OMPHALINA

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Newsletter of FORAY NEWFOUNDLAND AND LABRADOR

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Sept 2, 2018

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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seened AT *gmail* DOT *com*,

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COVER

White chanterelle, Central Newfoundland, 15 Aug, 2017. Presumably a pigmentless form of *C. enelensis*. See inside for preliminary report.

There is still time to look for this morph this season. Should you find some, please let us know with date, site and photo, if you can.

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CONTENT

Message from the Editor

Well, here is the last issue before this year's foray. There are very few places left, so if you are interested, please act quickly. Registration Form available on our website.

As always, foray-related matters first, then regular content. For foray information, please also check our website, as well as the last three issues, which can be downloaded from there.

Now, dig in and find out about our white chanterelles. I wanted to get this out while the season is still going on, so that you could keep your eyes open for some.

Then the *Sarea* story to keep you aware of this beautiful, if small, genus, much more common than I thought, once I began to look for it. They may not like the summer heat, but my guess is that you should find some again during the foray. Use a loupe to look!

Our two newly described amanitas should also be fruiting during foray time. Finding them would extend their known range in this province. Should you see one, please note what tree seems to be the host.

See you at the foray!

FORAY MATTERS…

SEP. 28–30, 2018
BURRY HEIGHTS, SALMONIER LINE

The Avalon Suillus Foray

A few places left, so please register while there still is room.

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 need to share rooms. If you would like to share a room with somebody, please write this in the margin of your registration form.

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.

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**! The Park is closed that time of year, but staff will open the gate for us at 10:00 AM. So, do not arrive at 8:00! It 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

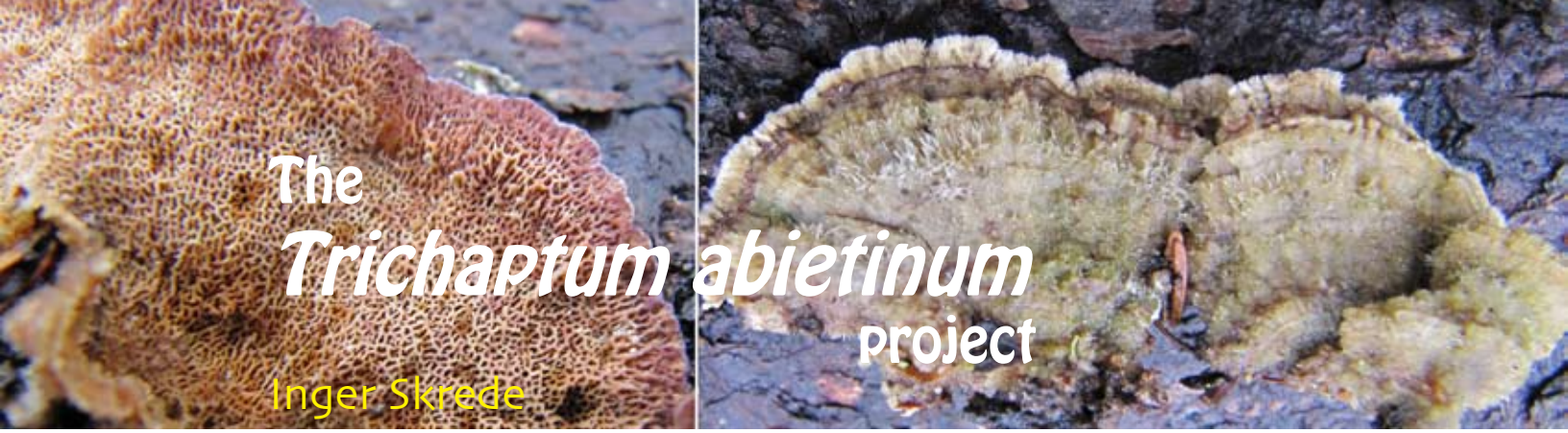
Burry Heights Camp is on the Salmonier Line (Route 90 west from the TCH). For directions and a map, please go to the Burry Heights website: <www.burryheights.com/how-to-find-us.html>.

Trichaptum abietinum project

Please see pp. 4–5 for information about this foray activity.

See you at the foray!

Michael Burzynski, President



The *Trichaptum abietinum* project

Inger Skrede

Please help us with sampling the bracket-fungus *Trichaptum abietinum* from North America during your foray this year.

I am a researcher at the University of Oslo, Norway, involved in a new project about reproductive barriers and speciation in fungi. We have selected *T. abietinum* as our study organisms. It is plentiful, easy to recognize, collect, air-dry, and ship. It is used to drying in sun and wind, and sporulates again after rehydration. Therefore, as long as we air-dry the specimens without heat, they will make new spores after rehydration, at least for a while. Because of time limits and because the species does not survive long in culture, we need this year's specimens for these studies.

Inger Skrede
University of Oslo
Post box 1066 Blindern
0316 Oslo Norway

Almost all studies of speciation mechanisms have been done with animals and plants. We plan to investigate how species emerge in fungi. In North America two overlapping inter-sterile populations of *T. abietinum* have been reported, both partially fertile with the single European population. We will use genomic analyses and mating experiments to understand the genetic basis of reproductive barriers in this genus, and investigate its evolutionary history. To cover the range of this widespread and common species we need for your help.

Please make 10 individual collections of *T. abietinum* within 1 km^2. Each collection should contain up to 10 (at least 3) individual brackets or a cluster about 3 × 3 cm, and should come from different logs, OR at be least 2 m away from the closest group, if on one log. Each individual collection should be placed in a separate small paper bag, which should be left to dry at room temperature (a window sill is great). DO NOT put the paper bags in plastic, as the samples will rot. Please ship them in paper envelopes to the address in the central box. If in paper bags or envelopes, they need not be bone dry for shipping.

Ed comment: This is a highly significant project, and we are very pleased to help; our foray is the prefect tool for such activities. Foray veterans know that we have participated in at least one such project every year. We collect the specimens anyway, but if it is announced in advance, many more collections of the species of interest come in. Although the protocol is not complicated, even the simplest projects turn out best if one person takes responsibility for the collections.

This year you can collect twice as hard, because two people have agreed to assume joint responsibility for ensuring proper databasing, photographing, drying and shipping of these collections, also making sure we retain a copy in our herbarium. One is **Henry Mann**, and the other **Bruce Malloch**. Any questions should be referred to either. You can process your collections in the normal way, and they will catch them, or you can bring them immediately to either. See photos next page.

Part of the reason to feature Inger's address so prominently is that this need not be reserved for the foray only. We could sample a much wider representation of the province if as many interested naturalists as possible collected a few specimens when out on their walks in the woods. Dry them as per directions and mail (air mail) at the end each month. However, in that case, please put a slip of paper into the envelope of each collection, giving the date, place, coordinates (most cell phones and many cameras give these), substrate (the tree, or at least if coniferous or deciduous) and name of collector. And your e-mail for questions.

A smattering of photos by Henry Mann (mostly).

Moist ones have colour, often with green algae on top, but when dry, they form clusters of shrivelled, whitish brackets, but even then the underside should show maze-like pores. Individual brackets fuse with time, but on vertical surfaces they usually retain some degree of individuality; on horizontal surfaces, like the undersides of branches, or especially logs, they may fuse to form an even carpet of pores, without evidence of caps at all, almost. Often they have a purlpe edge, thought to indicate active growth. If not apparent from the top, it is often visible on the hymenial side (the inferior surface). If the hymenium is arranged in radial lines, almost like gills, it is *T. laricinum*, a species usually seen in higher altitudes and latitudes. *Laricinum* refers to *Larix* (larch) and *abietinum* refers to *Abies* (fir), but they do not speak Latin and grow on whatever conifer suits their fancy. As they age, the walls between pores break down, so that old specimens look like they have teeth.

The species is so common that we have never discussed it on these pages! The closest is Sir Leif Ryvarden's review of *Trametes* (Omphalina 5(7):3).

Trichaptum laricinum
Photo: Maria Voitk

Come to the foray in style!

Wear an NL Tee

This shirt is produced by FNL to celebrate our new chanterelle, *Cantharellus enelensis*, named for our province and identified based on specimens collected at our forays.

Features a reproduction of a new watercolour by Glynn Bishop, illustrating the newly-named NL chanterelle (see Omphalina vol. 8, no 4, June 2017).

Available in forest green or sky blue (insert), Gildan 100% cotton, sizes S to XXL.

Cost $25.00 plus shipping.

To order, please contact Glynn:

1856 Topsail Rd, Paradise, NL, A1L 1Y7

709-687-7604 (daytime)

709-781-1382 (evening)

fozmos AT gmail DOT com

White chanterelles of Newfoundland & Labrador

Preliminary report

Greg Thorn, Bill Bryden, Andrus Voitk

After we studied the chanterelles of NL, we shared our findings with the scientific community.[1] More importantly, we also updated our readers about the three species of *Cantharellus* found in this province, including, of course, our commonest chanterelle, the previously unknown species *C. enelensis*, named after the province.[2] That second article resulted in six e-mails with photos attached (five from here and one from the USA) informing us of an uncommon, completely white chanterelle in the province. You can believe our eagerness to see this exciting find! Initial finds were very rare, limited to one area on the Avalon Peninsula, but over the years it had been encountered a bit more frequently, found in several other areas, and recently seen for the first time outside the Avalon: Eugene Kean discovered white specimens in central Newfoundland. It certainly paid to inform the local population of our findings!

Although white chanterelles are uncommon, over the centuries several white taxa have been described in Europe. Olariaga and coworkers reviewed these taxa and discovered that apparently without exception, all were white forms of known yellow chanterelle species.[3] In North America, *C. subalbidus*, a white chanterelle from the Pacific Coast, seems to be a separate species, without a known yellow counterpart. Sometimes another western species, *C. cascadensis* from the Cascade range in Oregon to Vancouver Island[1], is taken for a white chanterelle, although its cap and stem vary from off white to light yellow, and can be quite yellow at times. Chanterelles tend to be quite parochial, with relatively narrow distribution ranges, so that our white one is unlikely to be either of the two western species. For the same reason, ours is unlikely to be one of the white forms of a European yellow taxon. This leaves the possibilities of either a new and independent white species, or a white form of one of our three known species, as has been noted in Europe. Here we report preliminary conclusions from our attempt to solve the riddle of the white chanterelle of NL.

Figure 1. White and yellow chanterelles in situ. *Middle photo: Mac Pitcher. Whites grow as small clusters among large population of clusters of yellow* C. enelensis*, usually apart, but on occasion close together, as in the middle photo. On lower photo, note the yellow-tan reaction of cut stems, similar for both colour forms. After session in dryer, both colour forms become the same yellow-tan colour and cannot be differentiated.*

Except for the colour, white chanterelles resembled *C. enelensis* macroscopically in size and shape (Cover, title banner, Figure 1). Even their discolouring reaction was the same: they turned yellowish tan on handling, as yellow chanterelles do, but the reaction was much more noticeable on the white background. Once totally discoloured, the two were indistinguishable. One collector dried a group of white chanterelles along with some yellow ones, and once dry, all were a similar yellowish tan, with no hint of their original colour. One other character was noticeably different from *C. enelensis*: the odour of white chanterelles was sweet but much less intense, without the characteristic, pungent, fruity, "apricot" note of yellow chanterelles.

Most finds were made by commercial pickers, while harvesting their "regular" patches. In other words, the whites were discovered as single or sparsely scattered small clusters among large fruitings of yellow *C. enelensis* (Figure 1). Thus, they shared the habitat and fruiting time of *C. enelensis*.

Because a) they were first noticed six years ago by commercial harvesters who return to the same

Figure 2. Currently known distribution of white chanterelles in NL. *More sites expected with time. Intersite distance = 35–200 km.*

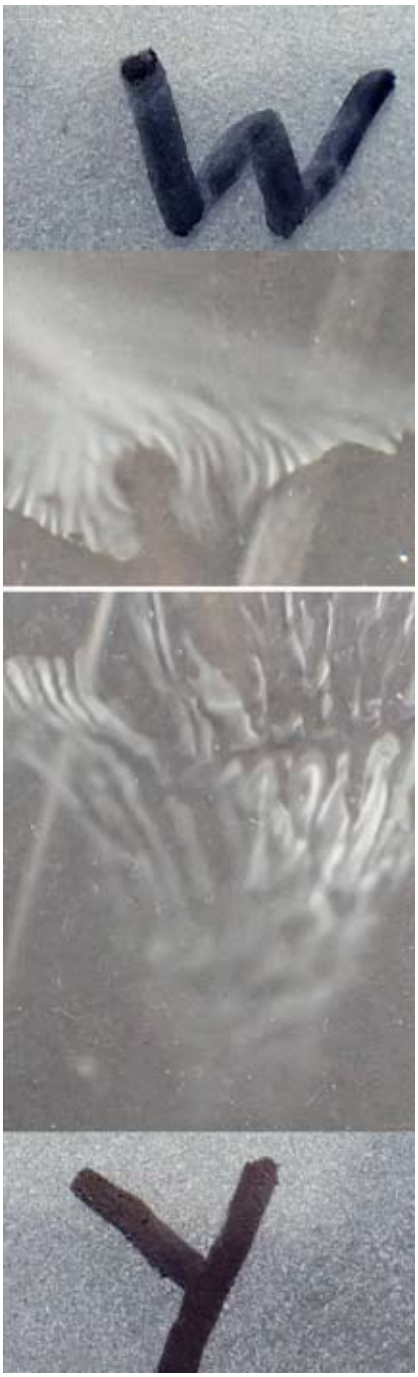


Figure 3. Spore print of white (above) and yellow (below) chanterelles. *Both were similar, light yellow.*

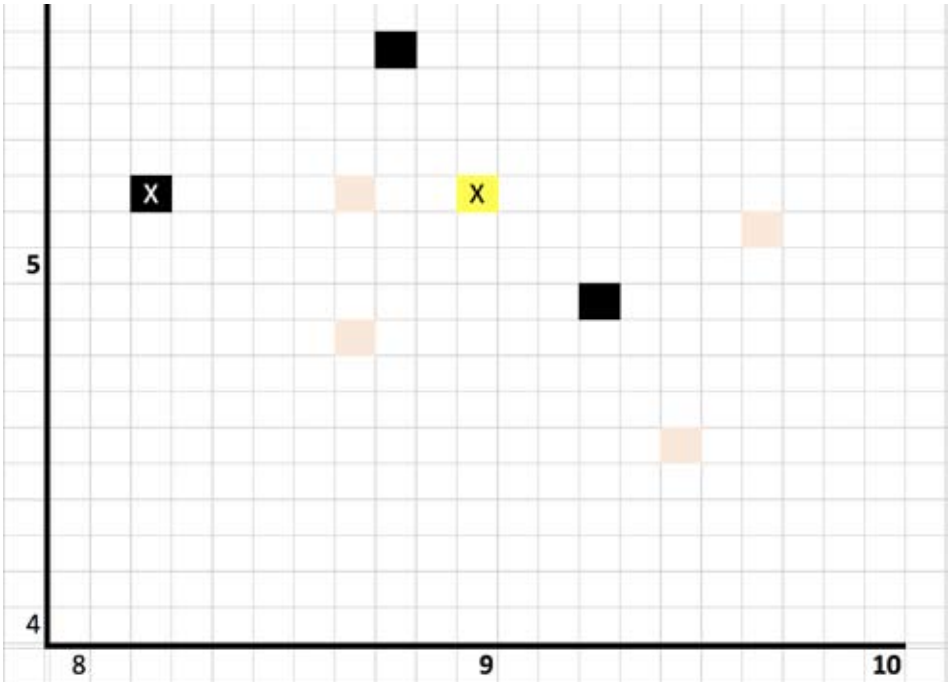


Figure 4. Spore measurements of white and yellow chanterelles. *Single observer measurements of sequence confirmed specimens only. Beige squares are yellow* C. enelensis *from 2017 study.[1] Black squares are yellow C. enelensis collected this time. X denotes white and yellow specimens collected at same time, within two meters of each other.*

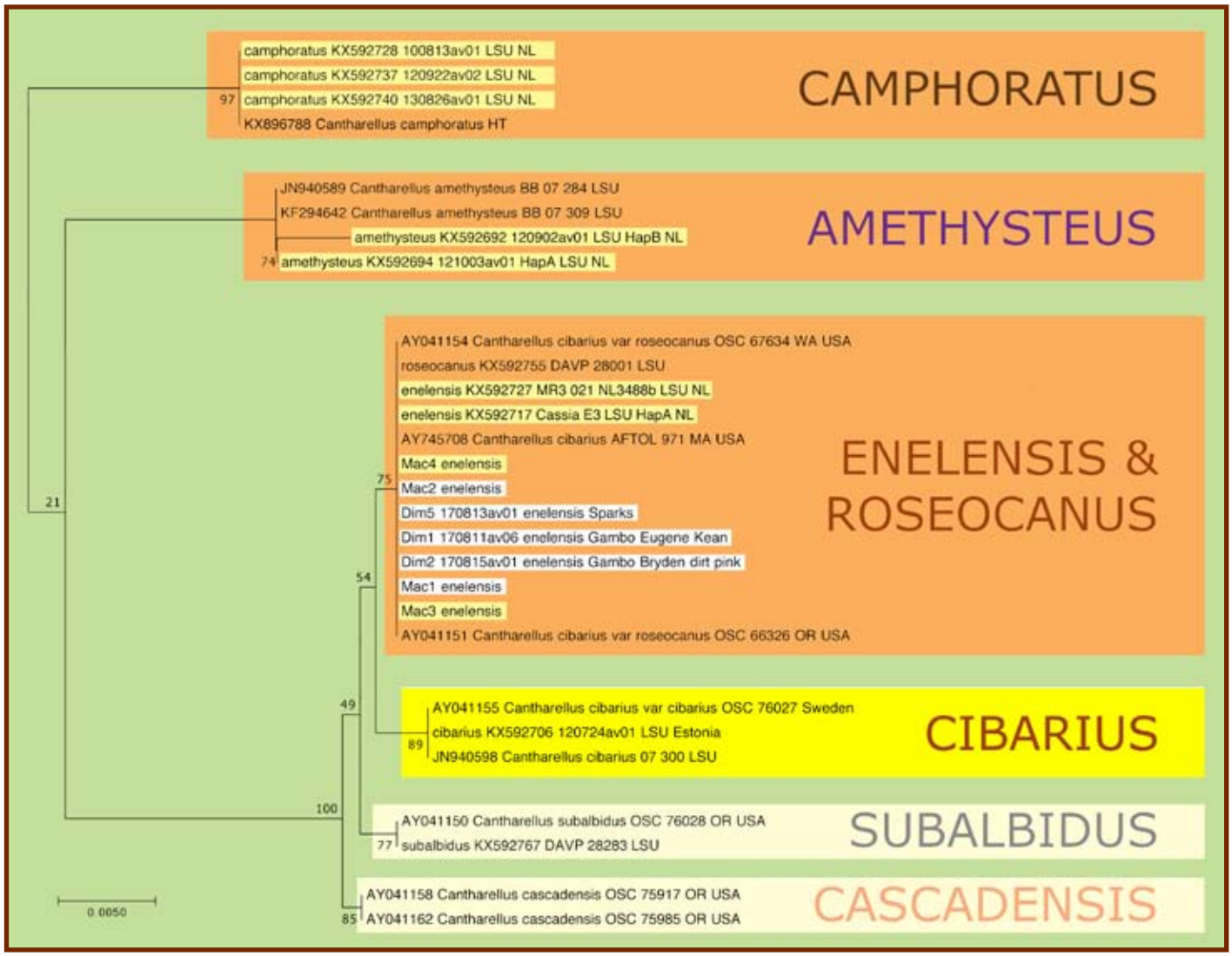


Figure 5 . Phylogenetic tree showing placement of the NL white chanterelles. *Neighbour joining tree, LSU sequences, modified from a larger tree. The three NL species are on top (orange panels) and at the bottom are the two white/off-white North American species (off-white panels). Between these groups is the European* C. cibarius. *In the NL species panels white backgrounds indicate white specimens from NL, and yellow background indicates yellow specimens from NL. The tree demonstrates the following:*

1. *Yellow specimens fall in all three NL species panels, as expected.*
2. *White specimens do not fall in with other North American white or light species, and, therefore, are not a known white species.*
3. *White specimens do not form a separate clade, and, therefore, are not a separate species, but a white form of a yellow species.*
4. *White specimens do not fall in with all NL species, but only with C. enelensis. Thus, not all NL species have white forms, only* C. enelensis.
5. Cantharellus enelensis *and* C. roseocanus *fall in the same clade. Therefore, LSU does not contain all markers needed to separate these two species. However, the difference between them has been demonstrated, from which we know that* C. roseocanus *is limited to western North America, and* C. enelensis *to the east.*[1] *Hence, the origin of the specimens identifies the species without the need for additional DNA work.*

Therefore, this white chanterelle, while morphologically obviously different from the typical C. enelensis, *is phylogenetically identical to it. An unlikely possibility that the white specimens represent a third close species, not detectable with LSU, is not excluded. We have embarked on multilocus analysis to exclude this possibility with certainty.*

sites for years, b) white mushrooms stand out in a field of yellow, and c) they were not seen before 2012, and now seem to be spreading, likely this is a recent development, which seems to be spreading. Of course, that is supposition, and it could just be a matter of more people aware of it a nd looking for it. Figure 2 shows the known distribution to 2017, but if it is truly becoming more common and spreading, reports from additional areas should be expected in the future.

Spore print colour was similar for both, a light yellowish white (Figure 3). Microscopically they resembled *C. enelensis*. There were no cystidia, basidia were the same size with 4–6 sterigmata, and spore size was similar (Figure 4).

At this juncture we suspected that these represent white forms of *C. enelensis*, rather than a new species, much as has been shown for white chanterelles in Europe. The difference of two characters (colour and smell) could probably be explained by lack of pigment alone, suggesting that different compounds account for the staining reaction. Yellow aromatic compounds are responsible for both colour and aroma of many fruits (including apricots),[4] likely also the case for chanterelles. In Europe, Velenovský was so impressed by the lack of the characteristic odour in a white chanterelle that he named it *Cantharellus cibarius* var. *inodorus*.[5] However, other reports are not as clear about odour. Both white and yellow chanterelles have a pleasant smell. Therefore, if only the presence or absence of a pleasant smell is sought, both seem similar. A difference can only be noted if the characteristic fruity chanterelle odour is sought specifically.

Molecular studies confirmed that the white chanterelles of NL were indeed white variants of *C. enelensis*, as suspected (Figure 5—please see the caption for a more detailed explanation). In other words, the white and yellow forms share an evolutionary history at the level of species, even though they have some obvious differences in colour and smell. In the era of morphological taxonomy, these differences may have been enough to declare them different taxa, a conclusion not supported by molecular phylogeny. Most gardeners are familiar with different colour forms of the same flower species that have been brought about by artificial selection.

We do not name these as separate species, because we can see the clear morphological similarities and we know their shared evolutionary histories. In such cases, infraspecific (below species level) names often serve a purpose. While a variety is too great a distinction (being comparable to subspecies in animal taxonomy, a morphologically recognizable variant with a distinct geographic distribution), the forma designation should suit a white form of a yellow organism, permitting precise reference to these white mushrooms lacking aromatic pigments. After completion of multilocus analysis and some additional studies, we may describe the white chanterelles of Newfoundland formally as a form of *C. enelensis*.

This preliminary report aims to inform you of our white chanterelle in the hopes that additional eyes will help document its distribution and spread.

Acknowledgments

We are grateful to our co-authors of the 2017 studies,[1, 2] on whose work this study stands, as well as the contributors to that report. We also thank Eugene Kean, Mac Pitcher and David Sparks for finding, reporting, collecting, drying and sending us specimens of white chanterelles, and are indebted to Teuvo Ahti, Adolf Ceska, Henning Knudsen and Scott Redhead for help obtaining or interpreting old records.

References

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Sarea of NL

Andrus Voitk

Join me on a journey to another world, the delightful world of conifer resin inhabited by two resident cup fungi. And talk about promotion and progress: two weeks ago I did not know this world existed, and now I am a travel guide to it! This world of resin has much to recommend it. First, it is available with its wonders right now, when very few other fungi are about. Well, a few morels, but who cares, right? Also, this world is open to you even if you are no longer a bushwhacker. Any trail through coniferous woods has just as many accessible trees with some resinous wounds and patches right beside the trail, as there are deeper in the woods. Maybe even more, from old damage done when the trail was cut. If you accept this invitation, I guarantee that you will be delighted.

Several species of fungi have been recorded from resin. Most of them can also make a go of it on bark and wood with no obvious resin, but only the genus *Sarea*, with its two species seems to be a pure resin dweller (resinicolous). My early experience suggests that in our province (at least around our house) the other species, common elsewhere, have so far been totally absent, so that we can devote ourselves only to species of *Sarea*. If you read **FUNGI**, you may have come across the name in Larry Millman's Small wonders series,[1] and if you are lucky enough to belong to the Boston Mycological Cub, you will have read about it in the March, 2018, issue of its Bulletin,[2] where I read about it the day before setting out on our *Huangshania novae-fundlandia* hunt.[3] Because the hunt would take us to many resinous conifers I thought I might use the opportunity to locate these species. Just to see how difficult that might be, Maria and I went out to reconnoiter the day before. To our surprise, we found both species on our first try.

It would seem that the genus is easier to find than finding any information about it. The genus *Sarea* was first described by Fries in 1825,[4] but it took even him three years to assign any species to it,[5] giving us a better idea of what the genus was like. One of these, the black *S. difformis* (Figure 1), is still in the genus and now its type species. The second current species is the much more colourful orange (varies from yellowish to reddish) *S. resinae* (Figure 2). I could find only one article offering any modern descriptions of the genus,[6] but being primarily a taxonomic work, they were somewhat limited. Larry Millman told me of a 1985 Japanese article, which I could not download, and James Mitchell sent me a 2015 article in both Spanish and Basque.[7] Even if you do not read either

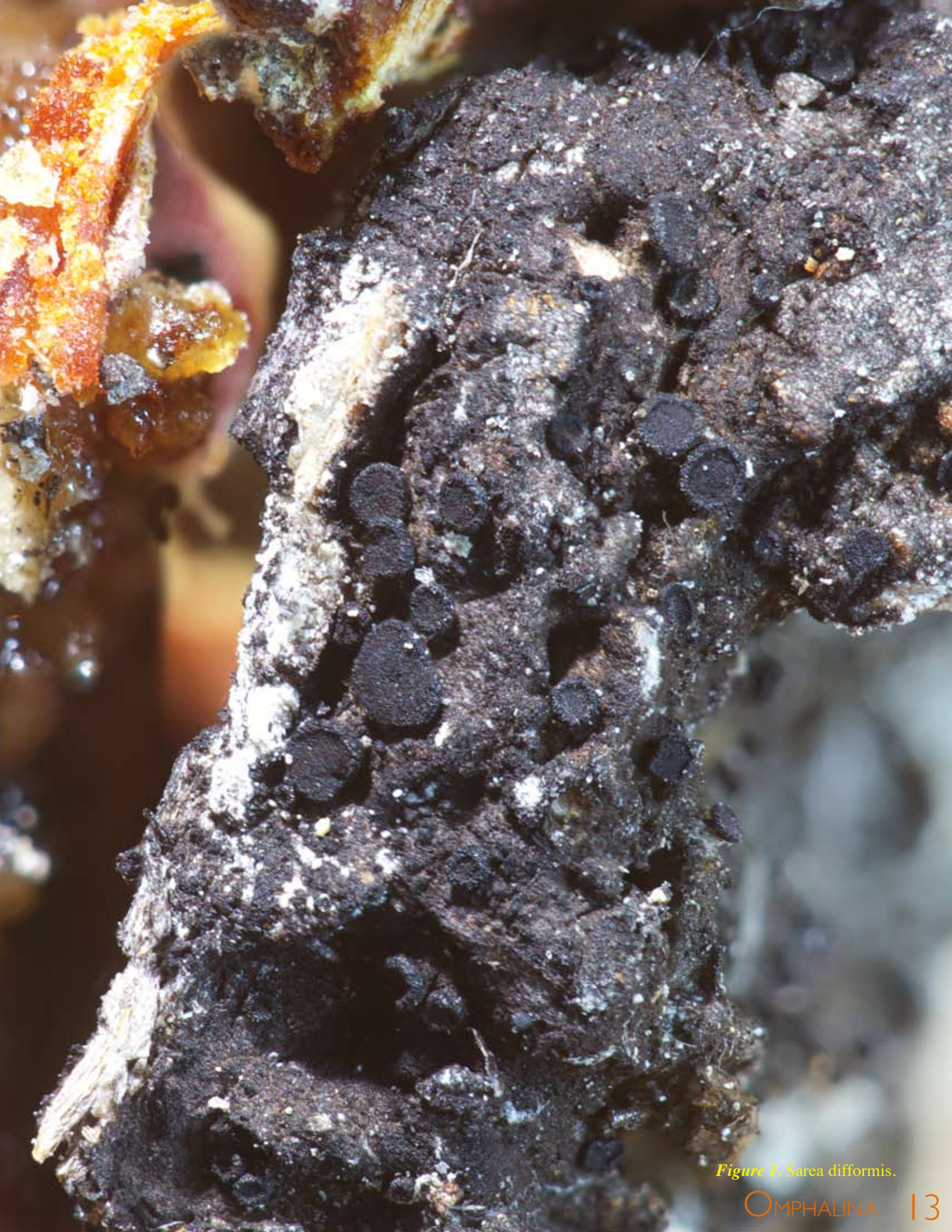

Figure 1. Sarea difformis.

Figure 2. Sarea resinae.

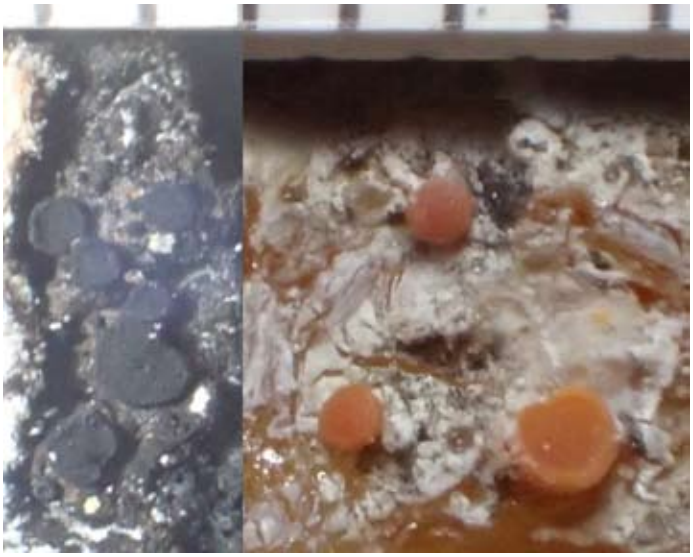

***Figure 3**. Both species, photographed with a millimeter scale above, adjusted to be the same size. Neither is all that big. Note that the black* S. difformis *grows on older resin, which has turned almost black, making casual detection impossible. To find them, such areas must be scanned very purposefully with a loupe under good light. Do not mix up anamorph and teleomorph (see Figure 4).*

language, the excellent illustrations are in American English, showing macro- and micromorphology of the sexual and asexual forms for both species.

To my knowledge there are no focussed phylogenetic studies available, although James Mitchell is aiming to change that.[2] In the absence of book learning, I thought I should see what I could learn about the genus in the woods during a week: seven days spent going in some nearby conifer forests specifically to observe these species. This is not as intense as it sounds. We went about every second or third day, and only spent a few hours looking. About two hours is the most one can take, peering at conifer bark with a loupe.

Resin is designed to dress and heal wounds or permit healing underneath, while barring entry to inimical organisms, even as small as bacteria. The barrier is both chemical and physical. When the resin runs, it is sticky and gooey, entrapping any organism coming in contact with it. In fact, until the oldest mushroom was found in limestone last year, amber inclusions were the

***Figure 4**. Anamorphs (asexual) and some teleomorphs (sexual) of both species. Left: a few young teleomorphs of* S. difformis *surrounded by several anamorphs (the small black grains with an irregular central opening. Middle: mixture of both forms of both species. Right: same for* S. resinae *(see also anamorph just to the right of the teleomorph in title banner). Hawksworth and Sherwood[6] say that the anamorphs of* S. difformis *open by irregular degenertation of the upper surface, while those of* S. resinae *have a well developed ostium or opening on the top. The white material on/in/through which these are seated is not a crustose lichen thallus, but resin. NOTE: It is possible that the black ones may be misidentified, because everything went flying with my inexpert specimen taking, so they have not been subjected to the usual rigorous examination collections must pass to gain entry into my hallowed fungarium.*

Many fungi, particularly ascomycetes, make asexual as well as sexual organisms. Sexual reproduction mixes the genetic material from two parents, giving each offspring the same genes as their progenitors, but with a different mixture of the content. Such mixing is the secret behind the survival of the fittest theory and permits selection in response to changing external conditions. Asexual reproduction is essentially cloning; exactly the same genetic material is duplicated, making offspring exact copies of their progenitors. These have no improved coping mechanisms to respond to external change, and selection plays no role. However, it is an alternate mechanism for preserving genetic material, contributing to survival of the species.

source for the oldest fossilized fungi. The change from runny sap to hard amber is a chemical polymerization, which begins on the outside and moves slowly inwards.

There is a difference between theoretical and practical knowledge. It was not until this interest to collect *Sarea* that I understood what hardening by polymerization means in practice. Special care is required to collect these mushrooms. Initially I placed my knife above the fruiting bodies and attempted to cut away a swath of resin with the small cups on top. The resin was so brittle that it immediately shattered into thousands of small bits that exploded in a cloud of dust, carrying priceless mushroom specimens all over the woods! It took two days of trial by error before I learned how to collect them. Cut straight down, well away from the small cups, all the way to the bark, all around the desired specimen. Then cut parallel to the trunk, in the bark below the resin, to remove a resin-covered shaving with cups on top. A chisel and small mallet are very helpful for accuracy, which avoids unnecessary damage to the tree.

Both species are very small, under 1 mm in diameter (Figure 3). A loupe is a necessity to prevent overlooking them, when examining resin on conifer bark. Both are found along the full height of the trunk, up to eye level—examining trees cut for firewood reveals they can be found higher as well. They (at least the orange *S. resinae*) are not at all uncommon, once you know about them and know where and how to look for them. So far, we have found them on black and white spruce (*Picea mariana* and *glauca*), white and red pine (*Pinus strobus* and *resinosa*), larch (*Larix laricina*), and balsam fir (*Abies balsamea*). Neither species is found on fresh, runny or sticky resin. Although they may coexist, *S. resinae* seems to prefer younger resin and *S. difformis* older resin, often turned black. The orange species is over twenty times more common than the black in our area—and not only because the orange one is easier to find. It goes without saying that seven days of sampling does not produce a reliable overview, and more observations may change some of these observations, as well as add knowledge about distribution and seasonal variation. However, I thought it would be interesting to set down our preliminary findings, while fresh in our mind because:

1. Later on, as the season advances, other mushrooms may take our minds off documenting *Sarea*, and our project may falter, good intentions notwithstanding, and
2. Telling you about this new world now may entice you to explore the world of small cups on resin with your loupes, when there are fewer other fungi to draw you out.

Oh, if you collect them and put them in the dryer with a bit of heat to dry them, you will learn more things. Like, that some of the unhardened resin liquefies and flows to make everything stick to everything and set up perfect amber inclusions for rings a century from now. With your collecting slip included.

Lacking observed fruiting time, we can attempt a few guesses. We saw mature fruiting bodies when there was snow on the ground and long before night frosts were over. People who have seen them tell me they are out all through the winter, presumably sporulating during periods of thaw. This makes them psychrophiles (cold-lovers). Most psychrophiles disappear during the warm summer months, at least July–August, but begin to make a slow reappearance at the end of September. I hope so, because I hope we can find some during our upcoming foray. Bill Bryden is planning to set up a culturing station (and give culturing workshops) at the foray. This would be an ideal species to culture. It is rarely collected, very little is known about it, the cups are so small that DNA is difficult to extract. But if we can culture it, there would be all kinds of tissue for DNA. Then James Mitchell can study these species better, so that we can learn more about them.

Meanwhile, please take along a loupe and join us in the marvelous world of resinicolous psychrophiles!

Acknowledgments

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Two new old amanitas

Andrus Voitk

Most mushroom species in Newfoundland and Labrador (NL) have been known by names first used in Europe, names carried across the sea and applied to similar-looking species found here. You have all heard, and, no doubt, used, such names: *Amanita muscaria*, *A. fulva*, *A. virosa*, *A. rubescens*, *A. vaginata*, *A. ceciliae* and so on. Decades of dedicated work has shown that their genetic make-up did not cross the ocean with the name, so that the name has been misapplied: millennia of evolution have produced species here which differ genetically from those in Europe. That some look quite similar, suggests that the genes controlling their looks either evolve at a slower rate, or they have had no reason to evolve their looks.

As these differences became appreciated and our species—which have been here for centuries—became recognized as new to mankind's awareness (i. e., science), they have been described and given new names. Some of the most prolific workers with the genus have been so busy describing several new species that they have not taken the time to make definitive, formal descriptions, and gave the species provisional names instead. Sometimes this resulted in the same species getting two different provisional names, neither of which was taxonomically valid. Unless provisional names become validly published, they have the same authority as pet names, code names or common names—useful for an individual, laboratory, small group or region, but likely different from names used by other individuals, groups or regions for the same organisms.

I am delighted to report that this situation is changing, and valid descriptions of these described species are now being published. In a recent publication by Lambert et al.,[1] our friends from Québec with some collaborators describe two "new" species, validating two "old" names first used by Yves Lamoureux: *A. rhacopus* Y. Lamoureux and *A. variicolor* Y. Lamoureux. Both species belong to section *Vaginata*, and are native in our province as well, and I am pleased to introduce you to them, so that henceforth you can call them by their official names.

***Amanita variicolor* Y. Lamoureux**

Mushroom: Shades of dark to light orange to olive brown caps, ringless, about 14 cm tall.

Cap: 3–9 cm, conical and remains at least subconical for long, when plane, usually retains broad umbo, mucinous when wet, striate for about 30–40% from edge, covered with variable amount of grey to brownish grey patches from universal veil, colour varies from orange to olive brown, or grey-brown, often with different shades on the same cap

Gills: close, free, white becoming cream.

Stem: 7–17 x 60–160 mm, widening downwards, hollow. No ring. Surface white, covered with whitish, then orange brown fibrillous chevron pattern, fainter toward the top. Orange to rusty brown at base.

Volva: Friable and crumbly, begins grey, becomes orange to rusty brown.

Flesh: White, smell unremarkable.

Spore print: White

Ecology: On moist ground singly or in small groups among moss, often in bogs on *Sphagnum*, or mixed forests. In tundra (title banner) seems to occur with *Salix uva-ursi,* or possibly dwarf birch.

Distribution: Sequence-confirmed in eastern Canada as far west as Ontario. In NL, so far found in Western NF, and Labrador; a relatively common *Amanita* in the ericaceous subtundra habitat of Great Caribou Island, off the coast of Labrador.

Comment: The species has frequently been identified as the European *A. ceciliae*, so far not known to exist in North America. Variably coloured cap, and stem with orange brown chevron pattern and rusty orange base distinguish this species from other section *Vaginata* members in NL. Not an overly common species in NL, but more commom than *A. rhacopus*.

The value of publishing these descriptions is clearly apparent. Immediately on reading the article by Lambert et al., I was able to identify both species among past collections, enabling us to name our native species, and publish significant extension of their range.

Lambert et al., report *A variicolor* as the less common of the two, opposite from our findings. *A variicolor* may be a cold tolerant species, at the southern end of its range in central and southern Ontario and Québec, more common in our cold climate, although Lamoureux states it is quite common in QC, found in bogs and even mountains; it was a relatively common *Amanita* on an island in the cold Labrador Current.

Both the Québec and Newfoundland collections came from coniferous forests with a birch admixture. In Québec the species was not found in plantations, presumably conifer monocultures. This raises the possibility that birch may be its partner, not conifer. In the tundra habitat, there was no conifer near places where the species was colleted, yet we have not found it in our birchwoods. Lamoureux believes it is a generalist, partner with both hardwood and softwood.

***Amanita rhacopus* Y. Lamoureux**

Mushroom: Dark grey-brown, ringless, about 12 cm tall.

Cap: 3–8 cm, subconical to plane, mucinous when wet, striate for about 40–50% from edge, covered with variable amount of grey or brownish grey patches from universal veil, grey-brown, darker over the disc.

Gills: close, free, white becoming light grey-brown.

Stem: 7 – 16 x 70–130 mm, widening downwards, hollow. No ring. Surface white, covered with dark brown chevron pattern, fainter toward the top.

Volva: Fares out like a ring at the top in youth, then crumbles, begins brownish, becomes grey.

Flesh: White, smell unremarkable.

Spore print:: White

Ecology: On dry ground singly or in scattered small groups among duff in coniferous or mixed forests.

Distribution: Sequence-confirmed from eastern North America. In NL, during 16 years of collecting, so far only found in Barachois Provincial Park.

Comment: One of the two species frequently identified as the European *A. ceciliae*, so far not known to exist in North America. Dark grey-brown cap and chevron pattern on stem identify this species from other section *Vaginata* members in NL, as does a ring-like top of the vulva in young specimens.

Not a common species in NL. Lambert et al. report this species as the commoner of the two in Québec, but here it is less so. Climate may be a determinant of its distribution, if the species is less cold tolerant than *A. variicolor*. Certainly, it was not found on islands in the Labrador Current, where *A. variicolor* seemed to be relatively common. According to Lamoureux, a birch partner.

Acknowledgment

I thank Yves Lamoureux for his review and discussion of this report.

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THE MAIL BAG

***Melanoleuca verrucipes* article, last issue**

In your discussion of my account of this species you wondered whether how likely my suggestion of spread from the West could be. The individual who supplied wood chips for the Thoreau complex (where I had noted the specimen) told me that the substrate was "probably mulch from the west coast."

In a letter to me in the 1880s, the late Gary Lincoff documented his find of *Melanoleuca verrucipes* in mulch in western Pennsylvania. That seems to be the first sighting east of the Mississippi.

Larry Millman

Ed comment: Point made: transcontinetal antropomorphic spread is certainly possible in your case. Our progressive civilization is just amazing: imagine shipping wood chips from the West to a forested region across the continent!

Thank you for another interesting number of Omphalina! It is always a pleasure to read news of the NL and world mycotas!

I just want to say that *Melanoleuca* is well established as a saprotrophic genus, also a genus with high affinity for nitrogen-rich habitats. Just take a look in Funga Nordica. I have only seen *M. verrucipes* 2–3 times—the first beside bear dung deep in a Finnish forest near the Russian border.

Gro Gulden

Ed comment: Point made: bear dung would certainly fit the substrate for a saprobe fond of nitrogen.

Just looking for a little input on our mushrooms here in Labrador this year. I would send you a picture, however, I have NOTHING to send!

Is this strange? I have been watching mushrooms for over 10 years, paying attention to dates and such. This is the first year that I have not even found an *Amanita*, *Gomphus*, *Suillus*, or anything! Last year on the 6th of July, I was bottling and drying boletes; porcini, saffron caps, scabrums and orange caps!

We did find one small batch of golden oysters growing on dogberry tree, and just one LBM.... That's our total for this year so far here!

Please let me know what you think.

Pearl Estelle Michelin

Ed comment: Estelle, we have been having very unusual weather, the like of which has not been recorded before. No doubt nature responds to this in its own way. Here, where we live, July and August have always been hot (relative term!), and we have not had much in the way of mushrooms in these months, save for a few, like chanterelles, that seem to prefer this time. They seem to be up as usual.

There is a host of species that seem to have a double peak in fruiting, first in May-June and again in Sept.-Oct. Most of these are not big, showy or edible, so people do not pay them heed, but it's a "natural" pattern. Here most of the big ones you mention become common in late Aug. or Sept.

As weather heats up where you are, maybe the pattern will become more like ours. That may cut the fruiting time down, because winter comes earlier for you (unless that changes also). Just guessing, but don't really know. We wait and see.

Anyway, I hope we'll have something for our foray by Sept., down in the deep south on the Avalon… We have had a hot summer, making mushrooms scarce. Correspondents from eastern Canada, Norway, Sweden, and Estonia report the same. This may not be as hopeless as it seems. If we get moisture, mushrooms may become bountiful. Some of the same correspondents are already noticing this. See Omphalina 4(9):14, 2013, for some speculation about good mushroom years.

Thanks for your note. I really do appreciate hearing how things are around the province from people "in the field".

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