricatic acid).....**14**

14a. Soredia mostly on upturned lobe tips; lower surface not darkening towards the centre.....
.....***Parmeliopsis capitata*** **(Fig. 2D)**
14b. Soredia mostly laminal; lobes flat or not upturned; lower surface becoming dark brown or black towards the centre.....***Parmeliopsis ambigua*** **(Fig. 2E)**

15a. Cilia present; soredia in helmet-shaped lobe tips.....***Physcia adscendens*** **(Fig. 2D)**
15b. Cilia absent; soredia present or absent, never in helmet-shaped lobe tips.....**16**

16a. Isidia present **17**
16b. Isidia absent; soredia present or absent.....**19**

17a. Isidia marginal; lobes ascending, ruffled.....***Platismatia glauca***
17b. Isidia laminal and marginal; lobes closely appressed to the substrate.....**18**

18a. Upper cortex PD+ orange (thamnolic acid); lower cortex pale; rhizines simple.....
.....***Imshaugia aleurites*** **(Fig. 3A)**
18b. Upper cortex PD-; lower cortex black; rhizines squarrose.....***Parmelia squarrosa*** **(Fig. 3B)**

19a. Soredia absent.....**20**
19b. Soredia present, marginal and laminal.....**21**

20a. Lobes ascending, ruffled; lower cortex dark.....***Platismatia glauca***
20b. Lobes closely appressed to the substrate; lower cortex pale.....***Physcia aipolia*** **(Fig. 3C)**

21a. Lobes ascending, ruffled; soredia marginal.....***Platismatia glauca*** **(Fig. 3D)**
21b. Lobes closely appressed to the substrate; soredia laminal and marginal.....,.....**22**

22a. Medulla UV-, KOH+ yellow to red, PD+ orange (salazinic acid); rhizines squarrose.....
.....***Parmelia sulcata*** **(Fig. 3E)**
22b. Medulla UV+ white, KOH-, PD- (divaricatic acid); rhizines simple.....
.....***Parmeliopsis hyperopta*** **(Fig. 3F)**

23a. Thallus fruticose.....**24**
23b. Thallus crustose.....**34**

24a. Thallus shades of grey or pale to dark brown.....**25**
24b. Thallus shades if bright green-yellow (usnic acid).....**29**

25a. Thallus grey to pale brown, PD+ yellow, KOH+ yellow (barbatolic acid).....**26**
25b. Thallus brown to dark brown PD+ red, KOH- (fumarprotocetraric acid).....**27**

26a. Soredia present .....***Bryoria nadvornikiana*** **(Fig. 4A,B)**
26b. Soredia absent.....***Bryoria pikei***

27a. Soredia absent.....***Bryoria trichodes* ssp. *trichodes* (Fig. 4C)**
27b. Soredia present.....**28**

28a. Isidia present, spike-like, in soralia.....***Bryoria furcellata* (Fig. 4D)**
28b. Isidia absent.....***Bryoria fuscescens* (Fig. 5A)**

29a. Branches with a central cord.....**30**
29b. Branches without a central cord.....**31**
.
30a. Fibrils, isidia, papillae, and soredia absent.....***Usnea cavernosa* (Fig. 5B)**
30b. Branches with one or more of the following: fibrils, papillae, soredia, and isidia. ***Usnea* spp. (Fig. 5C)**

31a. Branches hollow and perforated.....**32**
31b. Branches solid and not perforated.....**33**

32a. Soredia present; apothecia rare.....***Ramalina roesleri* (Fig. 5D)**
32b. Soredia absent; apothecia common.....***Ramalina dilacerata***

33a. Soredia absent; apothecia common.....***Ramalina americana***
33b. Soredia present; apothecia rare.....***Evernia mesomorpha* (Fig. 5E)**

34a. Apothecia stalked, pin-like, <3 mm tall.....**Calicioid spp. (stubble lichens) (Fig. 5F)**
34b. Apothecia not stalked or pin-like, present or absent.....**35**

35a. Apothecia absent; soredia present; thallus C+ red (gyrophoric acid).....***Ochrolechia arborea***
35b. Apothecia present; soredia absent; thallus C-.....**36**

36a. Apothecial disk orange, KOH+ dark purple (anthroquinones).....**37**
36b. Apothecia disk variously coloured, not orange, KOH-.....**38**

37a. Apothecial margins grey; thallus grey.....***Caloplaca cerina* (Fig. 6A)**
37b. Apothecial margins mostly orange; thallus inconspicuous.....***Athallia pyracea***

38a. Apothecial disk yellow; thallus yellow-green (usnic acid).....***Lecanora symmicta* (Fig. 6B)**

38b. Apothecia disk variously coloured, not orange, KOH-.....**39**

39a. Apothecial disk black, convex; apothecial margins black.....**40**
39b. Apothecial disk red-brown to black, flat; apothecial margins the same colour as the thallus, not black.....**41**

40a. Hymenium with birefringent crystals in polarized light.....***Mycoblastus sanguinarioides* (Fig. 6C)**
40b. Hymenium without birefringent crystals in polarized light.....***Mycoblastus sanguinarius***

41a. Apothecial margins PD+ red.....***Lecanora pulicaris***
41b. Apothecial margins PD-.....***Lecanora subfusca* group (Fig. 6D)**

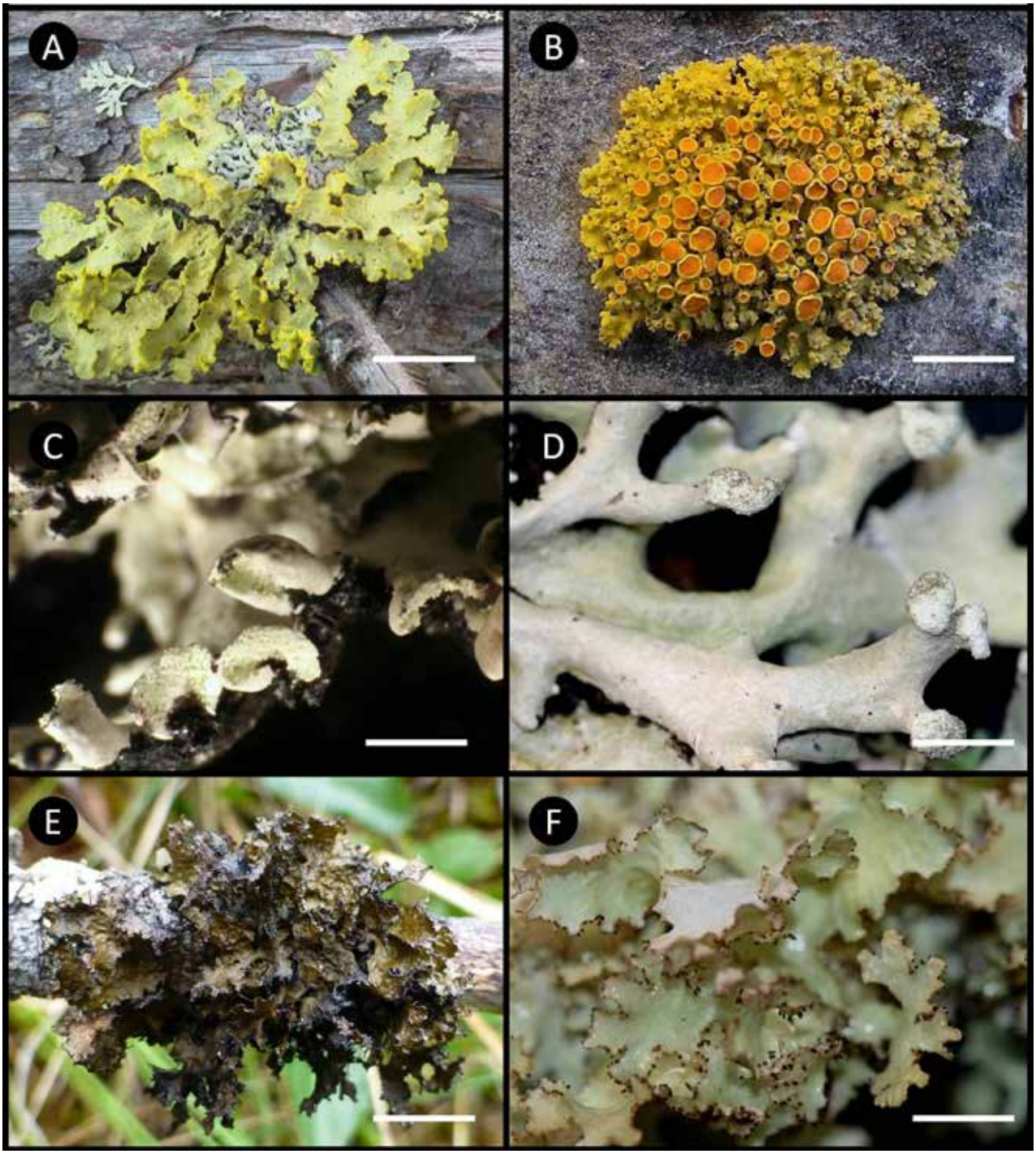

Figure 1. A) *Vulpicida pinastri*, scale = 7 mm. **B)** *Xanthoria hasseana*, scale = 4 mm. **C)** *Hypogymnia physodes*, scale = 2 mm. **D)** *Hypogymnia tubulosa*, scale = 2.5 mm. **E)** *Tuckermanopsis americana*, scale = 7 mm. **F)** *Tuckermanopsis orbata*, scale = 3.5 mm.

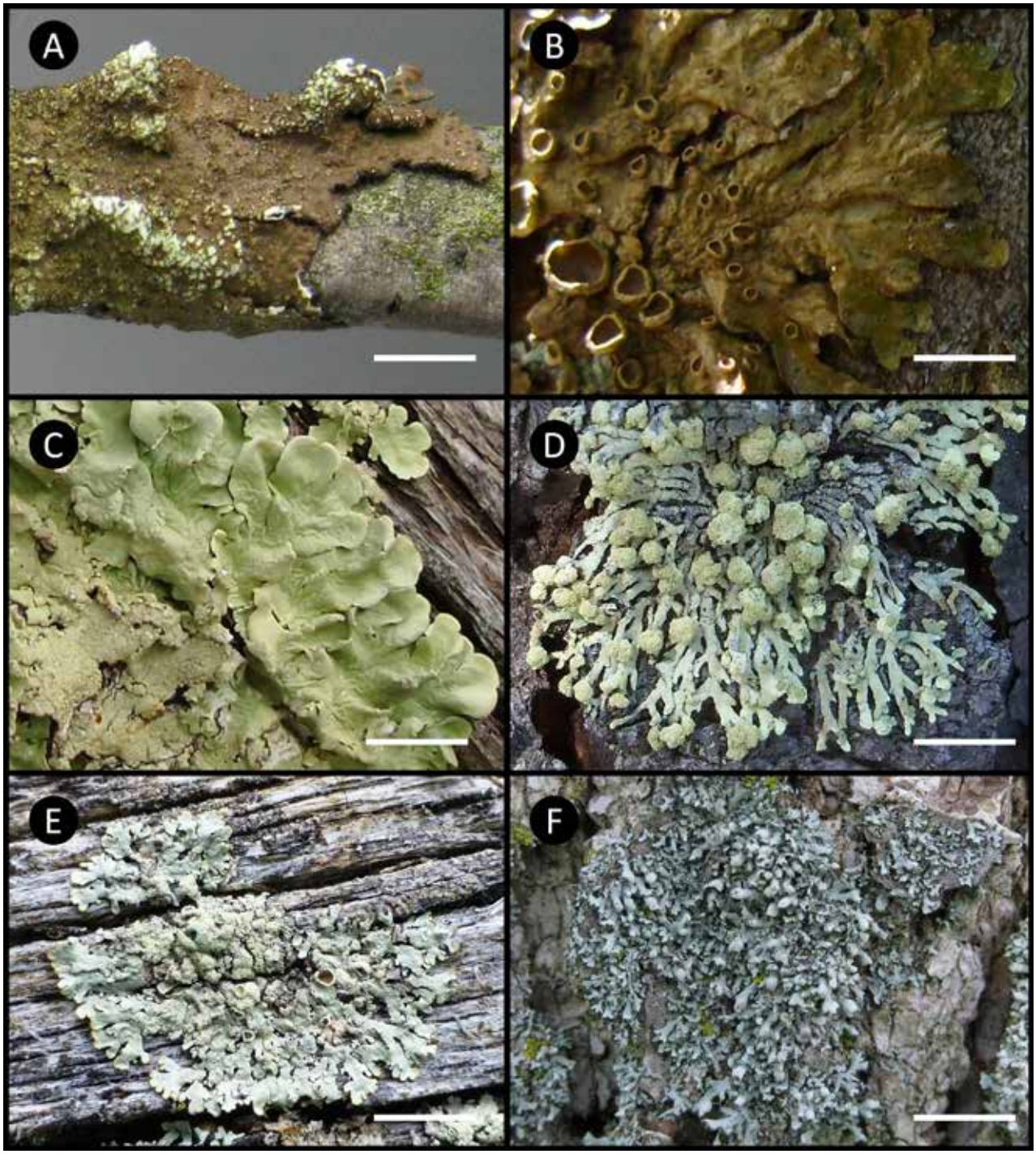

Figure 2. A) *Melanelixia subaurifera*, scale = 2 mm. **B)** *Melanohalea septentrionalis*, scale = 1.5 mm. **C)** *Flavoparmelia caperata*, scale = 7 mm. **D)** *Parmeliopsis capitata*, scale = 3.5 mm. **E)** *Parmeliopsis ambigua*, scale = 4 mm. **F)** *Physcia adscendens*, scale = 4.5 mm.

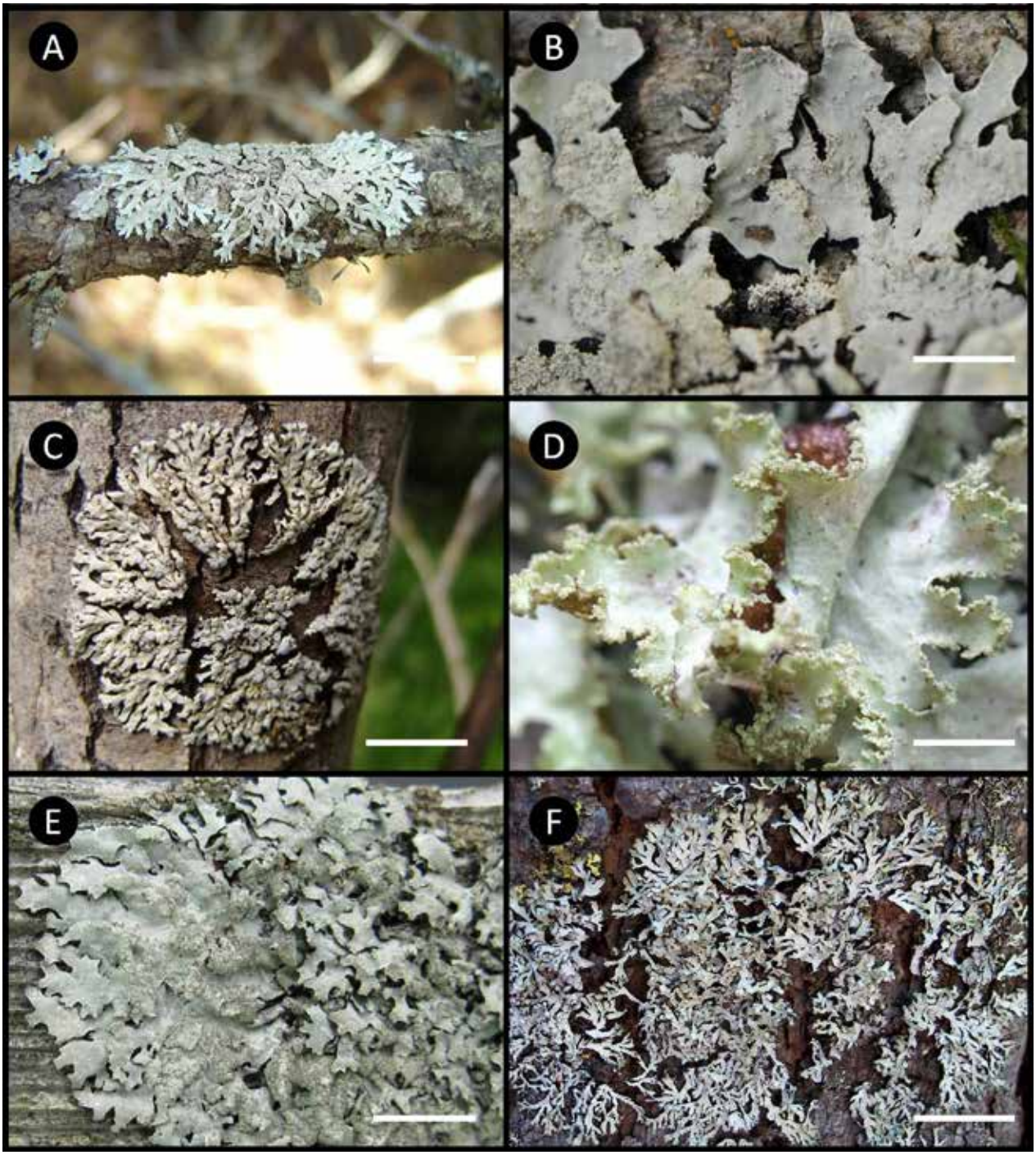

Figure 3. A) *Imshaugia aleurites*, scale = 5.5 mm. **B)** *Parmelia squarrosa*, scale = 7.5 mm. **C)** *Physcia aipolia*, scale = 6 mm. **D)** *Platismatia glauca*, scale = 9 mm. **E)** *Parmelia sulcata*, scale = 5.5 mm. **F)** *Parmeliopsis hyperopta*, scale = 9.5 mm.

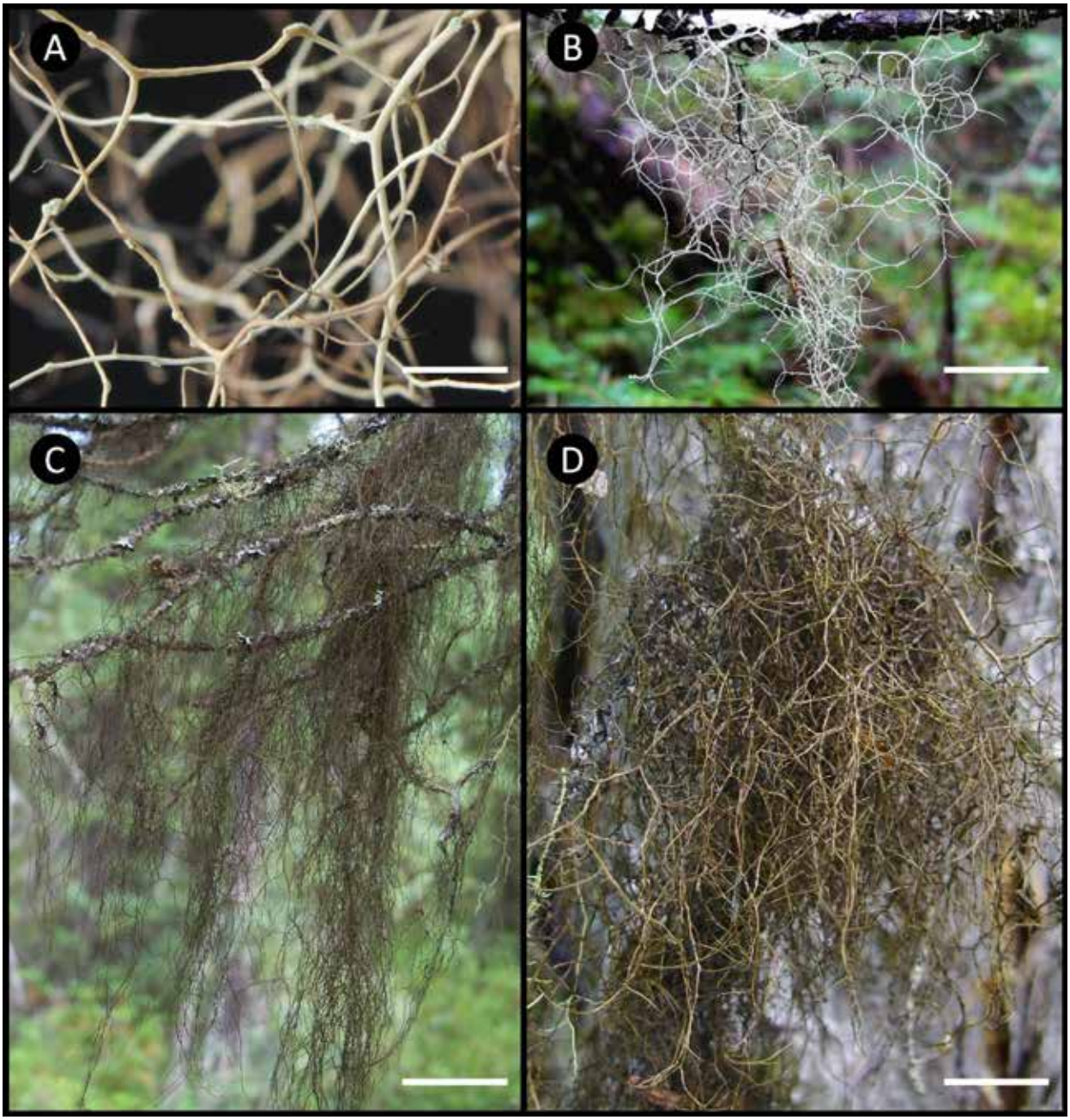

Figure 4. A) *Bryoria nadvornikiana*, scale = 2.5 mm. B) *Bryoria nadvornikiana*, scale = 7 mm. C) *Bryoria trichodes* ssp. *trichodes*, scale = 9 mm. D) *Bryoria furcellata*, scale = 6 mm.

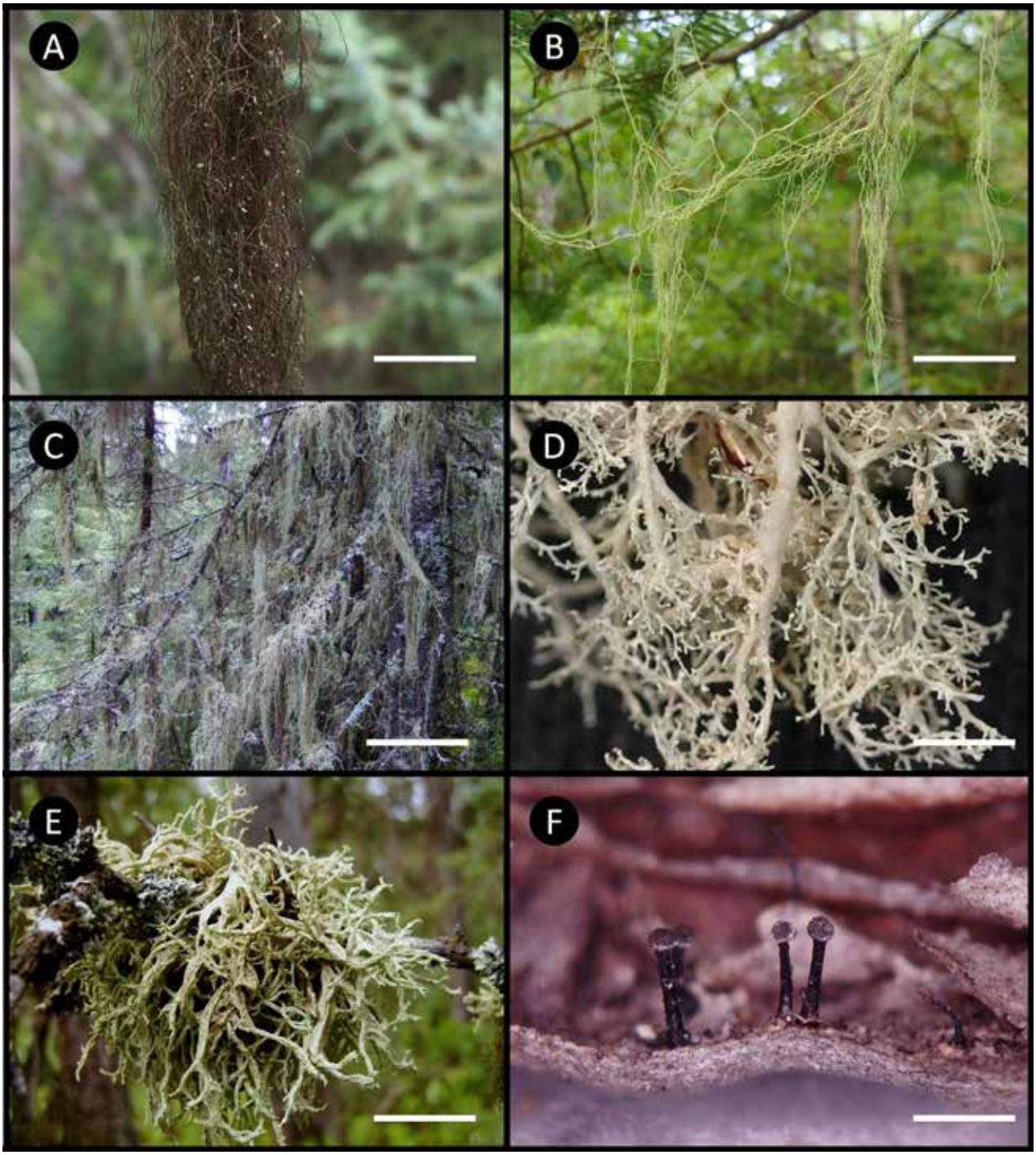

Figure 5. A) *Bryoria fuscescens*, scale = 6.5 mm. **B)** *Usnea cavernosa*, scale = 7.5 mm. **C)** *Usnea* spp., scale = ~30 cm. **D)** *Ramalina roesleri*, scale = 1.5 mm. **E)** *Evernia mesomorpha*, scale = 10 mm. **F)** *Calicium parvum*, scale = 0.9 mm.

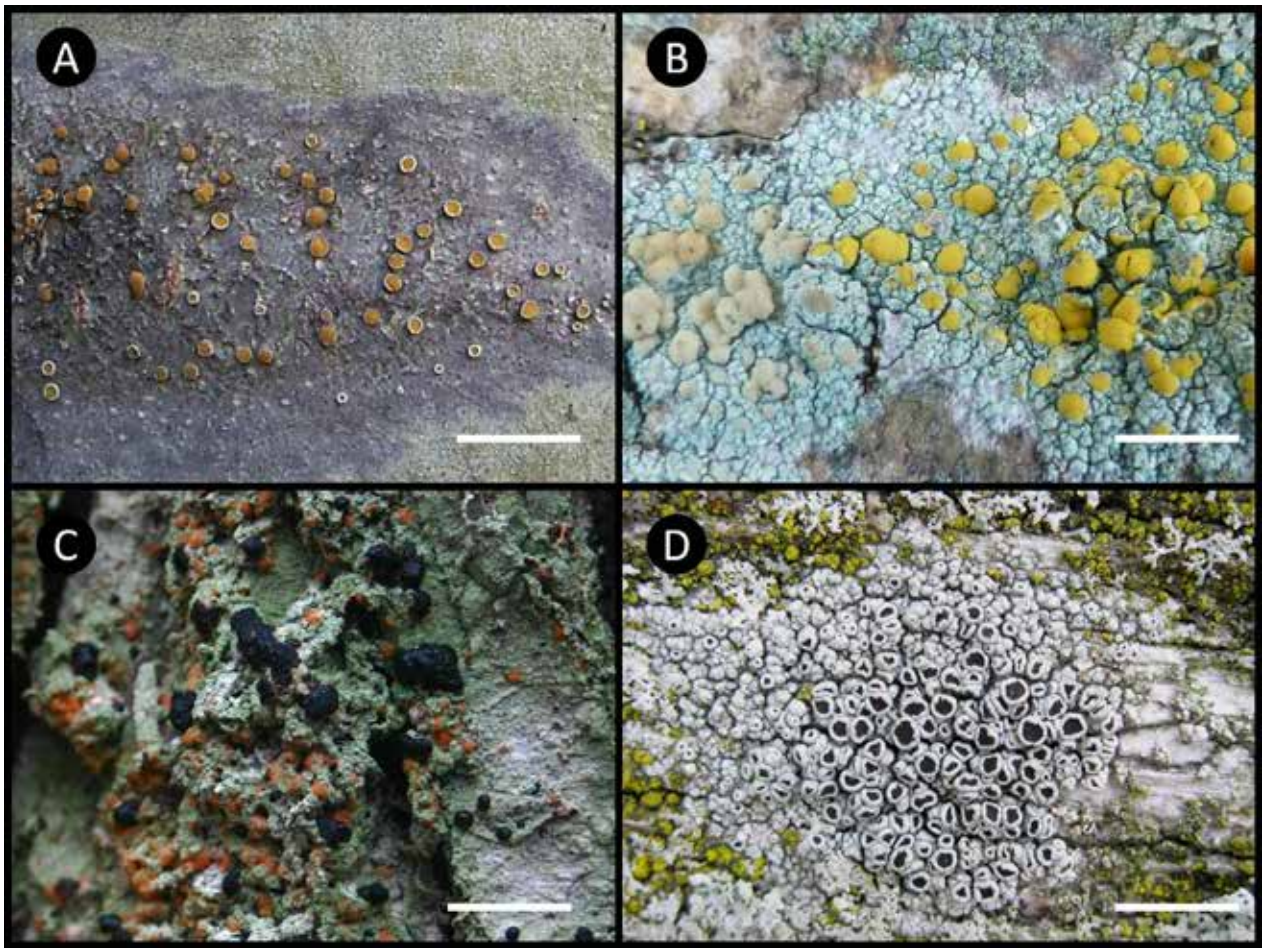

Figure 6. A) *Caloplaca cerina*, scale = 8 mm. **B)** *Lecanora symmicta,* scale = 5.5 mm. **C)** *Mycoblastus sanguinarioides* with orange *Trentepohlia* growing on the thallus, scale = 1.9 mm. **D)** *Lecanora hybocarpa,* scale = 7 cm.

GLOSSARY

Apothecium (pl. **apothecia):** Reproductive structures where fungal spores are produced.

Appressed: Pressed closely against.

C: A reagent of commercial bleach without additives, or sodium hypochlorite used in spot tests.

Central cord: The strong, cartilaginous thread forming the core of *Usnea* branches.

Cilium (pl. **cilia):** A slender hair-like outgrowth of the margin of the thallus or apothecium.

Cortex (pl. **cortices):** The protective outermost layer of the thallus; composed of densely packed fungal hyphae.

Crustose: A crust-like lichen growth form which tightly adheres to its substrate over its entire lower surface. Lacks a lower cortex and rhizines.

Fibril: A short branch growing perpendicular to the main branch.

Foliose: A leaf-like lichen growth form, which typically has a distinct upper and lower surface.

Fruticose: A branch-like or bushy lichen growth form, typically without a distinct upper and lower surface.

Hymenium: The spore producing region of the fruiting body which consists of the asci or basidia, spores and paraphyses, pseudoparaphyses, or paraphysoids.

Isidiate: Having isidia.

Isidium (pl. **isidia):** A cylindrical or globular vegetative propagule composed of both the photobiont and mycobiont packaged within a cortex. Attached to the thallus surface or the margins of apothecia.

KOH: A spot test reagent of 10% potassium hydroxide. Sodium hydroxide can serve as a substitute.

Laminal: On the upper surface of the thallus, does not include the area near the margins.

Lobulate: Resembling or bearing lobules.

Medulla: A loose layer of interwoven fungal hyphae in the interior of the thallus, beneath the cortex and photosynthetic layers. Most often white, rarely orange or yellow.

Papilla (pl. **papillae):** A small, wart-like bump found on the cortex of some lichens.

PD: A spot test reagent of *para*-phenylenediamine. Typically prepared with 70% ethyl alcohol.

Pseudocyphella (pl. **pseudocyphellae):** A break in the cortex through which medullary hyphae come to the surface and appear as pale spots or lines. Unlike cyphellae, not lined with special cells.

Rhizine: A root-like multicellular hypha growing from the bottom of the thallus to anchor the lichen to its substrate. Rhizines of different species can vary in their length, width, and degree of branching.

Ruffled: Wavy or undulating in form.

Soralium (pl. **soralia):** A crack or opening in the cortex where soredia are produced.Can take many forms.

Sorediate: Having soredia.

Squarrose: Of the thallus, having a scaly, rough surface. Of rhizines, having many short branches at right angles to the central axis.

Thallus (pl. **thalli):** The vegetative body of a lichen formed by a combination of algal and fungal cells.

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Program

Note: All meals at the Christian Youth Camp (across the road from the Birch Brook Ski Lodge). All field trips will leave from the Birch Brook Nordic Ski Lodge.

Friday, September 9

4:00 Sign-in desk opens at Birch Brook Lodge.
6:00 The Minister's Reception, followed by supper
7:30 *Words From the President*
8:00 Simultaneous Talks:
- *Mushrooms 101*, Renée Lebeuf.

And
- *Lost and Found in the Doyle's Delight Cloud Forest, Belize,* Jean Lodge.
- *Chanterelles Revisited*, Greg Thorn

Saturday, September 10

8:00 Breakfast and announcements
9:00 Foray teams leave for various trails.
12:00 Lunch on the trail.
1:00 Identifiers and databasers return to start identification and processing.
3:00 Foray teams return to sort, label, and identify specimens.
6:00 *Quidi Vidi QuuQup* (wild mushrooms and supper).
7:30 Short Talks:
- *Relationships among lichens, caribou, and forest structure in the boreal forest*, Troy McMullin
- *Mushrooms in Art*, Glynn Bishop

Sunday, September 11

8:00 Breakfast.

8:45 Group photograph. Please be there by 8:45 or you may not be in the photograph!

9:00 Specimen Tables and Workshops:

<table>
<tr><td>9:00 to 10:00</td><td>Tables with Greg</td><td rowspan="2">Watercolour with Glynn Bishop (max. 10)</td><td rowspan="2">Cooking Wild Mushrooms with Lidija Chubbs (max. 12)</td><td rowspan="2">Using an identification key with Andrus (max. 12)</td></tr>
<tr><td>10:00 to 11:00</td><td>Tables with Jean</td></tr>
<tr><td>11:00 to 12:00</td><td>Tables with Renée</td><td rowspan="2">Carving Mushrooms with Estelle (max 10)</td><td rowspan="2">Pick for the Pot with Judy (max. 12)</td><td rowspan="2">Lichen Walk with Troy McMullin (max. 14)</td></tr>
<tr><td>12:00 to 1:00</td><td>Tables with Roz</td></tr>
</table>

Sign up sheets will be posted for workshops, please make sure that you add your name during registration.

1:00 Lunch.

2:00 President's thanks.

2:15 ***Annual General Meeting***. All members are encouraged to attend.

3:00 Foray 2016 concludes.

Foray Fotos

Photos by : Andrus Voitk, Maria Voitk, Roger Smith, Michael Burzynski, Helen Spencer.


AM-3425


PORAGE
STORE

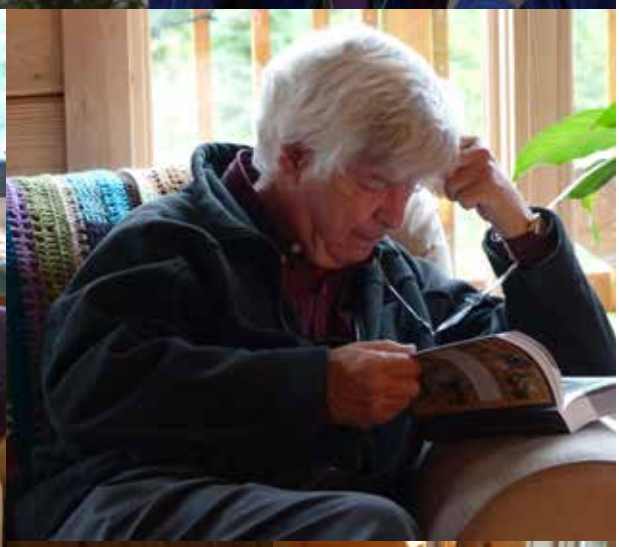







Kitchen





CANADA POSTES
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Mud Lake
CANADA POSTES
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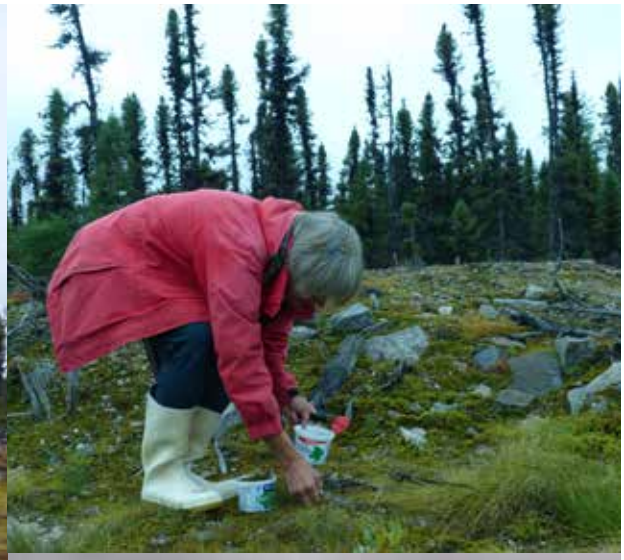


Workshops

Sunday morning was devoted to workshops, both indoors and out: Pick for the pot, Lichen walk, Watercolour sketching, Cooking Wild Mushrooms, Using an Identification Key and, of course, Tables sessions. To get a flavour of what they were about, here are some "Reports" by some of the leaders and participants.

Mushroom Carving Workshop

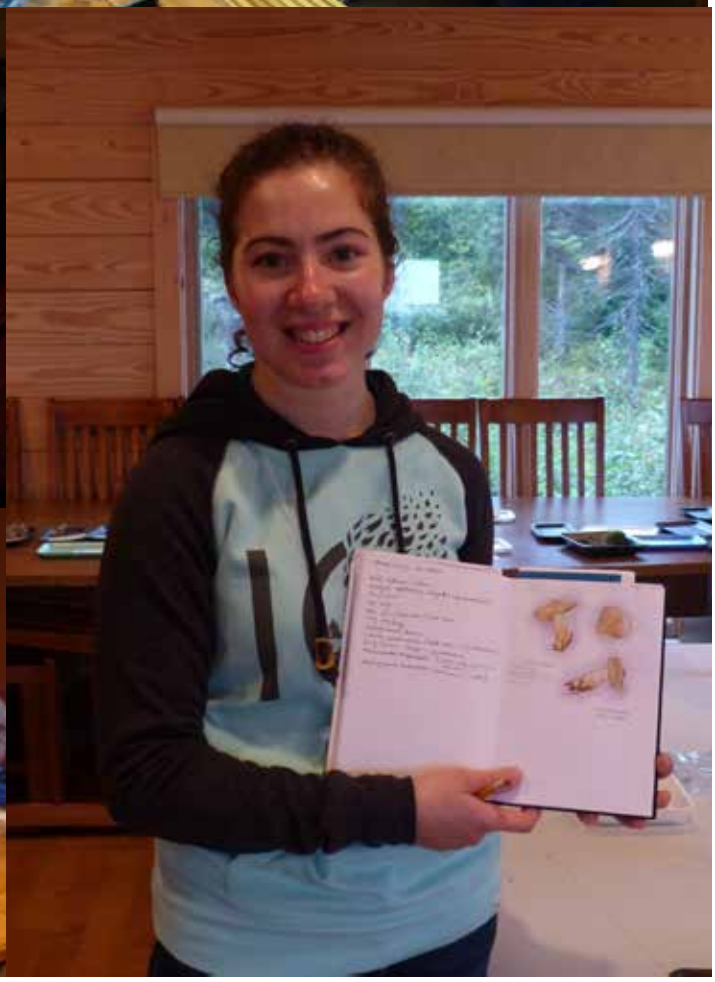
by Helen Spencer

When local artist and fungal fan Estelle Michelin offered to conduct a carving mushroom workshop for the Foray, I envisioned us making crafty mushrooms out of wood. WRONG! Estelle has developed a technique for carving woody conks into artistic pieces. As you probably know, they form brackets on trees which can grow seasonally for several years. It turns out that each year a new layer is formed on the fungus. As you carve it the layers are revealed and, if you are skilled like Estelle, you can use the different layers to form a three-dimensional piece of

art. Estelle collects *Fomitopsis pinicola*, which come in many shapes and sizes and so before she carves them she gives them time to speak to her about what they would like to become (these are my words, not hers!) and then carves them into that shape — see her blueberry patch. Those of us at her workshop chose a specimen and looked at it long enough hoping it would tell us what it could be. Inevitably, for beginners, some had more success than others. I tried carving a Labrador spruce forest scene which was way too ambitious, but others, who attempted less complicated images had more success. The photos show their satisfaction with the activity.

Watercolour Workshop
by Glynn Bishop

This year the watercolour workshop was located in the basement of the Nordic Ski Lodge which had ground level windows for a great view outside. Participants learned to look closely at the mushroom that they were about to draw, and observe how it was different from others. Noticing colour, texture, shape, and size are all relevant for both identification and sketching–the purpose for which this workshop is intended. In addition to seeing mushrooms in this new way, the 10 participants learned valuable tips for outdoor watercolour sketching.



Mushroom Cooking Workshop
by Helen Spencer

Lidija Chubbs demonstrated her cooking expertise to an enthusiastic group of edible mushroom fans. She brought with her an impressive array of fresh vegetables from her own garden as well as a pile of huge perfect chanterelles the likes of which I've never see on the Avalon Peninsula. We were soon chopping and frying and within an hour or so had created several delicious dishes.

Using an Identifiction Key

Andrus Voitk

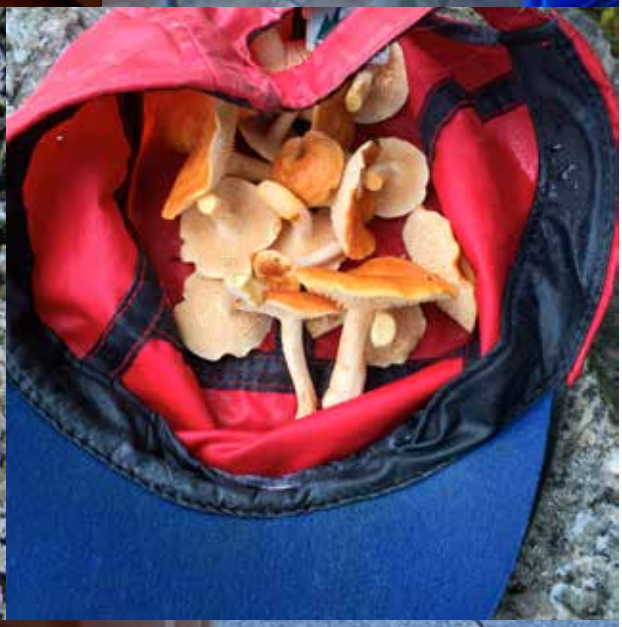


Table sessions
Roz Lowen, Greg Thorn, Jean Lodge

Trails

	Birch Island Trail	Base Loppet Trail	Base Bunkers	Sunday Hill Park and Tranquility Trail	Rabbit Run	Robin's Route
Terrain	Birch and spruce forest on river floodplain	Spruce forest, wetlands, regenerating burn	Grassy mounds over old bunkers, spruce-birch scrub	Community trail, lawns, forest, lakeshore	Black spruce – fir- birch-cherry-aspen-jack pine forest	Black spruce and mixed forest, scrubby growth on a 1985 regenerating burn
Difficulty	Flat, easy	Flat, easy	Flat, easy	Flat, easy	Flat, medium	Flat, medium
Points of Interest	River bank, steadies	Bog, unburned and burned areas	Sandy soil	Mix of human-altered and natural areas	Edge between burned and unburned, woodchips,	Edge between burned and unburned
Length*	3 km	2 km	2 km	1 - 2 km	2 km	2 km
Start	Hamilton Rd.> Pumphouse Rd.> turnaround, walk along Birch Island Road	Hwy 520> Minipi Outfitters>Ottawa Rd> west 2 km to burn	Hamilton River Rd> Loring Dr> Pease Dr	North West River	Birch Brook Nordic Ski lodge	Birch Brook Nordic Ski lodge

SPECIES LIST

NON-LICHENIZED FUNGI, BASIDIOLICHENS AND MYXOMYCETES FOUND AT THE 2016 FORAY

Andrus Voitk, Michael Burzynski, Chris Deduke, Tony Wright, Faculty, DBT and others

This Report deals with "mushrooms", including slime molds and lichenized basidiomycetes. Lichenized ascomycetes will be presented in a separate report (see p. 68).

Code for the Table

HV = Happy Valley (Trails/sites: Birch Island, Cemetary, Other)

ML = Mud Lake

GB = Goose Bay (Trails/sites: Base, Bunkers, Burn, Loppets, Spring Gulch)

NWR = Northwest River (Labrador Interpretation Centre, Motel North, Sunday Hill trail, Tranquility tral, Other)

BB = Birch Brook Nordic Ski Lodge (Trails/sites: Birch Brook trail, Rabbit's trail, Robin's Run trail, area around lodge, Christian Youth Camp, Other)

TLH = Trans-Labrador Highway (East—Old growth forest, West—aspen stand; more remote places under Misc.)

LS = Labrador Straits (PIN = Pinware Provincial Park, TRA = Tracy's Hill, Red Bay, FOR = Forteau sand dunes). Segments reported separately for the benefit of our Partners in the Department of Environment and Conservation, who have an interest in the mycota of Pinware River Provincial Park. Only a brief survey was done over two hours by four people in transit to HVGB.

New species appear in dark blue on a light blue background. Common species (a mathematical calculation of species whose number of collections exceeded the average number of collections per species by more than two standard deviations) appear in white on black background.

Notes:

1. Not all trails were surveyed in similar fashion, by the same number of people, or for an equal time. Therefore, differences in "productivity" may be a factor of sampling, making comparison of trails by numbers of species unreliable.

2. The "true" list is at least 25–50 species longer. Over 50 collections are with faculty or other specialists, awaiting definitive identification. In addition, despite iron bars and armed guards, some collections escaped back to the wilds. Some of us remember seeing them, but there is no record. A few have been captured on Roger's surveillance cameras, but the database entry corresponding to the now orphaned photo is missing.

DISTRIBUTION BY FORAY TRAIL

SpeciesName\Trail	TOT	HV	ML	GB	NWR	BB	TLH	LS	PIN	TRA	FOR	misc
Number of spp	315	66	95	65	107	123	98	20	11	4	5	13
Agaricus silvaticus	1	1										
Aleuria aurantia	3		1		1		1					
Aleurodiscus amorphus	1		1									
Alpova cinnamomeus	4					3		1			1	
Amanita fulva	2		1					1	1			
Amanita groenlandica	1							1		1		
Amanita muscaria var. *guessowii*	2		1			1						
Amanita porphyria	3				1	2						
Amanita wellsii	4		1	3								
Ampulloclitocybe clavipes	1				1							
Antrodia heteromorpha	1				1							
Armillaria ostoyae	1			1								
Arrhenia acerosa	1					1						
Arrhenia auriscalpium	1	1										
Arrhenia fusconigra	1			1								
Arrhenia obscurata	4	1						2	2			1
Arrhenia peltigerina	2	1		1								
Ascocoryne cylichnium	1					1						
Ascocoryne sarcoides	1						1					
Atheniella adonis	2					2						
Atopospora betulina	1							1			1	
Auricularia americana	6		3			1	2					
Bisporella citrina	5				1	1	3					
Bjerkandera adusta	1						1					
Blasiphalia pseudogrisella	3				2	1						
Bogbodia uda	3					1	2					
Boletus edulis	1		1									
Boletus subtomentosus f. *gracilis*	4	1	2			1						
Bovista pila	3			2	1							
Bovista plumbea	2	1	1									
Calocera cornea	4	1	1				2					
Cantharellula umbonata	7		2	1	2	1						1
Cantharellus sp. “NL”	1			1								
Cerrena unicolor	7		1	1	2	2	1					
Chalciporus piperatus	6	2	1		1	2						
Chlorociboria aeruginascens	2					1	1					
Chlorociboria aeruginosa	1		1									
Chondrostereum purpureum	1				1							

SpeciesName\Trail	TOT	HV	ML	GB	NWR	BB	TLH	LS	PIN	TRA	FOR	misc
Chrysomyxa ledicola	1				1							
Clavaria argillacea	2					2						
Clavariadelphus pistillaris	1	1										
Clavariadelphus sachalinensis	1	1										
Claviceps purpurea	1			1								
Clavulina coralloides	2		1		1							
Climacocystis borealis	4					4						
Clitocybe dealbata	1		1									
Clitocybe phyllophila	1					1						
Clitopilus prunulus	1					1						
Collybia cirrhata	5				2	1	2					
Collybia tuberosa	8				3	1	4					
Coltricia perennis	9	1	1	3		3	1					
Coniophora olivacea	1			1								
Coprinus comatus	1			1								
Cortinarius alboviolaceus	1					1						
Cortinarius angelesianus	1					1						
Cortinarius armillatus	2				1		1					
Cortinarius bibulus	1				1							
Cortinarius brunneus	4				1	1	1	1	1			
Cortinarius caesiobrunneus	1				1							
Cortinarius camphoratus	3			1		1		1	1			
Cortinarius caperatus	5	1				3	1					
Cortinarius claricolor	1				1							
Cortinarius collinitus	3				1	1	1					
Cortinarius evernius	2					1	1					
Cortinarius flexipes	2					2						
Cortinarius gentilis	6			1	2	2	1					
Cortinarius glandicolor	1				1							
Cortinarius huronensis	5		2	2	1							
Cortinarius incognitus	1						1					
Cortinarius limonius	2				1	1						
Cortinarius malicorius	1			1								
Cortinarius purpurascens	2		1			1						
Cortinarius scaurus	1				1							
Cortinarius semisanguineus	6			1	1	3	1					
Cortinarius sphagnophilus	1	1										
Cortinarius subcroceofolius	1				1							
Cortinarius traganus	7			1		5	1					
Cortinarius trivialis	2	2										
Cortinarius venustus	1				1							

SpeciesName\Trail	TOT	HV	ML	GB	NWR	BB	TLH	LS	PIN	TRA	FOR	misc
Cortinarius vibratilis	1				1							
Craterellus tubaeformis	6			1	1	2	2					
Crepidotus cesatii	1		1									
Crucibulum laeve	1	1										
Cudonia circinans	2				1	1						
Cuphophyllus borealis	1		1									
Cuphophyllus lacmus	1					1						
Cystoderma amianthinum	10		2		1	1	6					
Cystoderma granulosum	2		1			1						
Cystoderma jasonis	1				1							
Dacrymyces chrysospermus	10	2	1	1		3	3					
Dacrymyces stillatus	1		1									
Datronia scutellata	1					1						
Deconica montana	2		1	1								
Diatrype stigma	2	1	1									
Encoelia furfuracea	1						1					
Entoloma sericellum	2					2						
Exidia glandulosa	2		1				1					
Exidia pithya	1		1									
Exobasidium vaccinii	2	1				1						
Femsjonia peziziformis	1						1					
Fomes fomentarius	4	1				2	1					
Fomitopsis cajanderi	2				1	1						
Fomitopsis ochracea	1				1							
Fomitopsis pinicola	10		1		1	4	4					
Fomitopsis rosea	1					1						
Galerina atkinsoniana	1		1									
Gliophorus laetus	1		1									
Gliophorus psittacinus	1		1									
Gloeophyllum protractum	2			1			1					
Gloeophyllum sepiarium	11		2	2	4	3						
Gomphidius borealis	4		1		3							
Gymnopilus junonius	4				2	1	1					
Gymnopilus penetrans	2				1	1						
Gymnopilus picreus	2		1			1						
Gymnopilus sapineus	3		1			1	1					
Gymnopus acervatus	6	1			2	2						1
Gymnopus confluens	5	2		1	1	1						
Gymnopus eneficola	1		1									
Gyromitra ambigua	4					3		1			1	
Hapalopilus nidulans	1					1						

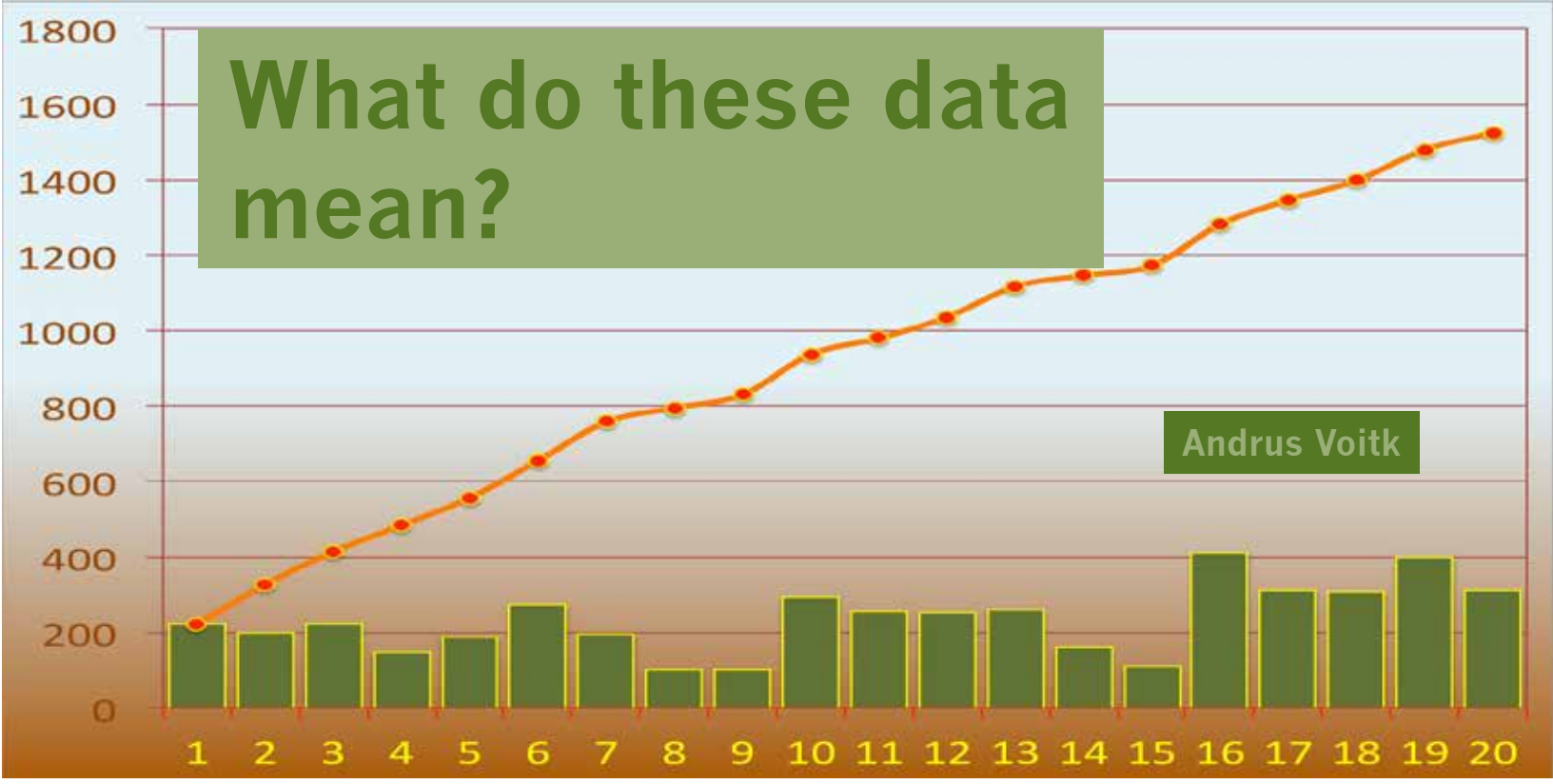
SpeciesName\Trail	TOT	HV	ML	GB	NWR	BB	TLH	LS	PIN	TRA	FOR	misc
Hebeloma sp.	33	6	6	2	11	3	3					2
Helvella lacunosa	1			1								
Heyderia abietis	1						1					
Hohenbuehelia tremula	1											1
Hydnellum aurantiacum	1				1							
Hydnellum caeruleum	2			1		1						
Hydnellum peckii	1				1							
Hydnum umbilicatum	7			1	1	2	3					
Hygrocybe cantharellus	1		1									
Hygrocybe conica	2	1		1								
Hygrocybe jackmanii	1							1	1			
Hygrocybe miniata	1	1										
Hygrophoropsis aurantiaca	1					1						
Hygrophorus olivaceoalbus	2				2							
Hygrophorus piceae	2					2						
Hygrophorus purpurascens	1					1						
Hymenochaetopsis tabacina	3	1			1		1					
Hymenoscyphus alniellus	1					1						
Hymenoscyphus calyculus	1			1								
Hypholoma capnoides	5	1					3	1	1			
Hypholoma myosotis	1		1									
Hypomyces chrysospermus	1		1									
Hypomyces lateritius	1				1							
Hypoxylon fuscum	3	1					1	1	1			
Hypoxylon rubiginosum	1		1									
Infundibulicybe gibba	1		1									
Inocybe geophylla	4	2	1				1					
Inocybe lacera	1	1										
Inonotus obliquus	3	2					1					
Ischnoderma benzoinum	1		1									
Laccaria bicolor	10	1	1	2	3	1		1	1			1
Laccaria laccata var. *pallidifolia*	1						1					
Laccaria longipes	2						2					
Laccaria nobilis	1					1						
Laccaria striatula	3		1			1						1
Laccaria tortilis	3	1		2								
Lachnellula agassizii	5		1		1		3					
Lactarius affinis	6				1	3	2					
Lactarius deceptivus	1			1								
Lactarius deterrimus	1	1										
Lactarius glyciosmus	6		2		1	1	2					

SpeciesName\Trail	TOT	HV	ML	GB	NWR	BB	TLH	LS	PIN	TRA	FOR	misc
Lactarius helvus	1				1							
Lactarius hibbardiae	11		2	3	3	3						
Lactarius lignyotus	1											1
Lactarius mucidus	2				1		1					
Lactarius nitidus	1		1									
Lactarius pubescens	1						1					
Lactarius rufus	14				4	8	1	1		1		
Lactarius sordidus	3		1		1	1						
Lactarius torminosus	2			1	1							
Lactarius trivialis	1						1					
Lactarius vietus	2				1		1					
Lasiobelonium corticale	1						1					
Leccinum holopus	12		3	2	2	5						
Leccinum insolens	2				1		1					
Leccinum rotundifoliae	2			1		1						
Leccinum scabrum	8	2	2	1	1	2						
Leccinum vulpinum	10	1	3	2	2	1						1
Lentinellus micheneri	4	2	1				1					
Leocarpus fragilis	1					1						
Leotia lubrica	1				1							
Lepista flaccida	3	2				1						
Leucocybe connata	1			1								
Lichenomphalia umbellifera	6		1		1	3		1		1		
Lycogala epidendrum	3					1	2					
Lycoperdon molle	3	2		1								
Lycoperdon perlatum	6	2			1	2	1					
Lycoperdon pyriforme	7			3		3	1					
Lyophyllum shimeji	1					1						
Marasmiellus filopes	1						1					
Marasmiellus perforans	2		2									
Marasmius androsaceus	7		3		1	1	1	1	1			
Marasmius epiphyllus	2		1	1								
Marasmius pallidocephalus	1		1									
Melampsorella caryophyllacearum	1				1							
Melanoleuca brevipes	1				1							
Melanospora lagenaria	1		1									
Merismodes anomala	2	1					1					
Merismodes fasciculata	1						1					
Mucilago crustacea	1					1						
Multiclavula mucida	2					1	1					
Mycena clavicularis	1						1					

SpeciesName\Trail	TOT	HV	ML	GB	NWR	BB	TLH	LS	PIN	TRA	FOR	misc
Mycena epipterygia	4		1		1	1	1					
Mycena epipterygia var. lignicola	2				1		1					
Mycena haematopus	1					1						
Mycena maculata	1						1					
Mycena megaspora	4	3			1							
Mycena olivaceomarginata	1					1						
Mycena robusta	1			1								
Mycena vulgaris	1						1					
Mycocalicium subtile	2						2					
Myxarium nucleatum	2						2					
Neolecta irregularis	3		1		2							
Neolecta vitellina	2				2							
Neottiella vivida	1			1								
Nidularia deformis	1					1						
Omphalina pyxidata	3				3							
Onnia tomentosa	12	1		1	7	3						
Otidea platyspora	2		1				1					
Panaeolina foenisecii	3	1	1	1								
Panaeolus sphinctrinus	2	2										
Panellus mitis	1						1					
Panellus ringens	2	1			1							
Panellus violaceofulvus	1	1										
Paxillus involutus	7		1		4	2						
Peniophora aurantiaca	2				1		1					
Peniophora polygonia	1						1					
Peniophora rufa	3						3					
Peziza badia	3			1		2						
Peziza petersii	1					1						
Peziza violacea	1					1						
Phellinus igniarius	1					1						
Phellinus nigricans	5					5						
Phlebia centrifuga	1						1					
Pholiota alnicola	6	2	1	1	1	1						
Pholiota spumosa	2			1		1						
Pholiota squarrosa	1			1								
Piptoporus betulinus	1						1					
Pleurocybella porrigens	4		1			1	2					
Plicatura nivea	5	3			1		1					
Pluteus petasatus	1						1					
Pluteus sp.	4		1			1						2
Polyporus badius	1		1									

SpeciesName\Trail	TOT	HV	ML	GB	NWR	BB	TLH	LS	PIN	TRA	FOR	misc
Polyporus brumalis	5	2	1	1		1						
Polyporus ciliatus	1						1					
Polyporus varius	4		1	2	1							
Porodaedalea chrysoloma	2		1			1						
Postia caesia	1						1					
Postia ptychogaster	1		1									
Psathyrella ammophila	1							1			1	
Psathyrella conissans	1					1						
Psathyrella hydrophila	1					1						
Pseudoarmillariella ectypoides	2		1			1						
Pseudoclitocybe cyathiformis	2		2									
Pseudohydnum gelatinosum	1	1										
Pseudomphalina kalchbrenneri	1		1									
Psilocybe caerulipes	3	2				1						
Psilocybe semilanceata	1					1						
Ramaria stricta	1					1						
Rhodocollybia butyracea	2	1			1							
Rhodocollybia maculata var. *maculata*	6					4	1	1	1			
Rhodocollybia maculata var. *scorzonerea*	4	2					2					
Rhytisma salicinum	2		1		1							
Rickenella fibula	3		1		1		1					
Russula aeruginea	1			1								
Russula aquosa	2						2					
Russula claroflava	2	1			1							
Russula decolorans	3				1	1		1		1		
Russula fragilis	4	2		2								
Russula montana	8	2	2		2	2						
Russula paludosa	2						2					
Russula sylvestris	2		1		1							
Russula velenovskyi	1				1							
Russula xerampelina	2				1	1						
Sarcodon scabrosus	2			1			1					
Sarcomyxa serotina	2			1	1							
Scleroderma septentrionale	1			1								
Scutellinia scutellata	4				1	2	1					
Skeletocutis amorpha	1		1									
Spathularia flavida	1	1										
Sphaeronaemella helvellae	1							1			1	
Spinellus fusiger	2						2					
Steccherinum ochraceum	1					1						
Stereum sanguinolentum	1		1									

SpeciesName\Trail	TOT	HV	ML	GB	NWR	BB	TLH	LS	PIN	TRA	FOR	misc
Stropharia cyanea	1	1										
Stropharia hornemannii	4					2	1	1	1			
Suillus brevipes	2		1			1						
Suillus clintonianus	2			1								1
Suillus glandulosus	8		3		3							2
Suillus paluster	1			1								
Suillus spectabilis	1			1								
Tapinella panuoides	1				1							
Tectella patellaris	1	1										
Thelephora terrestris	3	1		1			1					
Trametes hirsuta	1				1							
Trametes pubescens	1	1										
Tremella foliacea	1		1									
Tremella mesenterica	1						1					
Trichaptum abietinum	8	1			1	2	4					
Trichaptum laricinum	7		4		1		2					
Tricholoma equestre	2		1				1					
Tricholoma focale	3			1	1		1					
Tricholoma imbricatum	1		1									
Tricholoma inamoenum	2	1					1					
Tricholoma magnivelare	1			1								
Tricholoma sp. “unearthly trich”	1			1								
Tricholoma transmutans	2				2							
Tricholoma vaccinum	6	1	1		2	2						
Tricholomopsis decora	3		2		1							
Tricholomopsis sulphureoides	2				1							1
Tyromyces chioneus	6	2			2	1	1					
Xerocomus badius	2	1	1									
Xeromphalina cauticinalis	2					1	1					
Xeromphalina cornui	2				1	1						
Xeromphalina enigmatica	2		1			1						



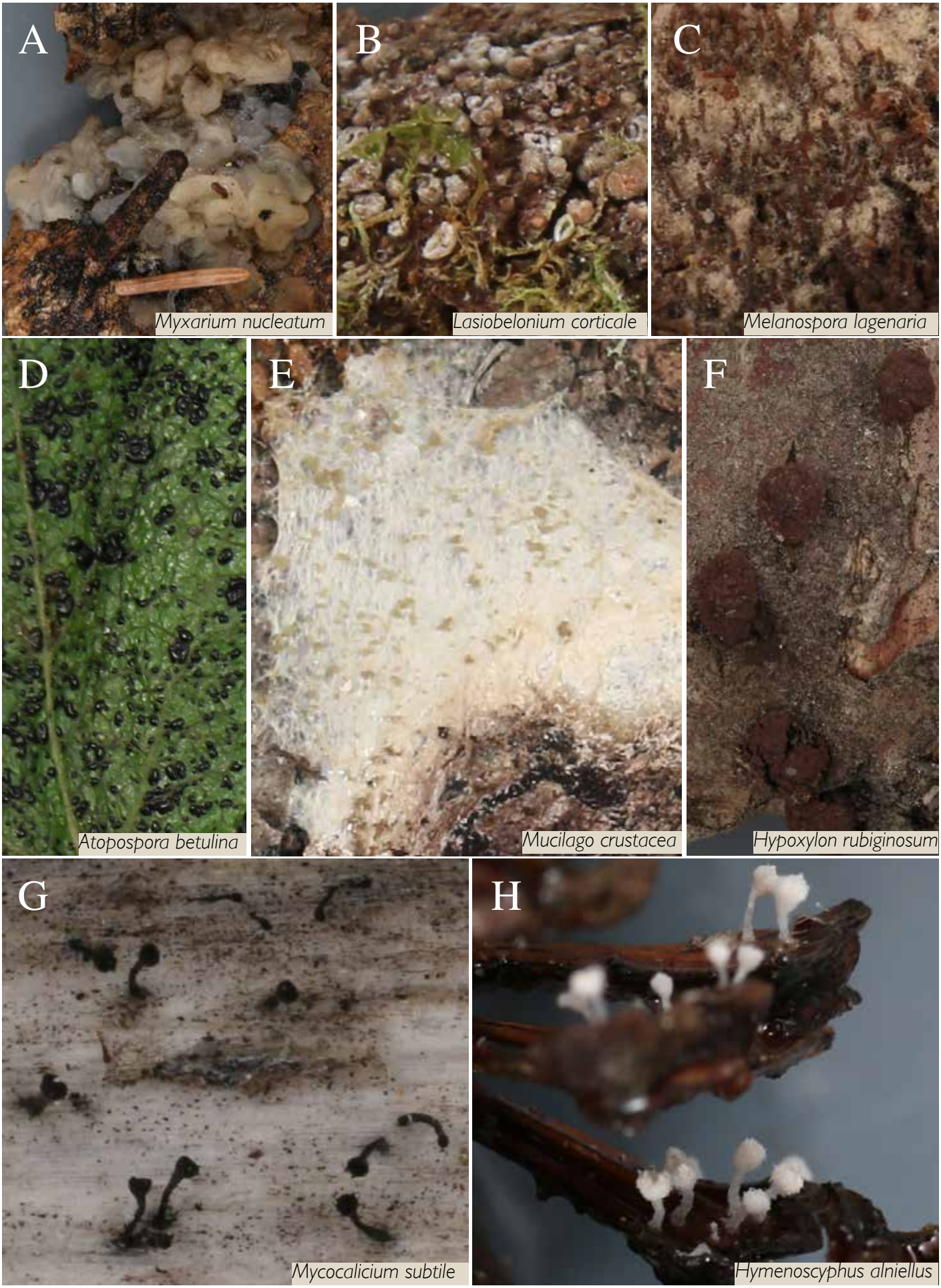
It was the third-best of times and it was the third-worst of times. 1,055 collections yielded 313 species, of which 44 were new to our list. Over 14 full forays, the total number of identified species is the third-highest and the number of new species to our list is the third-lowest.

The title banner shows this year's data (last bar and dot on the right) in relation to previous forays. The red dots show our cumulative species count per year, and the green bars show the total number of species per foray. As you see, the slope of the orange line took a small, but noticeable dip, while the green bar is among the highest.

We have discussed the apparent decreasing number of new species for the past 2–3 years, at least the big, fleshy, colourful fruit bodies that most people think of as mushrooms. The feeling is that over the past 14 years with 14 full forays, and six smaller regional sorties, we have probably collected most of the large fleshy fungi that grow in the province. You might think that HVGB offers us a habitat that differs from what we find on the Island, but in many ways the sandy soil of HVGB resembles that of central Newfoundland, except for its more northern location. We have held two full forays in central Newfoundland. We have also made several smaller forays to Labrador, including considerably farther north. The result is that many species unique to sandy soil or northern habitats have been collected before.

The data bear this out. Here are 11 species from the 2016 list that tend to be found in northern climes: *Amanita groenlandica*, ***Arrhenia auriscalpum***, ***Arrhenia fusconigra***, *Blasiphalia pseudogrisella*, *Deconica montana*, ***Fomitopsis cajanderi***, *Gloeophyllum protractum*, ***Gyromitra ambigua***, ***Hygrocybe jackmanii***, *Leccinum rotundifoliae*, *and Lentinellus micheneri*. Species new to the Foray list are shown in bold font. The remarkable finding is not that 45% are new to our list (accounting for 11% of the new species), but that 55% have been collected before, among them many rare and unusual species. Most keen mushroomers will never see *Blasiphalia pseudogrisella* in their life, but we found troops of it just behind our motel. Yet, even this uncommon find was not new to our list.

As in the past few years, many of the new species are made up by species not on most people's radar, when they look for mushrooms. How many of you are on intimate speaking terms with species like: *Spahaeronaemella hellvellae*, *Myxarium nucleatum* (A), *Mycocalicium subtile* (G), *Mucilago crustacea* (E), *Melanospora lagenaria* (C), *Lasiobelonium corticale* (B), *Hypoxylon rubiginosum* (F), *Hymenoscyphus alniellus* (H) and *Atopospora betulina* (D)? Those eight species from the marginalized far out fringe of the mushroom world (shown on the next page—photos by Roger Smith—letter corresponding to the parenthesized letter in the list) make up one-fifth of all our new species.


A
Myxarium nucleatum
B
Lasiobelonium corticale
C
Melanospora lagenaria
D
Atopospora betulina
E
Mucilago crustacea
F
Hypoxylon rubiginosum
G
Mycocalicium subtile
H
Hymenoscyphus alniellus

Blasiphalia pseudogrisella, *an uncommonly seen mushroom of northern sandy soil, growing with the liverwort,* Blasia pusilla, *seen at the base of the stem. Here it was very common, found below our motel window, beside the parking lot at the ski lodge, and in roadside ditches on the Trans-Labrador Highway. (Photo: Roger Smith)*

Might as well say it here: the premise in the opening sentence is false. The purpose of the foray is not to collect a record number of species, or to add great numbers to a list. Thus, finding many species is not "good" and finding few new species is not "bad". There is no expected quota, and no competition with other forays, locations, sites, or years. **The prime job of FNL is to organize enjoyable forays.** Mushroom forays are events where people with a common curiosity meet and enjoy each other's company while going out in nature to learn something about a group of organisms about which most of us know very little.

We do this by collecting what there is and having our collections identified by mycologists. And, yes, that results in a list and specimens, both of scientific value. This we share with participants, scientists and the public. Each year we try to interpret why we found (or did not find) what we did. Data contain a lot of information, and it is interesting to try to see whether we can figure out what the data tell us. One thing the data do not tell us, is whether the foray was a success. Only you, the participants, can tell us that. If you enjoyed yourself in the company of like-minded people and learned something, it was a great success.

I did, so for me it was a very successful foray. Makes me look forward to 2017.

SURVEY OF THE LICHEN-FORMING ASCOMYCETES FOUND AT THE 2016 NL FORAY

Chris Deduke , Troy McMullin and André Arsenault

Species (Authority) – Collectors/Determiners	Aspen	Mud Lake	Labrador Interpretation Center	Old Growth	Robin	Gosling View (Robin 2)	"OTHER"
Agyrium rufum (Pers.) Fr. – RTM/RTM			√				
Alectoria sarmentosa (Ach.) Ach. – CD&RTM/RTM	√	√	√	√			
Arctoparmelia centrifuga (L.) Hale – RTM/RTM	√					√	
Arctoparmelia incurva (Pers.) Hale – RTM/RTM						√	
Aspicilia cinerea (L.) Körber – RTM/RTM						√	
Athallia pyracea (Ach.) Arup, Frödén & Søchting – RTM/RTM							√
Bacidia subincompta (Nyl.) Arnold – RTM/RTM	√						
Baeomyces rufus (Hudson) Rebent. – RTM/RTM							√
Biatora pycnidiata Printzen & Tønsberg – RTM/RTM		√	√				
Bilimbia sabuletorum (Schreber) Arnold – RTM/RTM	√						
Bryoria furcellata (Fr.) Brodo & D. Hawksw. – AA&RTM/ AA&RTM			√		√		
Bryoria fuscescens (Gyelnik) Brodo & D. Hawksw. – AA&RTM/ AA&RTM			√		√	√	
Bryoria nadvornikiana (Gyelnik) Brodo & D. Hawksw. – AA&RTM/AA&RTM			√		√		
Bryoria pikei Brodo & D. Hawksw. – RTM/RTM			√		√		
Bryoria simplicior (Vainio) Brodo & D. Hawksw. – RTM/RTM							√
Bryoria trichodes ssp. *trichodes* (Michaux) Brodo & D. Hawksw. – RTM/RTM			√		√		
Bryoria sp. Brodo & D. Hawksw. – AA,CD&RTM/AA&RTM		√	√		√		
Buellia arnoldii Servít – RTM/RTM		√					
Buellia erubescens (Buellia stillingiana) Arnold – AA&RTM/ AA&RTM		√		√			
Calicium salicinum Pers. – AA&RTM/AA&RTM				√	√		
Calicium trabinellum (Ach.) Ach – RTM/RTM		√					
Caloplaca cerina (Ehrh. ex Hedwig) Th. Fr. – RTM/RTM							√
Cetraria ericetorum Opiz – RTM/RTM		√					√
Chaenotheca brunneola (Ach.) Müll. Arg. – RTM/AA&RTM		√		√			

Species (Authority) – Collectors/Determiners	**Aspen**	**Mud Lake**	**Labrador Interpretation Center**	**Old Growth**	**Robin**	**Gosling View (Robin 2)**	**"OTHER"**
Chaenotheca chrysocephala (Ach.) Th. Fr. – RTM/RTM			√				
***Chaenotheca ferruginea* (Turner ex Sm.) Mig. – RTM/ AA&RTM**				√			
Chaenotheca furfuracea (L.) Tibell – AA/AA				√			
Chaenotheca trichialis (Ach.) Th. Fr. – RTM/RTM			√				
Chaenotheca xyloxena Nádv. – RTM/RTM		√					
Chaenothecopsis marcineae Selva – RTM/RTM			√				
***Chaenothecopsis pusilla* (Ach.) A.F.W. Schmidt – RTM/RTM**		√					
Cladonia amaurocraea (Ach.) Norrlin – RTM/RTM					√		
Cladonia botrytes (K. G. Hagen) Willd. – CD&RTM/RTM					√		√
Cladonia cenotea (Ach.) Schaerer – RTM/RTM			√	√			
Cladonia chlorophaea (Flörke ex Sommerf.) Sprengel – CD/RTM		√					
Cladonia cornuta (L.) Hoffm. – AA,CD&RTM/AA&RTM		√	√		√		√
Cladonia crispata (Ach.) Flotow – RTM/RTM		√	√				
Cladonia cristatella Tuck. – AA,CD&RTM/AA&RTM		√	√	√	√		
Cladonia deformis (L.) Hoffm. – RTM/RTM			√				
Cladonia digitata (L.) Hoffm. – RTM/RTM				√			
Cladonia gracilis ssp. *gracilis* (L.) Willd. – RTM/RTM						√	
Cladonia gracilis ssp. *turbinata* (Ach.) Ahti – RTM/RTM		√					√
Cladonia macrophylla (Schaerer) Stenh. – AA&RTM/RTM					√	√	√
Cladonia maxima (Asahina) Ahti – CD&RTM/RTM			√				
Cladonia mitis (Sandst.) Ruoss – AA&CD/AA&RTM		√			√		√
Cladonia ochrochlora Flörke – AA&RTM/AA&RTM			√	√			
Cladonia pleurota (Flörke) Schaerer – RTM/RTM				√			
Cladonia rangiferina (L.) F. H. Wigg. –AA,CD&RTM/AA&RTM		√	√		√		
Cladonia scabriuscula (Delise) Nyl. – RTM/RTM		√					
Cladonia stellaris (Opiz) Pouzar & Vězda – CD,MC&RTM/RTM			√				√
Cladonia stygia (Fr.) Ruoss – CD&RTM/RTM			√	√			
Cladonia sulphurina (Michaux) Fr. – RTM/RTM			√			√	
Cladonia uncialis (L.) Weber ex F. H. Wigg. – RTM/RTM			√		√		

Species (Authority) – Collectors/Determiners	**Aspen**	**Mud Lake**	**Labrador Interpretation Center**	**Old Growth**	**Robin**	**Gosling View (Robin 2)**	**"OTHER"**
Cladonia verticillata (Hoffm.) Schaerer – AA&CD/AA&AV		√				√	
Cladonia sp. P. Browne – AA&CD/AA&RTM		√	√				
Cystobasidium hypogymniicola Diederich & Ahti – RTM/RTM			√		√		
Dibaeis baeomyces (L. f.) Rambold & Hertel – RTM/RTM							√
Evernia mesomorpha Nyl. – RTM/RTM			√		√		
Flavocetraria nivalis (L.) Kärnefelt & A. Thell – RTM/RTM					√		
Hypogymnia bitteri (Lynge) Ahti – AA,CD&RTM/AA&RTM		√	√				
Hypogymnia incurvoides Rass. – RTM/RTM		√		√			
Hypogymnia physodes (L.) Nyl. – CD/RTM			√	√			
***Hypogymnia pulverata* (Nyl. ex Crombie) Elix – CD&RTM/ RTM**		√	√		√		
Hypogymnia tubulosa (Schaerer) Hav. – RTM/RTM		√					
Hypogymnia vittata (Ach.) Parrique – RTM/RTM				√			
Icmadophila ericetorum (L.) Zahlbr. – BF, RTM&MV/RTM&RGT		√	√		√		
Imshaugia aleurites (Ach.) S. F. Meyer – RTM/RTM			√				
Lecanora intricata (Ach.) Ach. – RTM/RTM					√	√	
Lecanora polytropa (Ehrh.) Rabenh. – RTM/RTM						√	
Lecidea albofuscescens Nyl. – RTM/RTM				√			
Lepraria sp. Ach. – AA/AA			√			√	
***Leptorhaphis epidermidis* (Ach.) Th. Fr. – RTM/RTM**		√					
Lichenicolous fungi on Peltigera sp. – CD		√					
Lichenomphalia umbellifera (L.:Fr.) Redhead, Lutzoni, Moncalvo & Vilgalys – BF, RLB&RGT /RLB&RGT		√			√		√
Lobaria pulmonaria (L.) Hoffm. – AA,GB, RTM&AV/AA, RTM, RGT&AV		√		√	√		√
Lobaria scrobiculata (Scop.) DC. – AA,CD&RTM/AA&RTM				√	√		
Loxospora elatina (Ach.) A. Massal. – AA&RTM/AA&RTM		√		√	√		
Melanelia stygia (L.) Essl. – RTM/RTM						√	
Melanohalea septentrionalis (Lynge) O. Blanco et al. – RTM/RTM		√					
Melanohalea trabeculata (Ahti) O. Blanco et al. – RTM/RTM	√						
Microcalicium conversum Tibell – RTM/RTM			√				

Species (Authority) – Collectors/Determiners	Aspen	Mud Lake	Labrador Interpretation Center	Old Growth	Robin	Gosling View (Robin 2)	"OTHER"
Montanelia panniformis (Nyl.) Divakar, A. Crespo, Wedin & Essl. – RTM/RTM						√	
Multiclavula sp. R. Petersen – RLB/RLB				√			√
Mycoblastus sanguinarius (L.) Norman – RTM/RTM			√				
Mycocalicium subtile (Pers.) Szatala – RTM/RTM				√			
Nephroma arcticum (L.) Torss. – AA, CD, MB&RTM/AA&RTM			√	√	√		√
Nephroma bellum (Sprengel) Tuck. – RTM/RTM	√				√		
Nephroma parile (Ach.) Ach. – RTM/RTM					√		
Nephroma resupinatum (L.) Ach. – RTM/RTM	√				√		
***Ochrolechia gowardia* Brodo – RTM/RTM**			√				
Ochrolechia sp. A. Massal. – AA/AA				√			
Parmelia saxatilis (L.) Ach. – RTM/RTM							√
Parmelia squarrosa Hale – AA,CD&GB/AA,RTM&AV		√	√				√
Parmelia sulcata Taylor – AA,CD&RTM/AA&RTM	√	√	√				
Parmeliopsis ambigua (Wulfen) Nyl. – AA&RTM/AA&RTM			√	√	√		
Parmeliopsis capitata R. C. Harris ex J. W. Hinds & P. L. Hinds – RTM/RTM		√					
Parmeliopsis hyperopta (Ach.) Arnold – AA&RTM/AA&RTM		√	√				
Peltigera aphthosa (L.) Willd. – AA, CD, GB&RTM/RTM&RGT		√	√	√			√
Peltigera canina (L.) Willd. – LB&RTM/RTM&AV			√				√
Peltigera didactyla (With.) J. R. Laundon – RTM/RTM		√					
Peltigera extenuata (Nyl. *ex* Vainio) Lojka – RTM/RTM		√					
Peltigera horizontalis (Hudson) Baumg. – RTM/RTM	√						
Peltigera malacea (Ach.) Funck – AA/AA			√				
Peltigera neckeri Hepp ex Müll. Arg. – CD/RTM		√					
Peltigera neopolydactyla (Gyelnik) Gyelnik – RTM/RTM		√	√				
Peltigera polydactylon (Necker) Hoffm. – CD/RTM		√		√			
Peltigera rufescens (Weiss) Humb. – RL&RTM/RTM							√
Peltigera scabrosa Th. Fr. – RTM/RTM		√	√				
Pertusaria consocians Dibben – RTM/RTM				√			
Phaeocalicium compressulum (Nyl. *ex* Vainio) A.F.W. Schmidt – RTM/RTM			√				
***Phaeocalicium flabelliforme* Tibell – RTM/RTM**			√				
Phaeophyscia pusilloides (Zahlbr.) Essl. – RTM/RTM	√						

Species (Authority) – Collectors/Determiners	Aspen	Mud Lake	Labrador Interpretation Center	Old Growth	Robin	Gosling View (Robin 2)	"OTHER"
Physcia aipolia var. *aipolia* (Ehrh. ex Humb.) Fürnr. – RTM/RTM							√
Placynthiella oligotropha (J. R. Laundon) Coppins & P. James – RTM/RTM						√	
Platismatia glauca (L.) W. L. Culb. &C. F. Culb. – CD&RTM/RTM		√	√	√			
Protopannaria pezizoides (Weber) P. M. Jørg. & S. Ekman – RTM/RTM	√						
***Pseudephebe minuscula* (Nyl. ex Arnold) Brodo & D. Hawksw. – RTM/RTM**						√	
Ramalina dilacerata (Hoffm.) Hoffm. – RTM/RTM		√					
Rhizocarpon sp. Ramond ex DC. – RTM/RTM						√	
Sarea resinae (Fr.) Kuntze – RTM/RTM			√				
***Scytinium tenuissimum* (Dickson) Otálora, P. M. Jørg. & Wedin – RTM/RTM**	√						
***Scytinium teretiusculum* (Wallr.) Otálora, P. M. Jørg. & Wedin – RTM/RTM**	√						
Stenocybe major Nyl. ex Körber – RTM/RTM		√					
Stenocybe pullatula (Ach.) Stein – RTM/RTM		√					
Stereocaulon condensatum Hoffm. – RTM/RTM						√	
Stereocaulon paschale (L.) Hoffm. – CD&RTM/RTM						√	√
Stereocaulon tomentosum Fr. – RTM/RTM		√	√			√	
Trapeliopsis granulosa (Hoffm.) Lumbsch – RTM/RTM						√	
Tuckermannopsis americana (Sprengel) Hale – AA&RTM/AA&RTM					√	√	
Tuckermannopsis sp. Gyelnik – CD/RTM			√				
Umbilicaria hyperborea (Ach.) Hoffm. – RTM/RTM						√	√
Umbilicaria muhlenbergii (Ach.) Tuck. – RTM/RTM						√	
Umbilicaria proboscidea (L.) Schrader – RTM/RTM					√		
Umbilicaria torrefacta (Lightf.) Schrader – RTM/RTM						√	
Usnea sp. Dill. ex Adanson, CD/RTM			√				
Variolaria amara Ach. – RTM/RTM	√			√			
Variolaria ophthalmiza (Nyl.) Darb. – RTM/RTM		√					√
Vulpicida pinastri (Scop.) J.-E. Mattsson & M. J. Lai – AA,CD&RTM/AA,RTM		√	√		√		
Xylographa parallela (Ach.:Fr.) Fr. – RTM/RTM			√				

*Bold indicates new record to province.
Initials: AA = André Arsenault, GB = Glynn Bishop, MB = Michael Burzynski, LB = Leanna Butters, MC = Michael Curran, CD = Chris Deduke, BF = Betty Anne Fequet, RLB = Renée Lebeuf, RL = Roz Lowen, RTM = Troy McMullin, RGT = Greg Thorn, AV = Andrus Voitk, MV = Maria Voitk.

Breakdown of "Other" Trails
Base Perimeter 1: *Cladonia botrytes*.
Birch Brook Trail: *Lichenomphalia umbellifera*.
Bunker: *Peltigera canina, Peltigera rufescens*.
Halfway Point: *Nephroma arcticum*.
Legion: *Athallia pyracea, Caloplaca cerina, Physcia aipolia* var. *aipolia*
Loppet Trail: *Cladonia mitis, C. stellaris, Stereocaulon paschale*.
Motel North: *Dibaeis baeomyces*.
Natural Resources Yard: *Peltigera rufescens*.
Rabbit Trail: *Cladonia stellaris, Lobaria pulmonaria, Parmelia squarrosa, Peltigera aphthosa*.
Ski Club (Home Base): *Lichenomphalia umbellifera*.
Summit Trail: *Baeomyces rufus, Bryoria simplicior, Cetraria ericetorum, Cladonia cornuta, C. gracilis* ssp. *turbinata, C. macrophylla, Parmelia saxatilis, Stereocaulon paschale, Umbilicaria hyperborea*.
Tranquility Trail: *Lichenomphalia umbellifera*.

A rich lichen biota was discovered in the Happy Valley-Goose Bay region of Labrador during Foray 2016. We identified 117 species of lichens and 11 non-lichenized allied fungi from 267 specimens. Eight specimens were only identified to genus. Nine species are new provincial records: *Chaenotheca ferruginea, Chaenothecopsis pusilla, Hypogymnia pulverata, Leptorhaphis epidermidis, Ochrolechia gowardia, Phaeocalicium flabelliforme, Pseudephebe minuscula, Scytinium tenuissimum* and *Scytinium teretiusculum*. Twenty-four species are members of the genus *Cladonia*. Twenty-two species have cyanobacteria as their primary photobiont: 2 species of *Lobaria*, 3 *Nephroma* species, 11 *Peltigera* species, *Protopannaria pezizoides*, 2 *Scytinium* species and 3 species of *Stereocaulon*. Seventeen species are calicioids: 2 species of *Calicium*, 6 *Chaenotheca* species, 2 *Chaenothecopsis* species, *Microcalicium conversum*, *Mycocalicium subtile*, 3 species of *Phaeocalicium* and 2 species of *Stenocybe*). Saxicolous lichens were the least collected, which was likely due to a lack of exposed rock at the foray locations. The number of identified species discovered on each trail is shown in Figure 1.

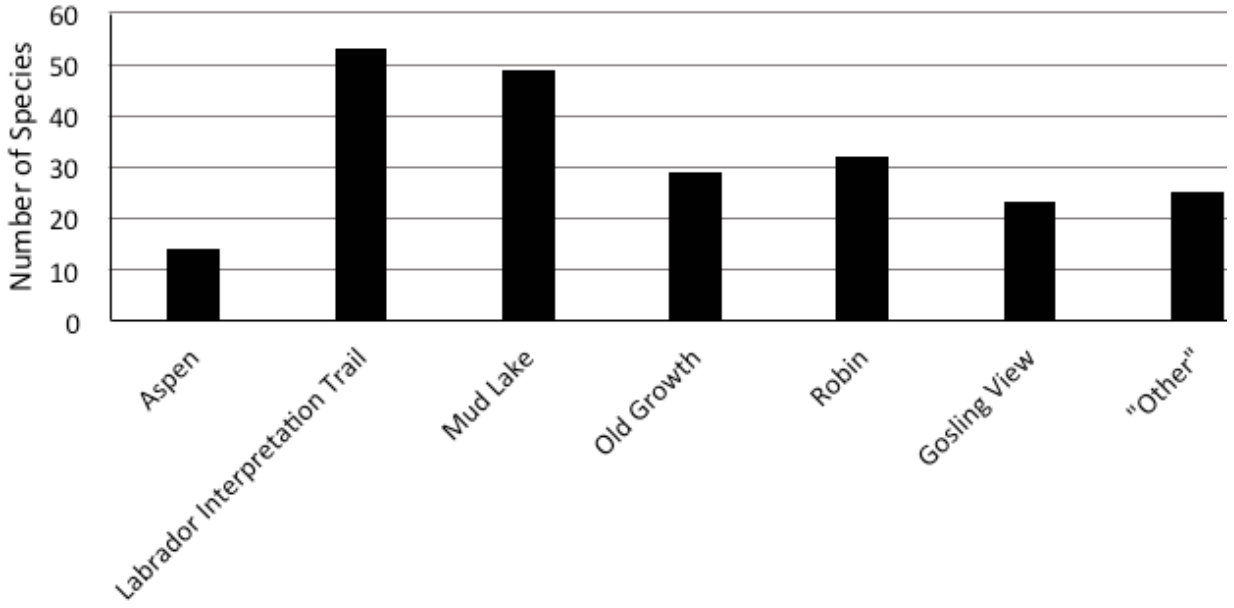


Figure 1. Number of identified lichens and non-lichenized allied fungi found at different Foray 2016 locations. For a record of "Other" trails and their species, please see Breakdown of "Other" Trails following species list.

Aspen

Aspen is a mixed-wood balsam poplar (*Populus balsamifera*) stand located east of HappyValley-Goose Bay. It was a productive stand with an overstory of balsam poplar, paper birch (*Betula papyrifera*), and conifers adjacent to dry lichen woodland habitat. Cyanolichens were the most abundant with six species collected including *Scytinium tenuissimum* and *S. teretiusculum*. Other genera of cyanolichens included *Nephroma*, *Peltigera*, and *Protopannaria*. Fourteen species were discovered at this site despite a small amount of time spent collecting.

Mud Lake

The forests surveyed around the community of Mud Lake are regenerating following harvest and severe spruce budworm defoliation. Tree species included balsam fir (*Abies balsamea*), paper birch, and some spruce (*Picea*) with an understory of alder (*Alnus*). Ground cover is predominantly *Cladonia* and *Peltigera* species. *Chaenothecopsis pusilla, Hypogymnia pulverata,* and *Leptorhaphis epidermidis* were found at this site. The second highest number of species were collected at Mud lake (49).

Ground cover of *Cladonia* and *Peltigera* species. *Lichenomphalia umbellifera* growing on a stump. Photos Chris Deduke.

Labrador Interpretation Trail

The Labrador Interpretation Trail is located in North West River. It is a second-growth forest dominated by black spruce (*Picea mariana*), paper birch, and balsam fir. Patterns of tree growth rings at the site suggest that a large portion of the forest was disturbed in the mid-1950's, probably due to logging. Many of the black spruce trees were suppressed in the understory at the time of the disturbance and can be up to 130 years old. *Bryoria* species were abundant on the old black spruce trees. *Hypogymnia pulverata* was found growing on black spruce and balsam fir. *Orchrolechia gowardii* and *Phaeocalicium flabelliforme* grew on paper birch. Among the ground dwelling species, *Nephroma articum* was particularly abundant in this forest, growing in large clusters. Fifty-three species were discovered at this site, which is the highest of any of the sites.


Second growth spruce forest covered in *Byroria* species. *Nephroma arcticum* thallus. Photos André Arsenault.

Old Growth

This site is an old-growth forest located south of Happy Valley - Goose Bay. The stand is dominated by old black spruce and balsam fir with some paper birch and white spruce (*Picea glauca*). The forest is estimated to be over 200 years old and has many signs of small-scale disturbances producing snags and downed wood. Most of the species collected here were epiphytic on bark or lignin with the exception of species belonging to *Cladonia and Peltigera*. A notable collection for this site was the lichenized calicioid *Chaenotheca ferruginea*. Twenty-nine species were collected from the 'Old Growth' site.


Old growth spruce forest. *Hypogymnia bitteri* thallus on spruce. Photos André Arsenault.

Robin

Robin's Route is a trail at the Birch Brook Nordic Ski Lodge. This second growth spruce forest traversed a stream that was surrounded by an abundance of willow (*Salix*). The humidity from the stream provided good habitat for cyanolichens with collections of numerous *Lobaria* and *Nephroma* species. A third collection of *Hypogymnia pulverata* was made on this trail. Similar to the Labrador Interpretation Trail, the second growth spruce trees proved to be a suitable substrate for a variety of *Bryoria* species. Thirty-two species were collected at this site.

Gosling View (Robin 2)

Gosling View, or Robin's Route 2, is another trail at the Birch Brook Nordic Ski Lodge. This site was unique because it was one of the few locations to have rock outcrops, which were colonized by several saxicolous lichens. A more scenic trail, this location was farther up the hill behind the ski lodge, overlooking the area. The collection site was granitic rock dominated by boreal outcrop lichens including species of *Arctoparmelia*, *Stereocaulon,* and *Umbilicaria*. Surrounding the rock face was a mixture of mosses and *Cladonia* species along with the occasional spruce tree. Below the clearing was the spruce forest and Robin's Route trail. The species new to the province from this site was *Pseudephebe minuscula*. Twenty-three species were collected from this location.

View from Gosling View trail. Thallus of *Arctoparmelia centrifuga*. Photos André Arsenault.

In summary, the Goose Bay foray collection included 117 species of lichens and 11 species of non-lichenized allied fungi. The Labrador Interpretation Trail was the richest collection site with 53 species followed by Mud Lake with 49. *Cladonia* was the most diverse genus of lichen with 24 species, while *Peltigera* was the most diverse cyanolichen with 11 species. Nine new records were made for Newfoundland at this foray. These included *Chaenotheca ferruginea, Chaenothecopsis pusilla, Hypogymnia pulverata, Leptorhaphis epidermidis, Ochrolechia gowardia, Phaeocalicium flabelliforme, Pseudephebe minuscula, Scytinium tenuissimum* and *S. teretiusculum*.

THE MAIL BAG

or why the carrier pigeons assigned to serve the lavish Corporate and Editorial offices of OMPHALINA get hernias

Dear FNL members,

Please check out our collections on MyCoPortal <http://mycoportal.org/portal/collections/misc/collprofiles.php?collid=62>

You will see that 1,816 collections for which photos exist now have links to those images. People can view the database information for each collection as well as its photo taken by Roger Smith at the foray. So far we have only four years' worth uploaded, but with time we hope to have all Foray NL collections available for scrutiny. Work to that end is progressing apace between your executive and the MyCoPortal Team.

Sincerely,

Andy Miller
Team leader

Folks, please note the ingenious way this system avoids having to update the photograph names. You can change the species names as taxonomic advances dictate, but the photo stays linked to its collection, no matter what one calls it, with no need to even name the photos.

Cheers!

a

Photo: Roger Smith

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