



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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... who eagerly invites contributions to Omphalina, dealing with any aspect even remotely related to mushrooms.

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#### COVER

*Hypogymnia pulverata*, North West River, Labrador. Photo: Troy Mc Mullin. More *Hypogymnia* inside!





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# Message from the Editor

Welcome to our *Hypergymnia* (and *Menegazzia*) issue. Like other bigger genetic overviews, this introduces you to a group of similar fungi, and gives you the resources to identify the species in the group. If your head is anything like mine, you are unlikely to remember anything 15 minutes after having read it. Hoping that every word sticks in the mind of the reader is not the aim of these reviews. Rather, they are intended as reference resources for your use in the future. If you have a way to file this material for later retrieval, then the next time you encounter *Hypogymnia* species, you can refer to it in your attempts to identify them. Because they are so common, you will learn to recognize members of this group very quickly by a few repetitive uses.

Some of the content of Omphalina is meant for your enjoyment or entertainment. A lot of it is meant to distribute information, some of it even accurate. Some of the information, such as this *Hypogymnia* review, is valid for a long time, and can be used over and over in the course of getting to know our fellow organisms on this Earth. Other information is time sensitive, like, for example, the information about our foray. This should not be filed away for later use, but rather should be acted on immediately.

Please read the notices pertaining to the foray in the Foray Matters column (next page). If you are contemplating participating this year, please register now, before the summer takes your mind elsewhere. Registration forms may be found in the last issue (downloadable from our website <www.nlmushrooms.ca>), or separate Forms can be downloaded from the same site. Also, please make sure you read the information pertaining to the foray in the last issue, in this and subsequent issues, and on our website.

For many, the foray is a pleasant outdoor weekend in the company of like-minded people, where they risk learning something about some organisms around them. This activity has meaning or value beyond the enjoyment of participants if the knowledge gained can be applied and made available to society at large. Michael Burzynski's description of Butter Pot Provincial Park (p. 4) is a small, but very tangible example of this phenomenon. A decade ago, Michael could not have added any mycological information to an overview of the Park. Such information just was not available. Thanks to the documentation of our activity, such an overview can now list species found there, state which are common and which are unusual, make a comparison with other regions, and even suggest reasons for these differences. This information has been gathered by volunteers, amateur and professional. Some of our scientific activities have received public funding support. If you look at the full picture of our scientific achievements, I'd say the public is the winner here, as this small investment has paid back in spades.

See you at the foray!

Sugues



Registrations have gone well, as one might expect with the foray so close to St John's, with about half the available places filled. This means that there are still plenty of places left for those who have not registered yet. If you plan to participate this year, please register as soon as you can. Once the summer is upon us, it tends to slip by very quickly, so do it now. A more self-interested reason for this plea is that it is much easier for the organizers to arrange things if final numbers are known, and it is definitely easier to pay our expenses once your cheques have been cashed!

# The Burry Heights **CAMP...**

... really is a **CAMP**. Camping is a somewhat rustic activity, to which you bring some of your own resources. Please bring your own bedding (sheets, pillow, blankets or sleeping bag) and toiletries (towels, soap, etc.). Please do not forget, because Burry Heights no longer has spare bedding available for a separate fee, as it did in the past. This lowers cost, permitting us to keep costs down as well. A bed and mattress are provided. **Faculty from away:** the organizers will provide bedding and toiletries from home for our invited guests, who travel from afar.

We have about 20 rooms at our disposal. With an anticipated registration of 60, there will be need to share rooms. Therefore, if you have some people in mind with whom you would like to share, please write this in the margin of your

## Butter Pot Park Mycoblitz

Our tradition to open the foray with a quick census of mushrooms in an adjacent protected area continues this year with a mycoblitz of Butter Pot Provincial Park, which is almost next door to the camp headquarters. See the following article for a brief description of the Park.

Please be at the **Park's parking lot Fri., Sep. 28, 2018**, in time to join in a planned **departure at 11:00 AM SHARP!** This will be a three-hour event, leaving for Burry Heights at 2:00 PM to allow time to process your finds, register and get ready for the evening reception/meal and talks.

### Registration

Registration begins on site Friday, from 4–6PM. A reception-supper will follow, with talks after.

#### How To Get There

Burry Heights Camp is on the Salmonier Line (Route 90 west from the TCH). For directions and a map, please go to the Burry Heights website: <a href="https://www.burryheights.com/how-to-find-us.html">www.burryheights.com/how-to-find-us.html</a>>.

See you at the foray!

Michael Burzynski, President

# Mycoblitz 2018: **Butter Pot Provincial Park**



Significant features of Butter Pot Provincial Park are

- 1. an array of well displayed erratics (massive rounded boulders carried from afar by ice and its flowing meltwater during receding glaciation),
- 2. a fresh-water marsh, (wetland of herbaceous plants making up a transition zone from terrestrial to aquatic habitats), and
- 3. a burn bald (rocky elevation denuded of topsoil and vegetation by hot fire that burned the organic matter in the soil to bedrock, allowing wind and rain to remove the ash).

The Park has an area of 2,833 hectares (28 km<sup>2</sup>). It was established in 1958, and is named for a prominent rounded summit (Butter Pot Hill, 303 m high). The area was traditionally used by hunters, berry pickers, trappers, and loggers, but not settled. Since it is only 36 km southwest of St. John's, it is heavily used as a summer getaway by people from the city. The area has cool summers with a high fog frequency, and cold moist winters. Trees do not grow large in this part of the province.

This part of the Avalon Peninsula is underlain by late Precambrian Era granite and related rocks, and by marine volcanic and sedimentary rocks, approximately 600 million years old. Numerous glacial advances between 2 million years ago and 12,000 years ago shaped the landscape of the park, and the most recent glaciation left massive erratics scattered throughout the area. Since the melting of the ice, the barren hills and lowlands have been covered by forest, bogs, and lakes.

Boreal forest blankets the park. It is mostly composed of coniferous trees (black spruce, balsam fir, and eastern larch), although white birch is also common. Soils are acidic, and the usual plants of treeless areas are sheep laurel (Kalmia angustifolia), Labrador tea (Rhododendron groenlandicum), rhodora (*Rhododendron canadense*), and blueberry (Vaccinium, several species). Hilltops in the park are bare or covered by treeless dry heathland, the consequence of a severe forest fire that burned away trees and organic soil in 1889. Exposure to strong winds and harsh weather slow the regeneration of trees. Wet lowlands and lake edges have developed into blanket bogs and sloping bogs.

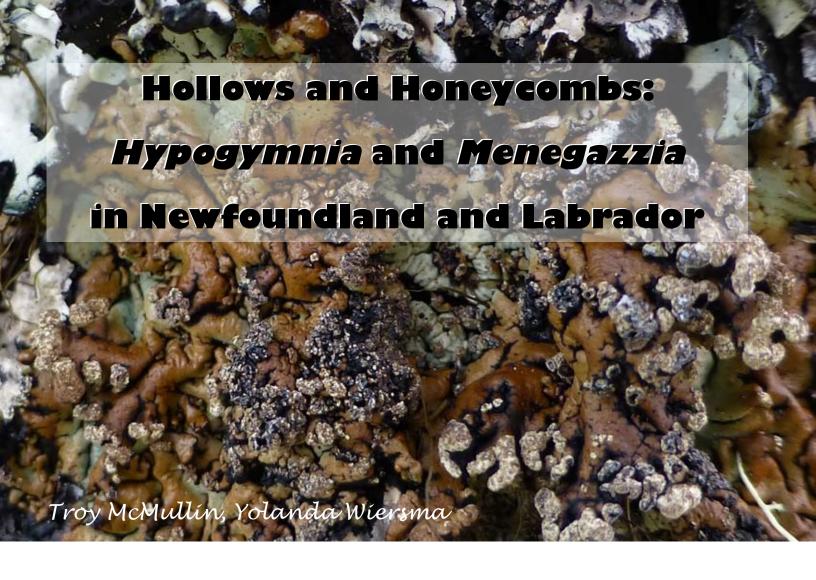
The park is home to native animals such as lynx, black bear, red fox, caribou, beaver, pine grosbeak, common loon, and willow ptarmigan, and to introduced species such as moose, chipmunk red squirrel, snowshoe hare, masked shrew, and ruffed grouse.

In 2006 and 2007 Butter Pot Provincial Park was the second most mycodiverse area surveyed, producing over 100 species, just a few behind Salmonier Nature Park. It was home to four species of Suillus, and two somewhat unusual species, *Neocudoniella radicella* (Figure 1) and Elaphocordiceps ophioglossoides (if you find it this year, please dig out the *Elaphomyces* as well!). Both Cantharellus enelensis and Tricholoma magnivelare are found on the Avalon Peninsula, in copious numbers in some areas, but white spruce does not thrive in the moist soil of Butter Pot Provincial Park, so that these and other white spruce partners are not common there. On the other hand, black spruce ekes out its living in poor and often wet soil, and there you will find species like Cortinarius huronensis (Figure 2) and C. sanguineus (Figure 3), not common elsewhere.









Hypogymnia and Menegazzia are two genera of lichens which are similar in appearance, in that they both appear inflated. They are the only foliose macrolichens with a hollow interior found in the province. Here we present images and a key to all the species in both genera that are known from the province. The key difference between Hypogymnia and Menegazzia is that only species in Menegazzia have distinct laminal perforations, which are the reason for the vernacular name of the genus, flute lichens. Two species of Menegazzia occur in North America, both found in Newfoundland and Labrador (NL). Hypogymnia, however, is speciose in North America (38 species), 7-8 but only nine are known to occur in NL. Hypogymnia subobscura is known from Quebec and Nunavut close to NL, and likely occurs in NL as well, so it is included here.

Hypogymnia hultenii and H. pulverata are the only two species in these genera in NL that are not hollow. Both have a solid interior (medulla), but still appear somewhat inflated. Hypogymnia hultenii was moved into Hypogymnia based on recent phylogenetic studies. It is distinguished by laminal soredia and honeycomb-like pits on its lower surface. Hypogymnia pulverata was recently discovered in Labrador. It is also has laminal soredia, but does not have honeycomb-like pits on the lower surface.

A key and species descriptions follow.

## Key to the Species of Hypogymnia and Menegazzia in NL

1a. Lobes solid, appearing somewhat inflated	2
1b. Lobes hollow, appearing inflated	3
2a. Lower surface with honeycomb-like pits	Hypogymnia hultenii
2b. Lower surface without honeycomb-like pits	Hypogymnia pulverata
3a. Lobes with distinct laminal perforations	4 (Menegazzia)
3b. Lobes without obvious laminal perforations	5
4a. Soredia mostly in a ring or collar around a hole on the end of short stalks or the main lobes	
4b. Soredia mostly in rounded convex solid mounds on the end of short s surface	
5a. Soredia absent	6
5b. Soredia present	7
6a. On soil and rock in Arctic and alpine environments; thallus usually brown of known from NL, but expected to be present	
6b. On trees in humid and coastal environments; thallus green-grey throughout	Hypogymnia krogiae
7a. Thallus brown or with distinct brown areas	8
7b. Thallus shades of grey to grey-green (note: may brown in areas when unhealthy)	9
8a. Soredia mostly on the lobe tips and powdery, rarely laminal and granular	•
8b. Soredia mostly laminal and granular, granular if on the lobe tips	Hypogymnia austerodes
9a. Soredia on the upper surface of the lobe tips	Hypogymnia tubulosa
9b. Soredia on the lower surface of up turned lobe tips	10
10a. Medulla PD-; lobes narrow and elongated, <1(-2) mm wide; lower surface the tips; interior ceiling dark brown to black	
10b. Medulla P+ red (physodalic and protocetraric acids); lobes broader and not lower surface without perforations near the tips, but perforations at lobe tips common; interior ceiling white to brown	s that do not have soredia are
11a. Medulla KOH-; interior ceiling white to brown; the black lower surface often extend thallus often with a lattice-like growth form	
11b. Medulla KOH+ red brown (3-hydroxyphysodic acid); interior ceiling usually white; the be extending up along the lobe edges; thallus often with a rosette-like growth form, not lattice	





# Hypogymnia austerodes (Nyl.) Räsänen.

Hypogymnia austerodes has a shiny pale to dark reddish brown thallus (particularly at the lobe tips), which probably is the reason behind the common name: the varnished tube lichen. It can be pale yellowish grey in the main body of the thallus, but the margins are nearly always mottled black and the tips are perforated.<sup>3</sup> It rarely has apothecia and the soredia are coarse

and brownish and found on the central part of the thallus and occasionally at the lobe tips. It is a member of the *H. austerodes* group, which includes *H. austerodes*, *H. bitteri*, *H. subobscura* (all found in NL). Other species belong to this group are known from western North America only.<sup>10</sup>



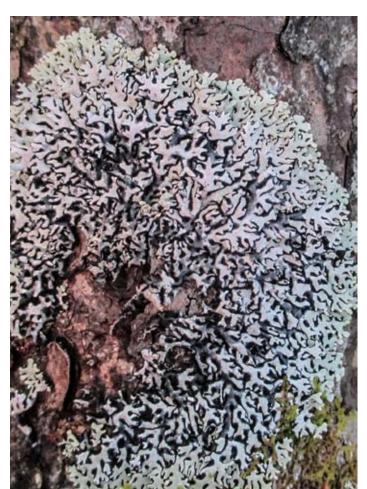
#### Hypogymnia bitteri (Lynge) Ahti.

A closely related species to H. austeroides, H. bitteri is distinguished by more powdery soredia (as opposed to granular ones on austeroides), hence the common name, powdered tube lichen (other sources refer to it as the bitter tube lichen). The soredia tend to be found on the lobe tips instead of the older part of the thallus. Both have a varnished appearance, especially at the lob tips. Both H. austeroides and H. bitteri are associated with conifers at high elevations.3



Hypogymnia hultenii (Degel.) Krog.

Hypogymnia hultenii is distinguished by having solid lobes (one of the two exceptions to the "hollows" designation in this group) and honeycomb-like pits on the lower thallus surface. It was recently brought into this group from the genus Cavernularia based on phylogenetic work.<sup>7</sup> It is found on conifers at low to medium elevations.<sup>11</sup> Note honeycomb-like pits on underside (lower).



#### Hypogymnia incurvoides Rass.

McCune et al. describe H. incurvoides as a "little-known Russian species" that they found in eastern North America. 12 While we know that many lichens have circumpolar and crosscontinental distributions, Hypogymnia appear to have some interesting patterns. Miądlikowska et al. suggested that there are distinctive biogeographic patterns within Hypogymnia, and that most speciation occurred after the separation of the continents.7 However, as with everything in nature, there are exceptions, this one perhaps being a key example. It was previously known from only one locality in Russia, until some undetermined specimens from this province and Nova Scotia were looked at more closely and discovered to be new to North America. It may have been overlooked because H. incurvoides is similar in appearance to H. physodes, the key difference is that H. incurvoides has holes in the lobe tips and axils which are readily identifiable with a hand lens and its lattice-like growth form. Other means of differentiating the two require chemical analysis.



Hypogymnia krogiae Ohlsson.

This is known as the freckled tube lichen due to the freckle-like clusters of pycnidia near the lobe tips (insert). It is strictly limited to eastern North America (at least so far as we know, see above), and is considered endemic to the Appalachians. It is the only non-sorediate species of *Hypogymnia* from eastern North America.<sup>3</sup> It is usually found on twigs and branches of conifers in more exposed, open forests.



Hypogymnia physodes (L.) Nyl. Syns.

This is one of the most common lichens in the province. It is known by various common names (Monk's hood lichen, hooded tube lichen, puffed lichen) perhaps reflecting the fact that the thallus can be variable in both shape (lobes can be long or short; the thallus can be appressed or ascending) and colour (usually pale greenish grey). A key feature is the upturned lobe tip, which bursts open into lip-shaped soralia, which resemble a hood (hence the name). It can be confused with *H. vittata* (see below for diagnostics). Although it is widespread here, in Europe it is often an indicator of air quality. Brodo et al. state that the Potawatomi used it as a cure for constipation.<sup>3</sup>

#### Hypogymnia subobscura (Vain.) Poelt.

This lichen is not yet known from the province but given it has been found in Québec and Nunavut,

it is likely to be here, most likely in Labrador. Known as the heath tube lichen, it is found on mossy heath, rock, or soil in tundra habitats, of which we have plenty in the province. It is darker in colour, appressed with a varnished appearance that resembles H. austerodes and H. bitterii (which are normally found on trees).3 Instead of apothecia or soredia it has tiny isidia (varying from spherical to club shaped) on the lobes.





#### Hypogymnia tubulosa (Schaerer) Hav.

This lichen is also fairly common on the island. It is usually fund on twigs of conifers, though also occurs on birch or alder. It is usually mixed in with H. physodes, and thus beginners can sometimes have difficulty distinguishing the two. It is one of the smaller species, though whether one is looking at a young H. physodes or H. tubulosa can be tricky without a hand lens. Hypogymnia tubulosa has soredia on the upper surface of the lobe tips instead of bursting from the interior of the upturned tips as with H. physodes.<sup>3</sup> The common name, powered-headed tube lichen, can help the observer remember how to distinguish it from the monk's hood lichen.

Hypogymnia vittata (Ach.) Parrique.

This one is also similar to H. physodes as it has soredia bursting from the lobe tips. The common



name, Brownish monk's hood lichen, also speaks to the similarity. They are often found together, most often on conifers, though H. vittata is less common. In the field, it can be difficult to distinguish them; H. physodes has more regular branching, but since H. physodes is so variable, a closer look is often needed. Hypogymnia physodes has a white medullary ceiling, which can be seen if you slice one open one and peer closely with a hand lens or dissecting scope. If unsure, then a chemical test is needed; H. physodes is PD+ red in the medulla while H. vittata is PD-.3

# Hypogymnia pulverata (Nyl. ex Crombie) Elix.

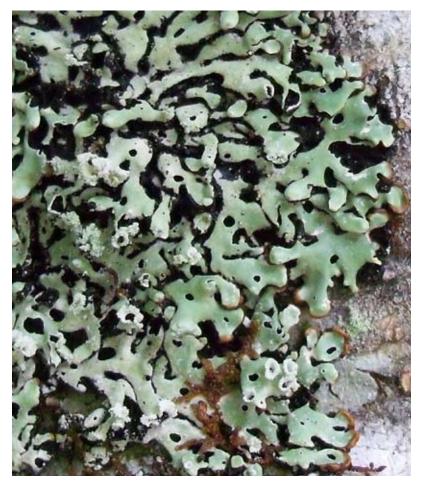
This is another member of the group that defies the contention that there is clear continental separation of species within this genus.7 Twenty-six individuals were found as part of the 2016 Foray, making it a first record of the species in the province, a finding which was described in these pages.9 Simply known as the tube lichen, it has solid, flattened lobes (thus, along with H. hultenii, it forms an exception to



being a truly hollow member of the "hollows" group), laminal soredia, and lacks pitting on its lower surface. It is widespread in Asia.<sup>13</sup> In Labrador it was found in three locations in the Happy Valley-Goose Bay area, always on the dead branches of live conifers.

# Menegazzia subsimilis (H. Magn.) R. Sant.

This species was only known from Hawaii until 1993, but is now known to be scattered on five continents, all within the Northern Hemisphere. 6 It has shiny, greenish lobes, with conspicuous perforations. Its common name is tragic flute. Records from around the world suggest that it can be found on conifers, deciduous trees and on rock in tropical and temperate regions. It is fairly similar to M. terebrata (next page), but is mostly distinguished by soredia mostly that occur in ring or collar around a hole on the end of short stalks or lobes on the upper surface of the main lobes.





Menegazzia terebrata (Hoffm.) A. Massal.

This greenish-gray lichen has smooth, wide, puffed lobes with large round holes in the upper surface (hence the common name of treeflute) with powdery soredia found in solid or closed hemispherical soralia on the ends of short stalks or lobes on the upper surface of the main lobes. It is usually found on deciduous trees.<sup>3</sup> The centre of the thallus is often lighter in colour or even showing signs of necrosis. It is found on both coasts of the continent and in coastal Europe <www.lichensmaritimes.org>. It is listed as a species of Special Concern in Wisconsin.

#### References

- Ahti T: Lichens. pp. 319–360. In G. R. South [ed.]: Biography and Ecology of the Island of Newfoundland. Monographiae Biologicae 48. Dr. W. Junk Publishers, The Hague, Netherlands. 1983.
- Thomson JW: American Arctic Lichens 1. The Macrolichens. Columbia University Press, New York, NY. 1984.
- Brodo IM, Sharnoff SD, Sharnoff S: Lichens of North America. Yale University Press, New Haven, USA. 2001.
- 4. McCarthy JW, Driscoll KE, Clayden SR: Lichens in four Newfoundland provincial parks: New provincial records. Canadian Field Naturalist 129: 219–228. 2015.
- McMullin RT, Wiersma YF: Lichens and allied fungi of Salmonier Nature Park, Newfoundland. The Journal of the Torrey Botanical Society 144: 357–369. 2017.
- 6. Bjerke JW: *Menegazzia subsimilis*, a widespread sorediate lichen. Lichenologist. 35: 393–96. 2003.
- 7. Miądlikowska J, Schoch CL, Kageyama SA, Molnar K, F. Lutzoni F, McCune B: *Hypogymnia* phylogeny, including *Cavernularia*, reveals biogeographic structure.

- The Bryologist 114(2): 392-400. 2011.
- 8. Esslinger TL: A cumulative checklist for the lichen-forming, lichenicolous and allied fungi of the continental United States and Canada, version 22. *Opuscula Philolichenum* 17: 6–268. 2018.
- 9. McMullin RT: *Hypogymnia pulverata* a new North American population discovered in Labrador, Canada. OMPHALINA 7(8): 17–19. 2016.
- 10. Goward T, Spribille T, Ahti T, Hampton-Miller CJ: Four new sorediate species in the *Hypogymnia austerodes* group (lichens) from northwestern North America, with notes on thallus morphology. The Bryologist 115: 84-100. 2012.
- 11. McCune B, Geiser L: Macrolichens of the Pacific Northwest. Oregon State University Press, Corvallis, OR. 1997.
- 12. McCune B, Ahti T, Duncan CM: *Hypogymnia incurvoides* (Parmeliaceae), a little-known Russian species discovered in eastern North America. The Bryologist 109: 80-84. 2006.
- 13. Nelson PR, Walton J, Root H, Spribille T: *Hypogymnia pulverata* (Parmeliaceae) and *Collema leptaleum* (Collemataceae), two macrolichens new to Alaska. North American Fungi 6: 1-8. 2011.

# The Bishop's Sketchbook









# THE MAIL BAG

# OR WHY THE PASSENGER PIGEONS ASSIGNED TO SERVE THE LAVISH CORPORATE AND EDITORIAL OFFICES OF OMPHALINA GET HERNIAS

Re: Polyozellus study

Congratulations! What a great paper! You have beautiful photos of this gorgeous group. I am very pleased we can name our collections to their correct species. They will be up in MyCoPortal very soon.

Thank you

Seanna Annis

Orono ME.

#### ERRATA—NOT QUITE

If you got an early version of the last issue (the foray announcement issue), it contained some errors. John Maunder wrote in immediately, correcting some of the slug identifications, including our commonest slug, *Arion fuscus*. Don't know why I wrote the wrong name there, but in any case, the errors were corrected. As a benefit of membership, the foray announcement issue was sent to members before its release to the general public, so this is the only issue that is not immediately released to the libraries for accession. As a result, the libraries got a corrected version If you would like to have a corrected version as well, please download it from our web page <nlmushrooms.ca>.

Not a lot of mail this time, but at least positive. Keep them cards and letters coming, folks.

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Wildlife Division

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Tuckamore lodge





