OMPHALINA

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Foray registration & information issue

Newsletter of FORAY NEWFOUNDLAND AND LABRADOR

Vol. VIII, No 3
May 25, 2017

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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OMPHALINA, *newsletter of Foray Newfoundland & Labrador, has no fixed schedule of publication, and no promise to appear again. Its primary purpose is to serve as a conduit of information to registrants of the upcoming foray and secondarily as a communications tool with members.*

Issues of OMPHALINA *are archived in:*

Library and Archives Canada's Electronic Collection <http://epe.lac-bac.gc.ca/100/201/300/omphalina/index.html>, and

Centre for Newfoundland Studies, Queen Elizabeth II Library (printed copy also archived) <collections.mun.ca/cdm/search/collection/omphalina/>.

Please address comments, complaints, contributions to the self-appointed Editor, Andrus Voitk:

seened AT *gmail* DOT *com*,

…who eagerly invites contributions to OMPHALINA, *dealing with any aspect even remotely related to mushrooms. Authors are guaranteed instant fame—fortune to follow. Authors retain copyright to all published material, and submission indicates permission to publish, subject to the usual editorial decisions. Issues are freely available to the public on the FNL website. Because content is protected by authors' copyright, editors of other publications wishing to use any material, should ask first. No picture, no paper. Material should be original and should deal with the mycota of Newfoundland and Labrador. Cumulative index and detailed Information for Authors available on our website.*

COVER

Tricholoma magnivelare, photographed in an unidentified location by Michael Burzynski. See p. 13 for details of photographic technique.

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CONTENT

Message from the Editor

Welcome to our Foray issue!

Yes, snow's gone, so it's time to think Foray again. As always, this issue contains Foray matters first, "regular" content later.

This year's foray is headquartered at Memorial University's Grenfell Campus in Corner Brook. Location in an urban centre allows housing at home for locals, so the event is expected to be very popular. This foray is a month earlier than usual, while notification, coming now, is a month later, so, if you are interested in participating, please register early. Not only does that ensure a place for you, but it also helps the organizers plan, if numbers are known early.

As you read in the last issue, our financial support has shrunk drastically, because most of our partners, and certainly their budgets, have been eliminated by recent government decisions. To remain alive, we need to scale back significantly (and may not be able to afford invited faculty in future years). Hence, the number of identifiers will be low, meaning that we have to be firm with the participant limit, to avoid making the event unpleasant for our guests and frustrating for participants. While we may not be able to accommodate all comers, we can at least ensure that it will be an enjoyable experience for all participants.

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Personal note. The leporid millinery of the ever-chameleonic editorial countenance suggests the photo may have been taken at Easter. It was. Habitat suggests an infirmary—again correct. Mortality came knocking with a heart attack. Thanks to expert care, it was diagnosed and treated with skill and dispatch, stents were placed and an unlimited cardiac future ensured. But, for a 77-year-old, nothing lasts forever.

This is year eight of Omphalina. I'd be happy to pass the reins on during this year. If you have an interest in trying your hand at newsletter editing, please make yourself known. Also appealing to those with a healthy interest in power, control, graft, perks, and the opportunity to unleash unbridled editorial tyranny. Should nobody step up, I shall finish the year and, if health and other circumstances permit, am prepared to put in a ninth. It's a blast, one I enjoy it immensely. But taking on a tenth year in one's eightieth year is beyond hubris, so I shall to step back Dec. 31, 2018. If no volunteer has appeared, I urge the FNL board to consider forced conscription: shotgun editing.

Imagine yourself, editing a cutting edge publication, which serves up new knowledge about our mushrooms 15 days after its publication (as on p. 12—in fact, faithful readers may even say they read this news on these pages three years before it came out…) Or even before the results are known, like the article on p. 20. A heady experience.

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This might be an opportune moment to plead for contributions to content. Sure makes it easier for the editor, and variety of writing is more enjoyable for the reader.

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Enough! Let's get our minds back on the upcoming foray. Register, and I'll…

… see you in August!

FORAY MATTERS…

The Corner Brook Foray

This year's foray will be in the Corner Brook-Humber Valley area. Our base will be Grenfell Campus, Memorial University of Newfoundland, where they are graciously allowing us to use labs, audio-visual rooms, and other facilities, and helping with other aspects of this foray. This foray—August 25-26-27—will be our earliest; usually we gather in September. This allows us access to the university's residences and other resources, which means that we are close to the facilities that we will be using. We do not regret the late season species that we shall miss, but rather, look forward to the early species, some of which we may never have collected.

Like last year's foray in Goose Bay, participants are asked to arrange their own accommodations this year—we think that there might be many people from the Corner Brook area who will stay at their own homes. For those of us coming from away, see **How to get there** on p. 10–11, and the list of some available lodgings on our website.

We are still in the process of adding our large collection of fungus and lichen specimens to the Grenfell Campus herbarium—now the collection's permanent home, so it is fitting that we will be based there for this foray.

Print the Registration Form on pp. 8–9. Our website <nlmushrooms.ca> also has a downloadable **Registration Form**, instructions on **how to get there**, available **hotel accommodation**, and other important **information**. Further notices or information about the Foray will appear on our website and on this page in future issues.

Michael Burzynski

The Corner Brook-Bay of Islands region

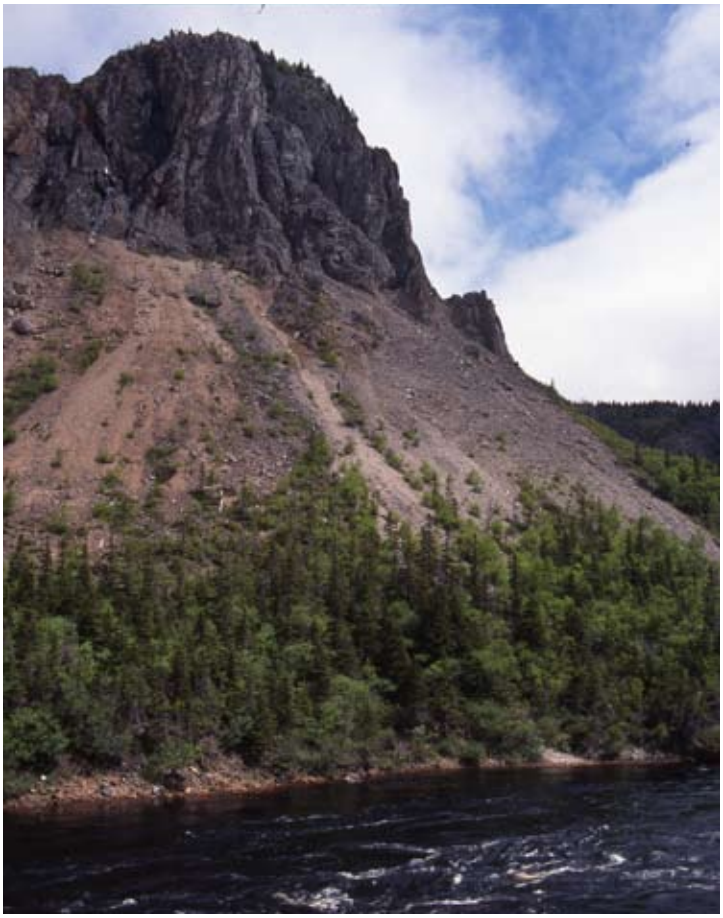
This year, Foray Newfoundland and Labrador is exploring the Corner Brook and Bay of Islands area, with a Friday afternoon blitz at Barachois Pond Provincial Park. This is a remarkably diverse landscape with some of the best growing conditions in the province. The area is referred to as the Corner Brook Subregion of the Western Newfoundland Forest Ecoregion. It reaches from St. George's Bay in the south to the southern shore of Bonne Bay in the north. The title banner gives a view over some of this forest out to St George's Bay from Erin Mountain in Barachois Park.

The oldest rocks in this area are the granite and gneiss of the Long Range Mountains, which run all along the west coast of Newfoundland. There are also outcrops of fossiliferous Cambrian and Ordovician limestone, which in places has been metamorphosed into marble. Water has eroded these carbonate deposits into crumbling cliffs, steep-sided gorges, and caves. Four serpentine plateaus (massifs within the Bay of Islands Ophiolite) line the coast. The southernmost is

the Lewis Hills, with the highest point in Newfoundland—Cabox at 814 metres above sea level. North of that are Blow-Me-Down Hills, the North Arm Hills, and the Tablelands in Gros Morne National Park. These contain rock from the Earth's mantle—high in magnesium, nickel, iron, and chrome—toxic to most plants; and deficient in calcium, nitrogen, potassium, and phosphorus—necessary plant nutrients. Serpentine soils are not ideal for plant growth, so these plateaus are very sparsely vegetated. The photo at the bottom of the last page shows the Blow-Me-Down massif, viewed across York Harbour of the Bay of Islands, from Blow-Me-Down Provincial Park. There are outcrops of Carboniferous ("Coal Age") rock, some of which contains remarkable plant fossils, such as those at Blanche Brook in Stephenville. There are also small occurrences of coal, and gypsum—an ancient marine deposit.

Throughout Newfoundland, the Ice Age that started about two million years ago brought a long series of glaciations that stripped away the vegetation and soil that once covered the Island, and removed many metres of bedrock. One of the major Ice Caps on the Island was in the Deer Lake-Corner Brook area, sending glaciers down valleys in all directions. The last glaciation ended, about 12,000 years ago, leaving denuded rock highlands, deeply carved valleys, fjords (such as the Bay of Islands and Bonne Bay), and deep deposits of boulders, gravel, and sand. Vast volumes of water from the melting ice carved deep valleys such as the gorge of the Humber River, polishing the marble cliffs. Marine currents move generally northward along the west coast of the island, shifting glacial sand and mud washed

Above: View of the North Arm Hills from The Blow-Me-Downs. Note brown serpentine rock. Middle: Caribou on the North Arm Hills. Lower: View of Deer Lake, at the end of the lower Humber River, from Mt Ignoble, a small rise in the Appalachian Chain.



Above: Humber River gorge. Below: Weeball Island in the Bay of Islands, from the mouth of Blow-Me-Down Brook. See back cover for a hatless picture of Weeball.

out of the mouths of rivers. These sediments have deposited in quiet areas to form sand spits, dunes, mudflats, and saltmarshes.

The west coast has the most striking topography on the Island. The escarpment of the Long Range Mountains forms a wall of rock that extends all the way up the west coast. Ancient river valleys draining the Long Range were greatly deepened by glaciation, and as the ice melted thick glacial deposits were left in the form of outwash, delta deposits, and terraces—producing well-drained soils that favour lush forest growth. Throughout the area there are steep hillsides clothed in forest. Fires, however are rare in this ecoregion, due to moisture from the ocean, and high precipitation year-round caused by the topography. High winds are also common as cold air pours off the hills, downslope through the deep valleys, reaching extremes in places such as Wreckhouse and Bonne Bay.

From a vegetation point of view, this is a fascinating part of the province. Its varied bedrock types produce soils that favour a wide range of species. Soils are thin in most places except river valleys and river mouths—it has only been a short time since the last glaciation. Several valleys contain the best agricultural land in western Newfoundland: the Codroy Valley, St George's Bay area, and Humber Valley all have deep, well-drained soils and some of the most favourable growing conditions in the province.

Serpentine and limestone soils are often the homes of unusual species—arctic-alpine plants and basiphiles (plants that do well in soils high in calcium and magnesium) that are adapted to exposed conditions, shifting soils, and low nutrients. They thrive there because of the lack of competition. Within this area there are unusual habitats such as marl ponds, unstable talus slopes, and cold, dark, north-facing cliffs. There are also some of the most productive and diverse forest stands on the Island. Protected valleys below 200 metres support spruce-fir-birch

forest. Along with the usual tree species there are also red maple, yellow birch, white pine, pin cherry, alternate–leaf dogwood, black ash, and trembling aspen—all of which reach their northern growth limit in the Bonne Bay area. Fires are uncommon throughout this region. Because of the marine and highland influences, drought conditions are rare. The greatest cause of small fires used to be the steam engines of the Newfoundland Railway—now long gone . On the tops of the highlands there are extensive rock barrens with typical Arctic species and tundra conditions—all within a few hours' hike of the ocean. Along the coast there are long cobble beaches and cliffs, and there are extensive salt marshes around Stephenville. There are also several large islands along the coast, some with seabird colonies.

Because there are so many very different habitats for plants, there are many different places that fungi can grow, and species that they can grow on or with. This should be an exciting Foray, and because of its accessible location, promises to be very popular. Advice: register early. I hope to see you in Corner Brook!

Below: Bottle Cove, Bay of Islands. Two of our three species of chanterelle should be fruiting in the woods around this area at the time of the foray.

FORAY NEWFOUNDLAND AND LABRADOR

Registration & Acknowledgement of Foray Participant's Responsibility, Express Assumption of Risk, and Release of Liability

Corner Brook, August 25 to 27, 2017

1. *Spaces are limited*, so registrations are accepted on a first-come first-served basis. We can only accept payment by cheque or cash. A Registration is only recorded when full payment and a signed Acknowledgement have been received. Please submit a completed Registration and Acknowledgement form for each participant.
2. Please print out both pages of this form, fill them out, sign, add your cheque made out to "**Foray NL**", and send to:

Very Important!
Before registering, please read the information about the foray posted on our website
www.nlmushrooms.ca

Geoff Thurlow
16 Hammond Drive
Corner Brook, NL, A2H 2W2, CANADA

Name: _____ Date _____

Street: _____

City: _____ Province/State:_____ Code:_____ Country:_____

Tel: (_____)_____-_____ e-mail: _____

Participation fee (in Canadian dollars)

Adult (includes registration fee, reception, two breakfasts, Saturday bag lunch, Saturday supper, Sunday lunch, workshops (except materials), lectures, trails, and other activities)..... $195.00 _____

Youth 13 to 17 pay 50% (Children 12 or younger participate for free)..... $97.00 _____

Database Team: Students - no fee; Non-student team veterans 50%* ..... $97.00 _____

Local Residents (for those staying in their own homes—this fee does *not* include Saturday and Sunday breakfasts or Saturday bag lunch) ..... $140.00 _____

This is a "Members-only" foray. Your membership is included in the participation fee. Membership lasts until the following year's foray. **This year, the participation fee includes meals, but does not include accommodations! Everyone is responsible for making their own housing arrangements.** Please see the accommodation list on our website. Places are limited in the Watercolour workshop, and will be allotted on a first-come first-served basis. If the session is full, your fee will be refunded.

Watercolour Workshop $42.00 for paints ($26) and book ($16), do not pay if you bring your own..... +_____

Book Purchase: I wish to buy _____ NL mushroom field guides @ $20.00 each..... +_____
This is a special members' price. We do not sell the book at the foray.

FUNGI Magazine: I wish to subscribe to FUNGI Magazine, five issues for $57.00..... +_____
As a service to members, ForayNL will place a block subscription, at cost, right after the Foray.

TOTAL ..... _____

Special needs/wishes:
Dietary or other needs .....

Expertise preference
Willing to co-lead a field trip ..... Willing to identify specimens .....
Wish to help in other ways (please suggest) .....

* Database team members with organizational support, please pay full fee. Contact M. Burzynski if you have questions: info@nlmushrooms.ca

I understand that during my participation in the events that together make up the Annual Fall Mushroom Foray, henceforth known as "the Foray" of MUSHROOM FORAY NEWFOUNDLAND & LABRADOR, INC., henceforth known as "FNL", I may be exposed to a variety of hazards and risks, foreseen or unforeseen, which are inherent in the Foray and cannot be eliminated without destroying the unique character of the Foray. These events include, but are not limited to: accommodations, identification outings, scientific presentations and investigations, meals, including as a food course mushrooms selected by participants, leaders, including FNL Organizers and Faculty, and travel to and from the outings and meals. The inherent risks include, but are not limited to: the dangers of serious personal injury, property damage, and death, henceforth known as "I&D", from exposure to the hazards of travel; moving in the wilderness, including uneven or insecure terrain, actions of fellow participants, wild animals or third parties, including hunters; mushrooms that may be poisonous, toxic, or cause unforeseen allergic or other adverse reactions in individuals, both independently and in conjunction with other substances, including wine or other alcoholic spirits. FNL Organizers and Faculty have not tried to deny or minimize my understanding of these risks. I know that I&D can occur by natural causes or activities of other persons, FNL Organizers and Faculty, animals, trip members, trip leaders and assistants or third parties, either as a result of negligence or because of other reasons. I understand that risks of such I&D are involved in adventure travel such as the Foray and I appreciate that I may have to exercise extra care for my own person or others around me in the face of such hazards. I further understand that the Foray may not have, or be readily accessible to, rescue, medical facilities, or expertise necessary to deal with the I&D to which I may be exposed.

In consideration for my acceptance as a participant on the Foray and the services and amenities to be provided by FNL Organizers and Faculty in connection with the Foray, I confirm that:

1. I have read these and any other terms, rules, information and conditions applicable to the Foray, made available to me directly or on the FNL website;
2. I will pay any costs and fees for the Foray;
3. I choose to participate in the Foray of my free will, being fully aware of the risks involved; and
4. I acknowledge my participation is at the discretion of the leaders.

The Foray officially begins and ends at the times and location(s) designated by FNL Organizers and Faculty. The Foray does not include carpooling, transportation, or transit to and from the Foray (including ferry) or trails during the Foray, and I am personally responsible for all risks associated with this travel. This is meant to include transportation provided by FNL Organizers and Faculty or participants during the Foray, including transport or carpooling to trails during the Foray and between the accommodations and the Foray trails.

If I decide to leave early and not to complete the Foray as planned, I assume all risks inherent in my decision to leave and waive all liability against FNL Organizers and Faculty arising from that decision. Likewise, if the leaders have concluded the Foray, and I decide to go forward without the leaders, I assume all risks inherent in my decision to go forward and waive all liability against leaders including FNL Organizers and Faculty arising from that decision.

This Agreement is intended to be as broad and inclusive as is permitted by law. If any provision or any part of any provision of this Agreement is held to be invalid or legally unenforceable for any reason, the remainder of this Agreement shall not be affected thereby and shall remain valid and fully enforceable.

To the fullest extent allowed by law, I agree to WAIVE, DISCHARGE CLAIMS, AND RELEASE FROM LIABILITY FNL, its officers, directors, employees, agents, faculty and leaders, from any and all liability on account of, or in any way resulting from I&D, even if caused by negligence of FNL, its officers, directors, employees, agents, faculty and leaders, or any other parties in any way connected with FNL or the Foray. I further agree to HOLD HARMLESS FNL, its officers, directors, employees, agents, faculty and leaders from any claims, damages, injuries or losses caused by my own negligence while a participant in the event. I understand and intend that this Assumption of Risk and Release of Liability is binding upon my heirs, executors, administrators and assigns, and includes any minors accompanying me on the outing.

I have read this document in its entirety and I freely and voluntarily assume all risks of such I&D and notwithstanding such risks, I agree to participate in the Foray.

Signed:

_____

Date:_____

If you are a minor (under age 18), your parent or legal guardian must sign this Agreement on your behalf.

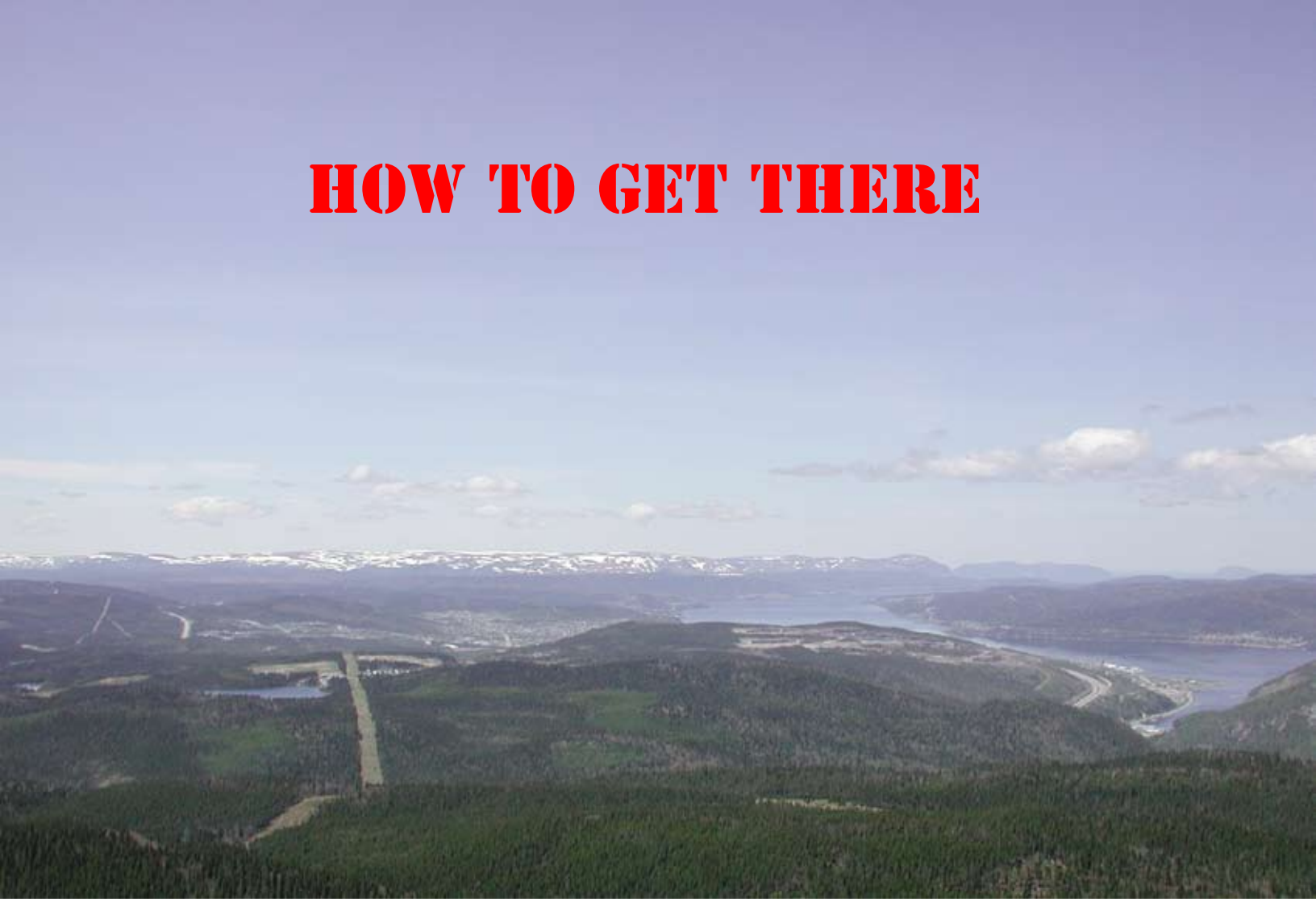
I hereby agree and consent to the foregoing **Acknowledgment** on behalf of the minor named here:

_____

Relationship: _____

Signed: _____

Date:_____



HOW TO GET THERE

By Road
Corner Brook is on the Trans Canada Highway (TCH) about 700 km from St John's and 220 km from (Channel) Port aux Basques.

By Ferry
There are usually two Marine Atlantic ferries a day between North Sydney in Nova Scotia and Channel Port aux Basques. It's best to book ahead at https://www.marineatlantic.ca/en/plan-your-travel/Schedule/. The ferry ride takes about 7 hours.

By Plane
The nearest airport is Deer Lake which is about 30 minutes drive from Corner Brook. There are flights from Toronto, St John's, Halifax and Goose Bay. St John's is the closest international airport. If you plan on renting a car it is recommended to book it well ahead. Taxis are available from the airports.

Public Transport
There is a bus once a day leaving early from St John's which follows the TCH to Port aux Basques and also one that leaves early from Port aux Basques to St John's. They stop in Corner Brook. For more information go to http://drl-lr.com/schedule-and-fares/

GROS MORNE NATIONAL PARK

BAY OF ISLANDS

CORNER BROOK

BARACHOIS PROVINCIAL PARK

Our pine mushroom identified…

Andrus Voitk

The true identity of our pine mushroom has now been determined with certainty. Initially we assumed its correct name was *Tricholoma magnivelare*. (In case you have no time to read further, it is.) At the time, this was the accepted name for the species of the "matsutake complex" found in North America, so it made sense. More to the point, the species was described from New York State by Peck. Over the years, the rule, "If Peck described it, we have it," has become our First Law of Mycology.

Our identification was first tested in 2011, after Becky Bravi, a master's student at UBC, asked for some specimens for her investigations of this complex. Becky's results showed that our specimens reacted to primers designed for *Tricholoma matsutake* from Eurasia, and not those designed for *T. magnivelare* common in BC. This suggested that the genetic make-up of our species was the same as that for *T. matsutake*. Looking at other work, we found the ground-breaking report by Chapela and Gabrelotto[1] that, indeed, there were three genetic species of the matsutke complex in North America, with examples of eastern NA collections that clustered with *T. matsutake* of Eurasia. Putting Becky's findings and the above report together, led us to conclude that the correct name for our species should be *T. matsutake*. We reported this change in Omphalina.[2]

One year later, Gro Gulden, a member of the 2012 foray faculty, challenged this concept. Looking at our pine mushroom specimens, she was adamant that this could not be the same species as the *T. matsutake*, which she knows well from her native Norway. Personally, I was not happy to have our position challenged—again!—especially because we had some phylogenetic support for our conclusion. However, when Gro said something, you ignored it at your peril. First of all, Gro is a recognized authority on *Tricholoma*: she worked with the genus for her master's thesis, and has continued to take an interest in it ever since. Secondly, she is very familiar with the *T. matsutake* found in Scandinavia, which had been confirmed to be genetically conspecific with *T. matsutake* of the Far East. Thirdly, thanks to many visits to her son, who lived in California, she is also very familiar with the pine mushroom found on the Pacific coast of NA. So, when Gro spoke, one did well to listen.

This discussion led to a study of our own species, which showed that the DNA of our species did, indeed, fall into a clade with those from Eurasia, and that collections from western NA fell into a separate clade—again reported in Omphalina.[3] Our phylogenetic tree was not all that different from that published by Chapela and Gabrelotto ten years earlier. Thus, it might have been reasonable to accept that the species growing here is the same as the Eurasian *T. matsutake*, and the western species would be *T. magnivelare*. Two things did not fit with that picture. First, *T. magnivelare* was described from eastern NA, not the west, so that if the western species was different from the eastern, it could not be *T. magnivelare*. Second, this picture did not take into account the opinion of Gro Gulden, the one person knowing the two species, who remained convinced that our species was not the same as the one she collected regularly in Norway. This led to the speculation[4] that if type specimens would be included in future studies, which studies might also make use of multilocus analysis, it might turn out that there were three species involved:

- *T. matsutake* in Eurasia
- *T. murillianum* in the Pacific Northwest, and
- *T. magnivelare* in eastern NA.

Well, I am happy to report that the speculation, which you first read on the pages of Omphalina three

years ago,[4] have now been confirmed. May 10, 2017, Mycologia published an online report by Trudell, Xu, Justo, Saar and Cifuentes, showing exactly the above (as well as describing formally a new species from Mexico, which was demonstrated by Chapela and Gabrelotto, but not described).[5] For us, it means now we know for sure which is the species of pine mushroom found in NL: *Tricholoma magnivelare*. Also, we have confirmed two important Laws of Mycology:

1. If Peck described it, we have it.
2. When Gro speaks, you do well to listen.

How did this state of affairs escape notice until 2017? After all, quite early mycologists began to suspect that the matsutake species in Japan and that on the Pacific Coast of North America might be different. Confirming this was difficult, because the regions were so far apart that there were very few Gros, familiar with both. Thus, one person alone could not write about this problem, while still obeying the Third Law of Mycology:

3. Only speak of what you know.

FNL president Michael Burzynski in a secret location in Newfoundland, taking a Tricholoma magnivelare *family portrait in the hopes that someday it might end up as a cover photo. Photo: Roger Smith*

In an effort to obey the Third Law and examine this question, two workers pooled their expertise: S. M. Zeller, familiar with the species around Oregon, and K. Togashi, familiar with the species in Japan. Zeller and Togashi concluded that the two species were, indeed, different.[6] To round out their report, they also included Peck's eastern *T. magnivelare* in their discussion. Microscopically it was similar to the mushroom from the Pacific coast of North America, so they concluded the two were conspecific, applying the name, *T. magnivelare*, to the western species as well.

As you can see from the perspective of our time, Zeller and Togashi began with good intentions and a solid plan to obey three Laws of Mycology, but by tacking on Peck's species, unfortunately ended up

sinning against all three. The First Law applies to NL, but they misapplied it to the Pacific Coast, where, much of the time, the First Law actually states, "If Peck described it, we don't have it." More ironic is that they took great pains to obey the Third Law by pooling their expertise with both species, but by including *Tricholoma magnivelare*, ended up speaking of a species neither knew. Now, to be fair, the concept of phylogeography, a southern species pump and differing evolutionary routes on the east and west coasts of North America, were not as well recognized in those days, so it might seem reasonable to expect a single species for the continent. Therefore, sinning against Laws One and Three might be forgiven them.

But they also violated the Second Law. You might ask, how could they listen to Gro in 1934, a time when Gro had not even been born? Of course, that Law does not mean Gro in person, but merely uses Gro as an example of a person who truly ***knows***. And, in this case, such a person did exist: William A. Murrill. Murrill rose to prominence in the mycological world of his day, to become the assistant director of the New York Botanical Gardens. He collected, studied and described fungi exhaustively, and was very familiar with the mycota of the Eastern Seaboard of the US. When he visited the west coast, he collected a white, veiled mushroom, which he recognized as very similar to Peck's *Armillaria magnivelare* (as it was known at the time), but familiarity with Peck's species allowed him immediately to recognize the western species as a different, even if similar-looking, species. He went to pains to point this out in his description of the species (now very appropriately known as *Tricholoma murrillianum*),[7] but his knowledge of both species was rejected in favour of overlapping spore measurements as critical identifiers.

Now the stage was set, and it was easy for subsequent workers to accept this opinion, erroneously perpetuating the concept of *T. magnivelare* as a western species. Most of these workers were taxonomists, expert in the correct classification of species, but not necessarily ***knowing*** both the eastern and western species. There are not too many people like Gro (or Murrill), who have an opportunity to be intimately familiar with similar members of a group, separated by great distances. Which is exactly why the Second Law of Mycology was created. Ignore Gro at your peril.

The title banner shows a rough concept of the global distribution of these species: *T. matsutake* in Eurasia, *T. anatolicum* near the Mediterranean, *T. magnivelare* in Eastern North America (yellow circle indicates approximate location of Peck's holotype collection), *T. murrillianum* on the Pacific Coast of NA, and *T. mesoamericanum* in Mexico. As you see, we are not an island. The course to learn the identity of our pine mushroom leads through straightening out the relationship of members of the complex globally. Our foray findings helped raise the question, and our specimens contributed to this study. Thus, when you collect mushrooms at our forays, you help identify our own mycota, and also contribute to the understanding of the relationship of these species globally.

Our pine mushroom, Tricholoma magnivelare *(left upper) and two of its look-alikes*. T. dulciolens *(right; photo: Michael Burzynski) and* T. focale *(left lower)*. Tricholoma dulciolens *has darker and more reddish-brown scales on the cap and stem, a more substantial veil ("boot", ring and cap scales), and a stem length greater than its cap diameter. Equally edible, it shares the same smell and taste. Often sharing the same habitat with* T. magnivelare, T. focale *is smaller, and has an unpleasant and mealy smell and mealy-bitter taste.*

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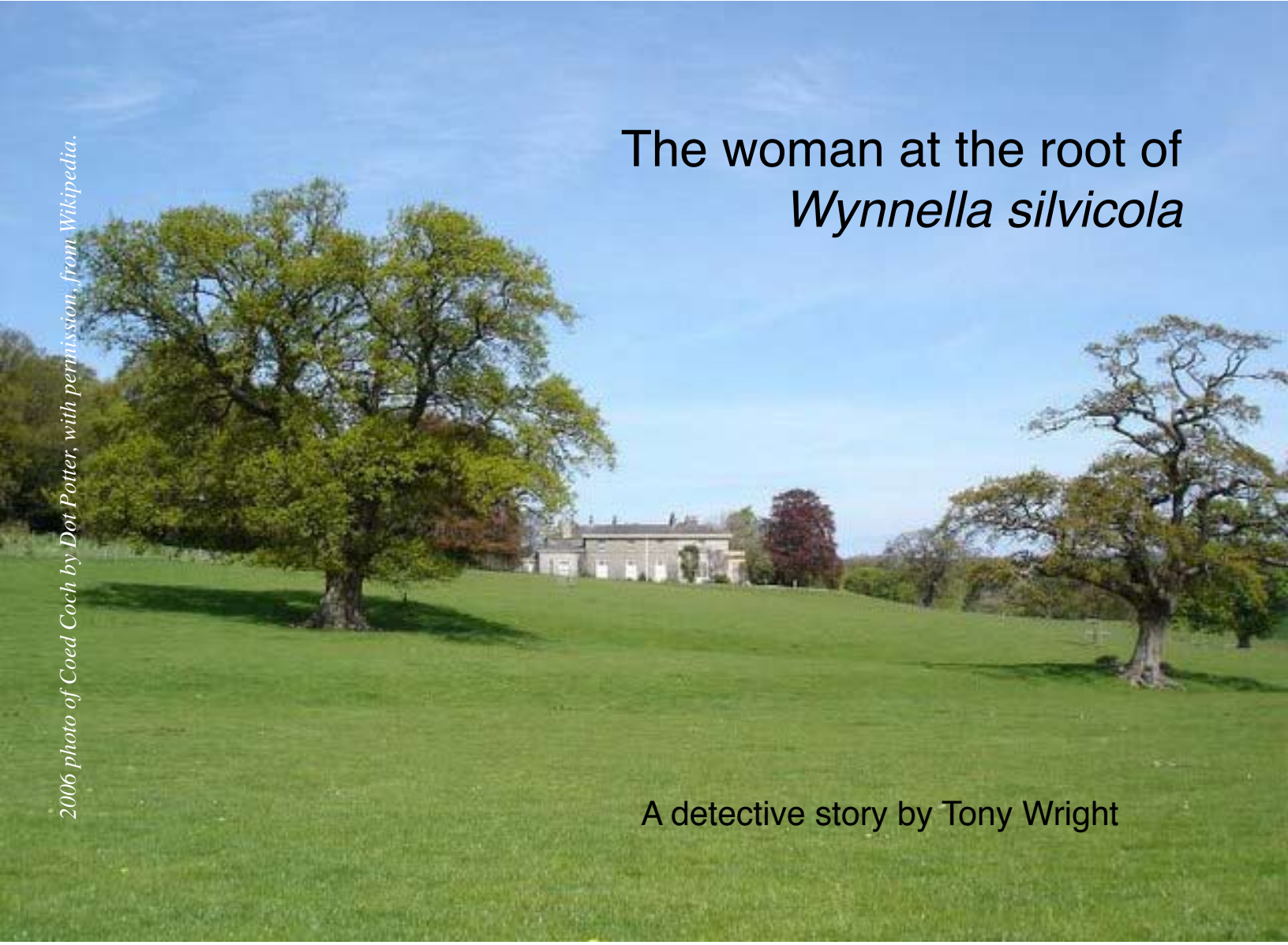

2006 photo of Coed Coch by Dot Potter, with permission, from Wikipedia.

The woman at the root of *Wynnella silvicola*

A detective story by Tony Wright

Michael Burzynski said in his article about *Wynnella* cf. *silvicola* in the last Omphalina that he would like to know more about the Wynne person that inspired this genus.

A challenge set for me translates, sometimes, into a challenge met by me. This one was surely meant for me as in 2009 I identified a photo of fungal specimens collected by a colleague near Toronto, as *Helvella silvicola*, a synonym of *Wynnella silvicola*. I did no microscopic work, riskily identified it based solely on the photo, and said then that it was named after a Welsh collector, Mrs Lloyd Wynne. Perhaps I was wrong with the ID, but perhaps I can make potential amends by finding out more about her.

The Reverend M. J. Berkeley noted in naming the genus *Wynnea* in 1867 that he dedicated it to Mrs Lloyd Wynne "who has made an especial study of the Fungi of Denbighshire". Denbighshire is in the far north of Wales, and is now part of the county of Clwyd. Mrs Lloyd Wynne had fungal dealings with, and sent many of her specimens to, the Reverend Berkeley and thus many are now in the fungarium at Kew, where the collector is identified with the words "Coed Coch", the estate in Denbighshire where Mrs Lloyd Wynne lived. When Boudier created the genus *Wynnella*, presumably he thought the species looked like smaller species of *Wynnea*, therefore giving it a diminutive name, *Wynnella*. In other words, *Wynnella silvicola* is not directly related to Mrs Wynne, but a derivative of the honour.

According to Wikipedia, Coed Coch (rough translation: red woods), the estate of the Wynnes (title banner), was passed down the male line until the death of the last, passing then to his half-sister. She began a famous Welsh mountain pony stud farm there, and for 30 years it also functioned as a boys' preparatory school. Coed Coch is now, once again, a private home.

Who was this Mrs Lloyd Wynne? What was her first name? All contemporaneous writings address her as "Mrs Lloyd Wynne"; to do otherwise would be unseemly. Although the custom of the day, it had no legal standing, so search of legal documents might reveal the elusive name. The Wynne families of Coed

THE HEREFORD FUNGUS FESTIVAL

For the high-resolution reprint, as well as the transcription of the account of the Hereford Fungus Festival (next page), both originally published in The Graphic, we owe a debt of thanks to Oliver Tomlinson and the Imperial Press of London, England

Photograph of the Coed Coch mansion ca 1885 (photo: John Thomas; presently in the National Library of Wales; image in the public domain), more as it was in the day of Mary Wynne, and the Hereford Fungus Festival.

Coch were clearly wealthy and well connected land owners and fortunately kept very good records, some of which are accessible online; it was not too difficult to ascertain that John Lloyd Wynne (1776 – 1862) married Mary, eldest daughter and co-heir of John Holland of Teirdan in the parish of Llanelidan, Denbighshire.

Many records of the day refer to her, or praise her for her enthusiasm and knowledge as a mycophile—of course, always as Mrs Lloyd Wynne. When the Great Hereford Fungus Festival took place in October 1874 (prvious page), the Herefordshire Woolhope Club reported that in 1868 it had begun to take up fungal pursuits with the London Royal Horticultural Society. Read the full Foray Report, below, with its reference to Mrs Wynne.

The lady in the bottom right corner of the cover illustration is our Mary Wynne.

THE GREAT HEREFORD FUNGUS MEETING

It is now six years ago since the Herefordshire Woolhope Club and the London Royal Horticultural Society began to take up with fungus persuits. The Herefordshire Club has kept itself well to the fore from that time to this. The yearly meeting extends over a week, and during this time the woods and pastures for many miles round Hereford are ransacked for fungi of all sorts.

As there are many competent botanists among the excursionists there is no fear of mistakes being made as to the species gathered, which this year were displayed many thousands in number, and with the names all attached, in the large room of the Green Dragon Hotel.

During the dinner *Boletus edulis* and *Lactarius deliciousus* were served in large tureens, together with a luxurious soup made from innumerable specimens of *Coprinus comatus*, kindly supplied by Dr. Chapman.

Dr. Bull, of Hereford, whose far-seeing eye never errs, takes immediate supervision of the fungi consumed during this week's "foray."

Our illustrations represent the common incidents of these meetings. This season the club was handsomely entertained by the Messrs. Fortey, of Ludlow, whose porter's portrait we have sketched.

The President of the club is the Rev. James Davies, of Moor Court, the great classical scholar, the fatal accident to whose "mushroom" we have also illustrated. A "camera lucida" was put to various foreign uses during the foray, and the gentlemen at the gate are gathering *Agaricus ulmarius* from a high branch of an elm; many of these fungi are now well known under English names as the "Vegetable Oyster," the "Vegetable Beef Steak," &c., according as the varied flavours of the fungi more or less resemble molluscs, meat, &c. The giant puff ball shown in our illustration is one of the most highly esteemed of all fungi, **and Mrs. Lloyd Wynne, of Coed Coch, is known personally or by repute to every fungologist in the world**. Considerable discussion has of late taken place as to the so-called "molar theory" of some botanists, which theory attributes the formation of "fairy rings" more or less to the burrowing of the mole,‹a theory which will not hold water.

Not the least interesting event of this last meeting was the presentation of a handsome box of silver plate to the artist who has drawn and engraved our illustration, every one of the forty seven pieces having a different sort of fungus engraved upon it, and the box inscribed, "Presented by the Members of the Woolhope Club to Worthington G. Smith, F. L.S., in pleasant memory of Fungus Forays; assisted by his experience, illustrated by his pencil, and chronicled by his pen."

The Bishop's Sketchbook

White and lilac inocybes II

Andrus Voitk
Brandon Matheny

Why not publish an article about the difficult life of to-day's taxonomist, based on facts (i.e. a real life example)?

UK

Quite often I get e-mails like the above, with suggestions for an article or topic to be covered on the pages of Omphalina. Immediately I fire off my prepared standard answer:

Great idea! Thanks a lot. Do you think you could prepare a manuscript or outline on the subject? I should really appreciate it, and am very willing to help you with this, if you wish.

Needless to say, I never hear back from the correspondent, at least about suggestions for content. Ever.

However, this time the same in-box also contained a preliminary report from Brandon Matheny about our lilac and white species of *Inocybe*. You'd swear there was some collusion, because the phylogenetic tree Brandon sent (Figure 1, next page) looked like it was made to order for a discussion of this very topic. This looked interesting, so I asked Brandon to team up for a try. You may remember the title banner from 2 ½ years ago (Omphalina vol. 5, nr 10, November, 2014), when we sent our lilac (*Inocybe* cf. *lilacina*) and white (*Inocybe* cf. *geophylla*) inocybes to Brandon. Well, 2 colours ≠ 2 species! av

Let us look at this tree (next page), to see what we can learn. First of all, the bright cyan panels mark specimens sent from NL. Ignoring the cyan, the first thing you see, is a profusion of separate clades. There were more, but we pruned some and cut off the rest. This is the work of somebody trying to make a family tree for all the inocybes in the world. This small segment of the tree shows the species around *Inocybe geophylla*. The next thing you see, is that even after ignoring the bright cyan green panels, there are several colours. Clearly, the species that branched off here have genes that make them colourful. If you look a bit closer, you will see that the whole group splits into two main branches: all the lilac boxes arise from the upper branch, and most of the white boxes from the lower.

We added the colour panels and circled L(ilalc) and W(hite) numbers. How did we know the colour of the mushrooms? Largely, we just guessed. Anything identified as "lilacina" should be lilac. *Inocybe geophylla* is considered to be white, so anything with that identification got a white box. Now, you may be confused: how can so many different species all have the same name? Easy: this is not a final, finished and polished tree. It is an honest working tree that people trying to identify all the clades and species use in the beginning of the process. Many of the identifications are not theirs, but were made by the people collecting the specimens in the field. Going by colour only, there may be just a lilac and a white species, but separating them genetically, we see that there are many more.

In addition to using known names given in the field, pet or code names are also used for unknown species that seem to share common characters. Look at the pink boxes. Two are called "geopink". Of course, there is no such name. It is easy to guess that these are specimens that looked like *I. geophylla*, but instead of being white, were pink. But note the surprise: pink geophyllas found in Washington State, for example, turned out to be split among two different genetic species, relatively distant from each other. "Pudica" means bashful or chaste, but is also used to denote pink, based the scientifically proven fact that it is the bashful who blush in the most delicate of pink hues.

How does this working tree illustrate the difficulty of current taxonomy? After all, if you have the equipment and know how to use it, is it not straightforward to make such trees? The answer, in a way, is, yes. Everything requires know-how and ability to solve problems, but once you master that, you can, indeed, produce such trees with relative ease. Exciting a few decades back, just like all rocket science, producing phylogenetic trees has become somewhat routine and standardized. But, that is molecular study, not taxonomy. Similar advances have not taken place in taxonomy.

For example, let us consider the six lilac species. The work of the phylogeneticist is over. But the work of the taxonomist is just beginning. What are their potential names? There are over 1,500 legitimate taxa in the genus *Inocybe*. Of these, over 20 have a name made up of the root for either lilac or violet, so these are all potential candidates. But the taxonomist must know all the remaining 1,480 plus species as

Figure 1.

Tree-in-progress, based on a combined analysis of

nLSU-rRNA & rpb2

gene sequence data.

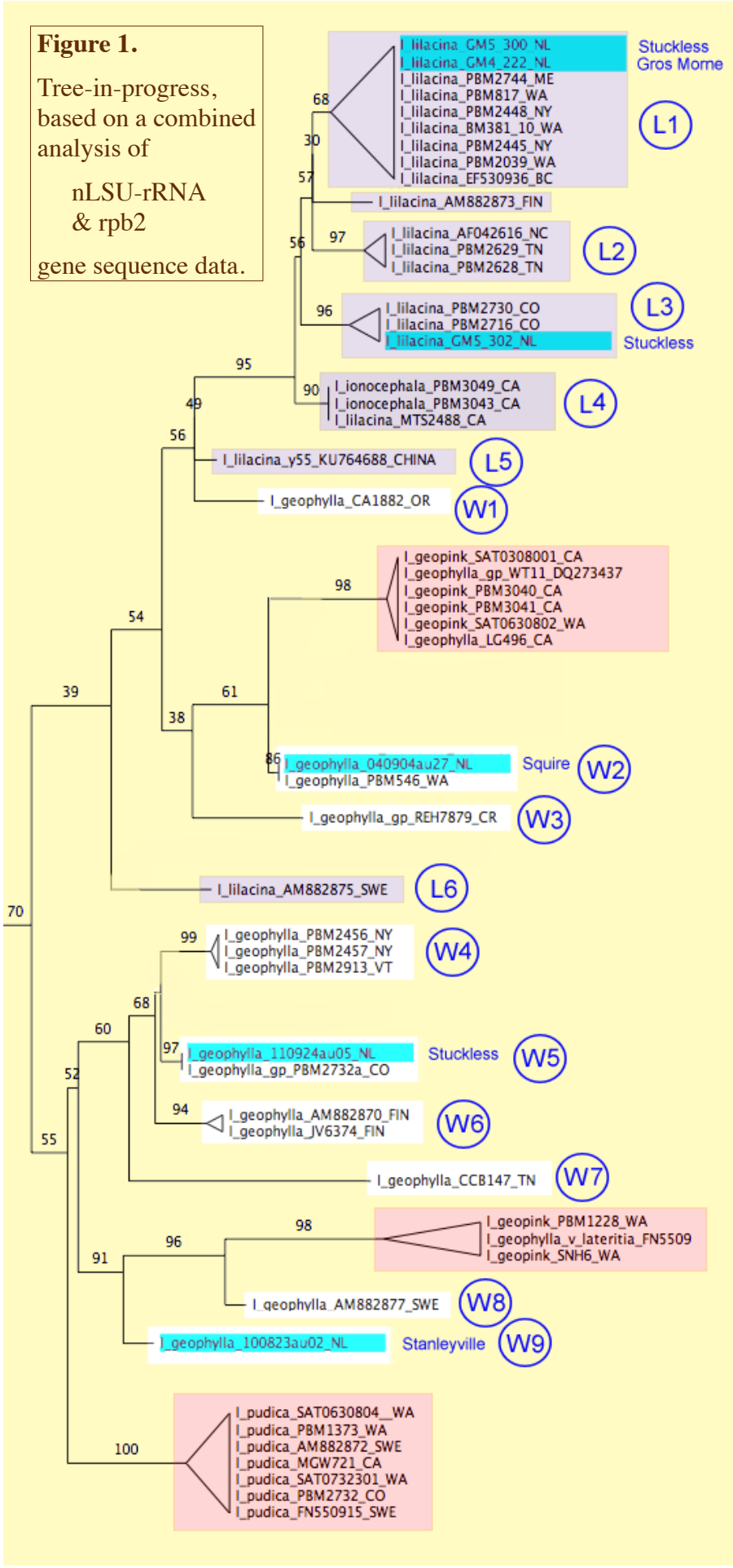

Figure 2. Violet Inocybe *species: L1 above, L3 below.*

well. Just because a species is named, say, *Inocybe brevi-*, *longi-*, *lati-*, or *angustispora*, does not mean that it is not lilac in colour. Once the taxonomist has identified all taxa with lilac-like colour, she needs to study all their descriptions to learn which might fit with her species. That means she needs to be very familiar with all the six species identified in Figure 1. It is not enough to identify the clade, but she must really know the species, its range of appearance, distribution, and its habits, in order to compare it to the available descriptions.

Most of the descriptions, especially the old ones, will turn out to be very vague and sparse of detail. She will discover that most of the old taxa will not have useful, or any, type material to compare or sequence for a DNA match. She may have to collect similar species from the type region in order to learn what species was likely meant in the original descriptions. To hunt up all these and compare to her six, and then decide which fits with which, is a daunting task, requiring a lot of time. Only when she has done all that, can she decide whether she has a new species, and describe it as such. Those she has been able to match to older taxa with no useful type material will require redescription and retypification in order to stabilize the system.

Then, this is all repeated for the pink, white, gray and endless brown species. This scholarly detective work involves a lot of pure slogging. It was ever so much easier when you could look at a purplish-looking *Inocybe* and conclude it is *I. lilacina*. Our greatest respect for taxonomists with the patience and dedication to do this exacting work. But now, let us wish them well, leave them to their work, and take a short look at what this working tree can tell us about our own species.

First, it seems we have a relative rich diversity of species in the group around *I. geophylla*: six specimens and five species. That suggests that this may be an inadequate survey: more collections need to be sequenced to learn whether we have more species and their relative abundance. The NL collections all come from the west coast of the Island. Much wider sampling is required to identify distribution differences. Investigators primarily interested in global diversity may be content to document one representative of each species. Those interested to learn the funga of their (or any) region, need many collections to understand the pattern and behaviour of the species in their local setting.

Next, you notice that all but the singleton (W9) seem to have a transcontinental distribution: the same species has been documented from the east of the continent (NL), and from significantly different habitats in the west.

As you see, we can learn a lot from such a tree, even though it is a working copy. We know several things about our species, and know what needs to be done

to learn more. The things we do not know, are their names. For that we need a dedicated taxonomist. BM, finished with the phylogeny, put on his taxonomy hat and is now tackling that difficult field.

The last thing we should do, is take a look at our five species, to see if we can find any useful distinguishing characters between them. Figure 2 (previous page) shows the two lilac species. On the basis of one photo of each, we can claim no convincing macroscopic distinguishing characters. Sequencing more collections, with good photos and a careful record of the habitat, might reveal differences not evident here. Also, we have not examined them microscopically yet—significant differences may be found there.

Figure 3 shows the white species. As you can see, these three all look significantly different from each other in terms of colour, shape and cap texture; all seem to grow in a conifer forest, except W2, which seems to grow with birch.

When AV collected these mushrooms, he did not believe that they were all the same species. Because the size and white to pale colour were the most obvious things about them, he assigned them to *I. geophylla* by default. As you can see, others have made the same identification with these same species, probably no more convinced than AV. There are more taxa of *Inocybe* with a reference to white in their name than to lilac, demonstrating how little we know the genus. Studies like this may eventually lead to a better understanding of the genus in our province and out.

UK, thank you for the good idea.

Figure 3. White Inocybe *species: Top down: W2, W5 and W9.*

THE MAIL BAG

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

Editor here, reporting on mail this time, instead of reproducing individual letters. As expected, the **In memoriam** editorial drew many comments. And, as expected, none of them favouring recent government decisions, many angry, but none using foul or offensive language. A few thank yous for speaking up. Apparently many people feel that they may be at risk if they speak their mind. Amazing, how many citizens of this democratic and free land feel disenfranchised and muzzled. And two letters from the US: one of them chagrined that the writer had always considered Canada an option, if conditions in his country became unbearable for him, but on reading this, would have to reconsider his options.

What we did not get was an answer whether such material was offensive in an otherwise more pastoral and contemplative publication. But that is fine. I have no plans to repeat this sort of thing anytime too soon. Hope nothing comes along to make me eat my words.

•••

On a much more cheery note, a brisk response to the *Wynnella* article. Interesting, because unexpected. Among the expressions of interest were several offers to send specimens, including from past faculty members Dave Malloch and Teuvo Ahti. Many thanks to all. Some specimens have already come along for sequencing, so we may find out something yet. Very encouraging to see this response, thank you to all who wrote and offered help.

And among those we must surely count Tony Wright, who pursued the Wynne of *Wynnella*, as you saw on the past few pages. Again, many thanks.

And, yes, they are finally out! First morel sighting near our place, May 18. Also heard some woodcock same week. Spring's here—nice to be around to see it come.

BOTANICAL ART SOCIETY OF NEWFOUNDLAND & LABRADOR | BASNL

Glynn Bishop writes in to tell us that he has been involved with the formation of the **Botanical Art Society of NL**. Anybody with such interests is invited to join. Write <info AT botanicalartsocietynl DOT com> or feel free to ask Glynn <fozmos AT gmail DOT com> for details. For more information about aims, meetings, trips, exhibitions & membership, please explore the website:

<www.botanicalartsocietynlcom>.

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  - Gros Morne National Park

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