

Spore Print

Spring 2021



Alberta Mycological Society

Feature Mushroom: *Verpa bohemica*

Verpa bohemica is a species of fungus in the family Morchellaceae. Commonly known as the early morel or the wrinkled thimble-cap. The mushroom has a pale yellow or brown thimble-shaped cap—2 to 4 cm (0.8 to 1.6 in) in diameter by 2 to 5 cm (0.8 to 2.0 in) long—that has a surface wrinkles and is ribbed with brain-like convolutions. The cap hangs from the top of a lighter-coloured, brittle stem that measures up to 12 cm (4.7 in) long by 1 to 2.5 cm (0.4 to 1.0 in) thick.

In the field, the mushroom is reliably distinguished from the [true morels](#) on the basis of cap attachment: *V. bohemica* has a cap that hangs completely free from the stem.

Sourced 4/25/2021 from Wikipedia https://en.wikipedia.org/wiki/Verpa_bohemica

Edibility: Edible

Stalk: Cylindrical

Growing Season: Spring

Spore Print: White

Join us at on our website: : <https://www.albertamushrooms.ca>

The website includes featured mushrooms, blog, member log in and resources and much more!

Taxonomy:

Kingdom: Fungi

Division: Ascomycota

Class: Pezizomycetes

Order: Pezizales

Family: Morchellaceae

Genus: *Verpa*

Species: *V. bohemica*

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Crossword





AGM Summary

The 2021 Alberta Mycological Society (AMS) Annual General Meeting (AGM) was held on March 20, 2021 from 10:00am to 1:00pm using the Zoom video conferencing platform. The attendance was great with a total of 37 members joining in from the comfort of their homes. After Karen Slevinsky, the AMS President, welcomed everyone and kicked off the meeting with opening remarks, Robert Simpson, the AMS Treasurer, announced revisions to the bylaw documents. The motion passed to change all personal pronouns in the bylaw documents to “they/theirs” gender neutral pronouns. President Slevinsky expressed farewell, appreciation and thanks to Ryan James, the AMS Foray Coordinator and Director-at-Large, who has contributed much to the AMS in the past five years including collaborating on protocols for the Great Alberta Mushroom Foray (GAMF), representing the AMS on various boards, and writing a support paper for

the Bighorn Wildland Provincial Park. All other board members elected to continue serving for another term. The AMS welcomed Josh Smith who is joining the board as Director-at-Large. The Foray Coordinator position remains vacant. President Slevinsky also thanked Michael Schulz, Candice Cullum, Ken Dies, Erica To, Lisa Oishi, Christine Costello, and Catherine Jevic for all of the work they do to communicate within the AMS and to the public.

The guest speaker for the AGM was Martin Osis, who presented on “Magic Medicinal Mushrooms.” Osis covered the history of medicinal mushrooms, and how they came to be a controlled substance. Osis also covered the exciting future for psilocybin containing mushrooms after success in clinical trials for the

treatment of depression, substance use disorders, and other conditions. There are several species of psychedelic mushrooms that grow in Alberta including *Panaeolus foenisecii*. These mushrooms are often referred to as “LBM” (little brown mushrooms) and are notoriously difficult to identify. Due to difficulties in distinguishing them, it is important to get them identified by a mycologist before consuming. Osis is working with researchers at the University of Alberta (U of A) to find psychedelic mushrooms and understand their active chemical components.





AGM Summary

After the guest speaker presentation, Elizabeth Lakeman, the AMS Secretary, presented the AMS Graduate Award. This financial award will be presented to a graduate student studying fungal biology at the U of A every year. The AMS board is excited to help advance fungal research in Alberta and encourage students to become involved in the world of mushrooms. Donations to the award may be used as charitable tax deduction, and can be made online through the AMS website (<https://www.albertamushrooms.ca/>).

Christine Costello, the AMS Membership Coordinator, then presented the membership report. As of March 17, 2021 there were a total of 463 members which is slightly less than last year's 502 members. It should be noted that the 2020 Annual General Meeting was held at the end of 2020, while this year's Annual General Meeting was held at the beginning of the year as per the normal AGM schedule.

Liz Watts, AMS Director-at-Large, then presented the plan for GAMF 2021. It will be an engaging Alberta-wide virtual citizen science event held between July 30 to August 2, 2021. The weekend will include training sessions, educational presentations, identification seminars with mycologists, and independent forays across Alberta. The NatureLynx app will be used to collect the data during the event. Online registration is required.

Robert Simpson wrapped up the AGM by providing the 2020 Financials, the 2021 Budget, and nomination of auditors. President Slevinsky concluded with a positive and forward-looking President's Report for 2021. The Report included board priorities to support the AMS Graduate Award for five years, to support the board's commitment to developing its fungal database, host virtual events to engage our members, and to continue to host personally-distant forays across the province. No elections were required. The AMS Board of Directors and Society look forward to the upcoming year!

Report prepared by Rosheen Tetzlaff, Director-at-Large





News From the Veil: Dozens fined for illegal mushroom picking in London

Some illicit pickers caught with more than 5kg of fungi and one confiscated bag weighed 49kg

The City of London Corporation (CLC) said it handed out £80 fixed penalty notices to 27 people caught smuggling the fungi out of the ancient woodland over the last 12 months.

Some were caught carrying more than 5kg (11lb) of mushrooms, the CLC said.

"Stripping the ancient woodland of mushrooms damages its wildlife and threatens rare species," the CLC said.

Chairman of the CLC's Epping Forest and Commons Committee, Graeme Doshi-Smith, said: "Fungi play an incredibly important role in the delicate balance of biodiversity which makes Epping Forest special.

"And many varieties are dangerous for human consumption and can indeed be fatal."

Ecological impact

Epping Forest Keepers say they also often issue verbal warnings to pickers.

Fungi are protected under Epping Forest bylaws and their large-scale removal damages its ecology, the CLC said.

The ancient woodland is designated as a Site of Special Scientific Interest and a Special Area of Conservation.

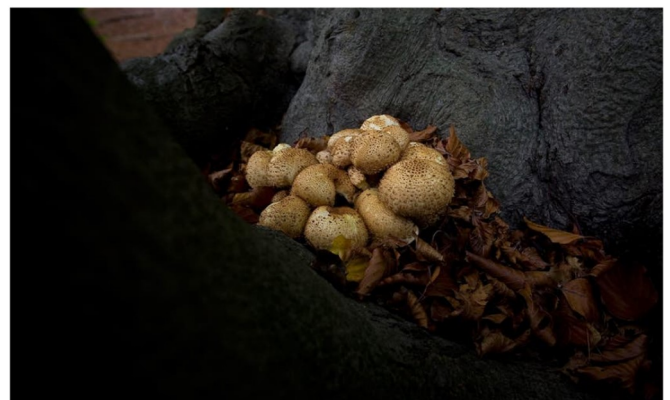
Many of its wild mushroom species are of national importance.

The CLC said certain types of fungi were sold to restaurants and markets.

Doing so removed food sources for rare insect species and other animals such as deer.

The fungi are important to the health of the site's trees, some of which are up to 1,000 years old, as particular species protect their roots, and provide them with water and vital minerals.

The woodland has more than one million trees and around 500 rare and endangered insect species.



Fungi grow on the trunk of a tree in Epping Forest on 25 October, 2008 in London, England. People have been fined a total of £2,000 for illegally picking mushrooms in the forest.

(Getty Images)

Source: Francis, S. (2021, April 2). Epping Forest: Dozens fined over 'illegal mushroom picking'. BBC News. Retrieved from <https://www.bbc.com/>



News From The Veil: Buildings made with fungi could live, grow — and then biodegrade

There's been buzz lately about mycelium, [a material made from fungi that's being used as a greener substitute for leather and plastic](#) in products such as clothing and packaging.

But more than a decade ago, designers were talking about mycelium's potential for another use — as a building material. This could lead to the construction of healthier buildings made of components that are grown instead of manufactured and can be triggered to biodegrade at the end of their life, instead of piling up as demolition waste in landfills.

Mycelium is the root network of fungi, which in nature help decompose materials like wood and leaves, recycling their nutrients and storing their carbon in the soil.

But it can also be grown by humans from waste materials such as sawdust or agricultural residues such as plant stalks and husks, recycling them and generating a new material or product within weeks in a low-cost, low-energy process compared to traditional manufacturing. It can even be [grown to a particular shape](#), similar to the way concrete is cast.

Joe Dahmen, an associate professor at the University of British Columbia School of Architecture, said people first became interested in mycelium for construction about 15 years ago as a substitute for foam insulation, which isn't biodegradable and can pose a potential health hazard.

"There's a real tie-in here with healthy buildings," he said, noting that he became interested in mycelium as a replacement for formaldehyde-based glues.

Mycelium can be used for a variety of building elements. For example, the Italian firm Mogu already sells [flooring tiles and soundproofing wall panels](#) made from mycelium. The British biotech firm BIOHM is working to develop mycelium-based [insulation panels](#).



Source: Chung, E. (2021, March 22). Made of fungi, mycelium hits market as green substitute for leather, plastic. *CBC News*. Retrieved from <https://www.cbc.ca/>



AMS Establishing a U of A Endowment Fund

AMS in collaboration with the University of Alberta, established the Alberta Mycological Society Graduate Award.

AMS has committed to a donation of \$2,000 annually towards this Graduate Award. The award will be given to a Graduate Student studying mycology or in a mycology-related field. This is AMS's five-year commitment totaling \$10,000. However, if our Society is able to donate \$50,000 during this five-year period, the Alberta Mycological Society Graduate Award will be endowed in perpetuity.

Think of it this way: your support with just a few dollars will help a student in the next university year, and your contribution will progress this Award to an endowment if our goal of \$50,000 is reached.

When you donate, you will receive an Official Receipt for Tax Purposes recognized by the Canada Revenue Agency to be used as a tax credit. A tax credit such as this can be applied against your taxable income. A little cash back for you, and a little support for a graduate student!

Currently, our total donations stand at \$4100.00!

Donate on <https://www.albertamushrooms.ca/about/amsgraduateaward/>
Simply click the link to be forwarded to the University of Alberta's donation site.

Karen Slevinsky

President AMS





Introductory Series Workshop: Growing Edible Mushrooms In Your Backyard with Fungi Akuafo

THURSDAY MAY 13, 2021

6:00 - 8:30pm

LIVE ON ZOOM—\$40

This 2.5 hr workshop hosted by the URBAN FARM SCHOOL in Calgary will provide you with some effective ways to introduce mushrooms into your backyard, mushrooms that can grow in our northern climate and seasonal variability.

We will guide you through assessing:

- the micro-climate of your space,
- the potential species to grow,
- the raw materials that you need, and
- suitable installation techniques.



Specifically, we will talk about oyster, wine cap and shaggy mane mushrooms.

Register here: <https://www.urbanfarmschool.ca/events/growing-backyard-mushrooms>

Fungi Akuafo—Fungi Lovers Unite

Meghan and Tara, co-owners of Fungi Akuafo, met in 2014 during a Permaculture Design Course. They were instant friends and knew that someday they would work on something great together! In early 2016, Meghan was offered the opportunity to purchase equipment necessary to start a mushroom business. Tara and Meghan then entered a partnership to pursue what is now Fungi Akuafo Inc.!

Learn more about Fungi Akuafo here: <https://www.fungiakuafo.com/>

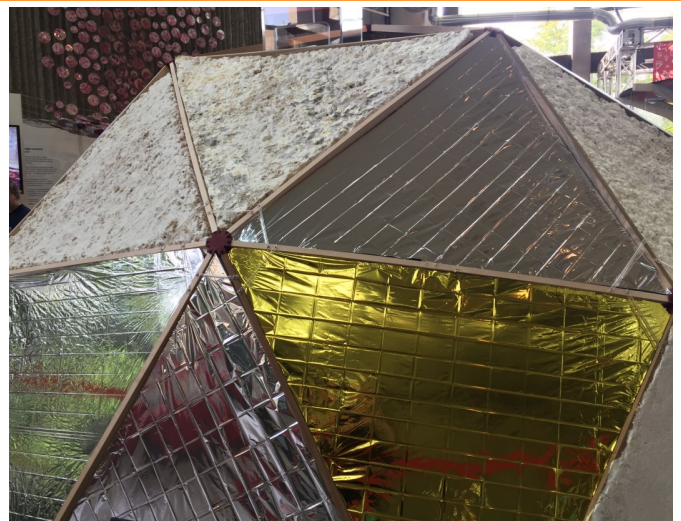


News From The Veil: Buildings made with fungi could live, grow — and then biodegrade

A number of projects around the world have also used mycelium bricks as a construction material. They include [Hy-Fi](#), a pair of two-storey cylindrical towers that won MoMA's Young Architects Program competition in 2014, and the [Mycelium Martian Dome](#) installation by Toronto artist Tosca Teran at the Ontario Science Centre in 2019.

In most such projects, the mycelium is no longer growing. But Dahmen has experimented with projects in which the fungi remained alive, fusing bricks together and even producing mushrooms.

They include a brick wall and a set of benches created with his wife, Amber Frid-Jimenez, Canada Research Chair in Art and Design Technology at Emily Carr University, and their design studio, [AFJD](#).



<https://toscateran.com/portfolio/the-mycelium-martian-dome-project/>

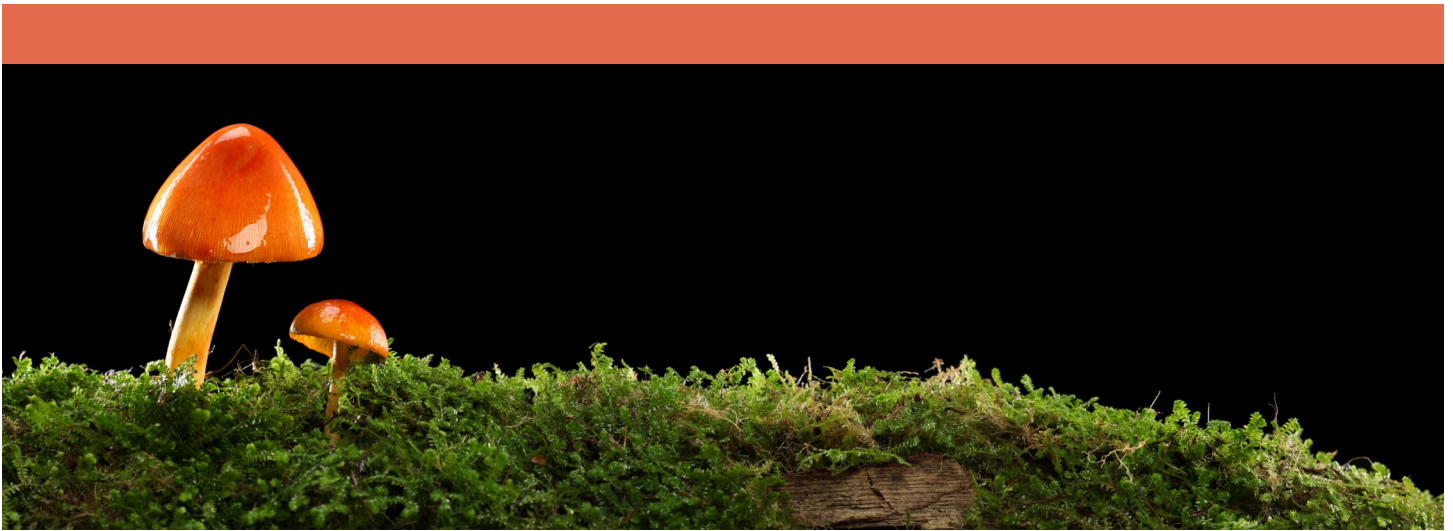
“As architects and designers, we were really interested in the idea of a material that might aggregate and continue to grow once it was in the shape or form of whatever it was we were designing to,” Dahmen said.

He said fungi can also go dormant to get through dry spells. Indoors, mycelium tends to dry out, becoming stronger and less spongy over time.

“But that doesn’t mean they can’t reawaken later.... What seems exciting to me is the idea that we could include these materials in a building and they would be inert and non-toxic during the life of the building. Then, in the right conditions, they might reawaken and start digesting the materials.”

Dahmen acknowledges it’s important to be able to make sure it only happens at the right time, and the challenge of designing materials for long-term investments such as buildings is bigger than designing materials for products such as clothing.

“I’m also equally confident that we will ultimately get to building components made of these materials,” he said. “It just might take a bit longer.” — *Emily Chung*



Current Board

Rosemarie O'Bertos - Past President

Karen Slevinsky - President

Mike Schulz - Vice-President

Rob Simpson - Treasurer

Elizabeth Lakeman - Secretary

Christine Costello - Membership Coordinator

Rebekah Adams - Director at Large

Rick Watts - Director at Large

Catherine Jevic - Director at Large

Elizabeth Watts - Director at Large

Erica To - Director at Large

Lisa Oishi - Director at Large

Rosheen Tetzlaff - Director at Large

Jacob Dowling - Director at Large

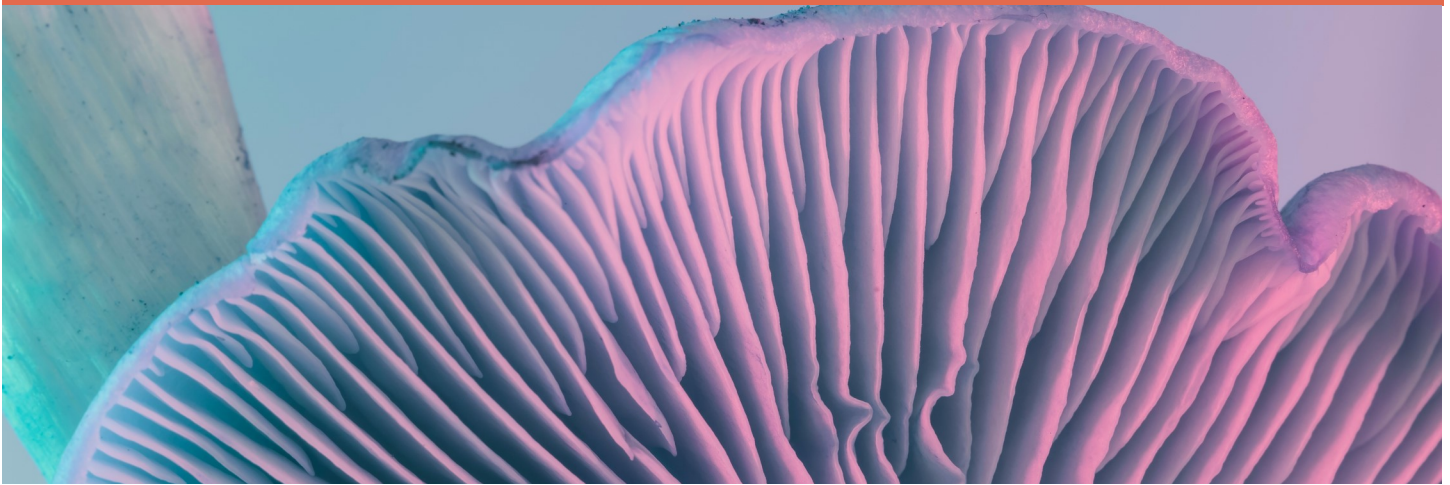
“Fungi are the interface organisms between life and death.”

— Paul Stamets



Volunteer!

If you are interested in mycology, particularly leading forays, please email our board for further information about volunteering opportunities: amsdirectors@albertamushrooms.ca



News From The Veil: B.C. farmer takes mushroom experiment to the woods of West Kootenay

In year-long pilot project, fungi will grow on dead trees along popular trail

An organic mushroom farmer in Kaslo, B.C., is taking his latest mushroom experiment to a forest trail on the outskirts of town. Robin Mercy's idea to cultivate Phoenix oyster mushrooms on rotting logs and stumps on the lower section of Wardner Lookout Trail has been given the green light by the Kaslo village council.

The one-year pilot project aims to test whether it's possible to grow a large amount of edible mushrooms on waste wood — in this case Douglas fir trees cut down to address beetle damage and wildfire risk — without regular watering and other maintenance.



Mercy, who runs an organic mushroom shop near the trail, says he will work with students from Selkirk College to inoculate the rotting wood with mushroom spawn provided by his business. The village says it won't need to invest any money in the project. Mercy says he isn't seeking commercial gain from the experiment, but rather wants to spark a conversation about food security within the local community.

"We can turn something that's considered very low value ... and actually turn that into food," Mercy told Sarah Penton, the host of CBC's *Radio West*. "That's something that a lot of people wouldn't have any idea [of] really getting creative with their local food supply."

See more here: <https://www.cbc.ca/news/canada/british-columbia/kaslo-oyster-mushroom-farmer-experiment-1.5986471>

Learn more about the project here: <https://mrmercysmushrooms.com/>

Source: Mercy, R. (2021, April 17). B.C. farmer takes mushroom experiment to the woods of West Kootenay. CBC News. Retrieved from <https://www.cbc.ca/>



Photography with AMS

Consider photography within the AMS. We could use your interest & eye for photography in several areas of the AMS. Here are a few ideas ... use your photography to feature the:

- Large variety & physical beauty of the mushrooms here in Alberta
- Record keeping of mushrooms found during our forays (whether informal or formal forays)
- Contact us, or keep an eye out in our AMS website for instruction on how research photos are taken (future plans; date yet to be determined)
- People within the AMS that we would like to highlight/share their significant contributions towards the goals of the AMS
- Photos alongside interview articles would help to share the message
- Essence of AMS activities, such as out on a foray with- in the different community regions, speakers, displays, research processes, and presentations

If interested, contact us and let us know in what way you would like to use your photography to participate.



Instagram

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Synoptic Key to North American Morels

Michael J. Schulz, MSc, PBIOL, EP

Instructions: on a separate sheet, make a list of possible species based on the most reliably known feature (use numbers). For example, if you have a mature mushroom, the cap ridge colour would be reliable; if only immature mushrooms are present, it would not be. Use a process of elimination based on other features to determine which species are possible. Note that not all species can be distinguished macroscopically, and some may even require genetic testing. Other species are known from North America based on genetic testing but have not yet been described.

<i>Morchella</i> sp.	Habitat ¹	Ridge Colour ²	Range ³	Cap Attachment ⁴	Cap & Stem ⁵	Other Key Features ⁶
1. <i>americana</i> (<i>esculentoides</i>)	D & C (Ap, As, Bo, El, Fi, Ma, Oa, Pi, Po, Pr, Sp)	Y	T	A	V, I, C?, R?	Pits and ridges somewhat regularly shaped, with ridges becoming thin and sharp at maturity, head typically egg-shaped to cylindrical, common across North America
2. <i>angusticeps</i>	D (As, Tu)	B	E	G2-5	V, R?	5-14+ cm tall, spores 22-27 u long
3. <i>brunnea</i>	D (Ar, Oa), C?	B	W	G2-3	V	Ridges dark when young
4. <i>diminutiva</i>	D (As, Hi, Tu, others)	Y	E	A	V, S	Typically only 3-9 cm tall, cap usually pointed
5. <i>eximia</i> (<i>septimelata</i>)	F	B	T	G1-3	V	ES subclavate to clavate
6. <i>exuberans</i> (<i>capitata</i>)	F	B	T	G1-7	C, R?	ES capitate
7. <i>importuna</i>	L	B	T	G2-5	V, S, R?	Horizontal ridges typically numerous and at varying depths
8. <i>populiphila</i>	D (Po)	B	W	H	V	Under <i>P. trichocarpa</i> near rivers, ES 100-175 x 10-25 um
9. <i>prava</i>	D, C	Y	C	A	I, R?	Pits and ridges contorted; ridges remain wide at maturity, head widely egg-shaped, often in sandy soil near lakes & rivers, uncommon
10. <i>punctipes</i>	D (As, El, Tu, others)	B	E	H	V	ES 50-100 x 10-25 um
11. <i>rufobrunnea</i>	L	R	T	A	V, R?	Pits dark relative to ridges
12. <i>sceptriformis</i> (<i>virginiana</i>)	D (Tu)	Y	E	A	V	Cap usually egg-shaped
13. <i>septentrionalis</i>	D (As, Po)	B	E	G2-3	V, R?	4-7 cm tall, spores 20-22 um long
14. <i>sextelata</i>	F	B	W	G1-3	V	ES more rounded; identical to <i>eximia</i>
15. <i>snyderi</i>	C (Do, Fi, Pi)	B (Y)	W	G2-4	R, V	Ridges pale when young but darken at maturity
16. <i>tomentosa</i>	F	B	W	A	T, V	Projecting hairs 120-250+ um
17. <i>tridentina</i> (<i>frustrata</i>)	D & C (Ar, Do, Fi, Oa, Pi)	B & Y	T	G2-4	V	Cap ridges don't darken at maturity
18. <i>ulmaria</i> (<i>cryptica</i>)	D (As, El, Ma, Tu)	Y	E	A	V, I	Like <i>americana</i> but only in Great Lakes region

¹F=Conifer forests within 1-2+ years after fire, C=Conifer forests, D=Broadleaf (deciduous) forests, L=Landscaped settings (usually wood chips); Ap=Apple (*Malus*), As=Ash (*Fraxinus*), Ar=Arbutus (*Arbutus*), Bo=Boxwood (*Buxus*), Do=Douglas-fir (*Pseudotsuga*), El=Elm (*Ulmus*), Fi=Fir (*Abies*), Hi=Hickory (*Carya*), Ma=Maple (*Acer*), Oa=Oak (*Quercus*), Pi=Pine (*Pinus*), Po=Poplar/aspen (*Populus*), Pr=Prickly Ash (*Zanthoxylum*), Sp=Spruce (*Abies*), Tu=Tulip tree (*Liriodendron tulipifera*). Lists are not exhaustive.

²Colour of **mature** cap's ridges; B=Black/very dark, Y=Yellow or other light colour, R=Light & bruising reddish

³W=Western, E=Eastern, N=Across North America, T=Transcontinental. Note that this is typically interpreted relative to the Rocky Mountains, however it would not be unexpected to find either in Alberta

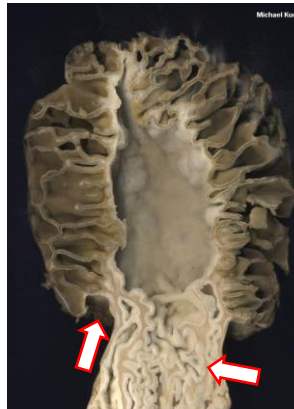
⁴A=Cap adnate to stem (no groove or indentation), G=Groove between cap and stem (numbers are length & width of groove in mm, e.g. G2-4 has a groove 2-4 mm deep & wide), H=Cap attached to the stem only about halfway up, with a significant portion hanging free ("half-free")

⁵C= Stem chambered & layered internally at least near base, I=Irregular/rounded pits, R =Stem very ridged & pocketed, especially on upper half, S= Vertical ridges of pits high and in relatively straight lines & few horizontal ridges connect at the same height as vertical ones, T=Cap surface densely velvety at least when young, V=Pits primarily elongated vertically *Note that a "?" means that a feature is variable and so may or may not be present

⁶ES=Elements on sterile ridges (microscopic)



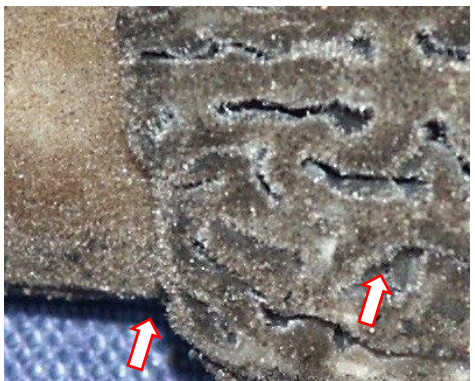
Prominently ridged stem of *M. snyderi* = "R"



Chambered stem in *M. exuberans* = "C". Also note groove ("G") between cap & stem



High vertical and lower horizontal ridges of *M. importuna* = "S"



Densely velvety cap of *M. tomentosa* = "T". Also note adnate cap, attached completely to stalk = "A"



Irregularly shaped pits of *M. prava* = "I"



"Half-free" cap of *M. populiphila* = "H"



Vertically elongated pits of *M. rufobrunnea* = "V". Also note light ridges & dark pits in this species.

Photos from www.mushroomexpert.com. Please also note that a dichotomous key, complete descriptions, and additional photos can also be found on this site.

Taxonomy based on F. Richard, J. Bellanger, P. Clowez, K. Hansen, K. O'Donnell, A. Urban, M. Sauve, R. Courtecuisse & P. Moreau. 2017. True morels (*Morchella*, Pezizales) of Europe and North America: evolutionary relationships inferred from multilocus data and a unified taxonomy, *Mycologia*, 107:2, 359-382.