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# FORAY NEWFOUNDLAND AND LABRADOR

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

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#### **COVER**

*Suillus clintonianus*, Humber Village, 8 Sep., 2003. This is our commonest *Suillus* species, by far. A good genus for the budding mycophagist: all our species of *Suillus* are edible, even if not equally desirable, and none are toxic. More inside this *Suillus* issue, to get you prepared for the

**Avalon *Suillus* Foray, Sep. 28, 2018.**

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## Message from the Editor

Welcome to our *Suillus* issue!

Bit of a long issue, but like all better anthologies of poetry, you need not read all at one go. Besides, most of the real estate is covered by pictures—so, better than poetry.

The prime purpose of this issue is to prepare you for the 2018 foray, which will focus on the genus *Suillus*, with four of the leading investigators of the genus among our faculty.

Of course, not everything will stay in your head on reading it, but keep your eyes peeled for *Suilli*, as they begin to appear, and use this issue to identify each one you see on any of your walks before the foray. By the time the foray rolls around, you will be an expert. It's just that easy.

We hope this issue does more than help you learn *Suilli* for this foray. It should be serviceable as a reference to the genus in the province for some time. It also points out some areas of uncertainty, which we hope will be investigated and straightened out by the suillologists, at which time we should like to update the section concerned. And if you want to write a book of our mushrooms, please feel free to use whatever you like from the contents.

If you live elsewhere, please be aware that all observations here may not be applicable to your region. We have treated our species, as found here, and made the descriptions, both macroscopic and microscopic (oh, wait, there are no microscopic descriptions!), on the basis of specimens collected here. There may be differences elsewhere, and

different species with which they need to be compared. Not only mushrooms, but trees as well. For example, apparently some regions have three-needle pines. We do not describe *Suilli* associated with them, because such pines do not grow in Newfoundland and Labrador. Ergo, a little caution is advised, if applying what you read here to other regions. Or, move here.

Happy mushrooming!

*Suillus*



# Suillus

Andrus Voitk

The theme for our 2018 foray will be *Suillus*, with most leading current North American students of the genus in attendance. Your job will be to know the genus cold, so that you can overawe them. This is not as difficult as it may seem, because amateur enthusiasts can spend a lot more time in the woods where the *Suilli* are than professional mycologists. As a result, you can really get to know *Suilli*.

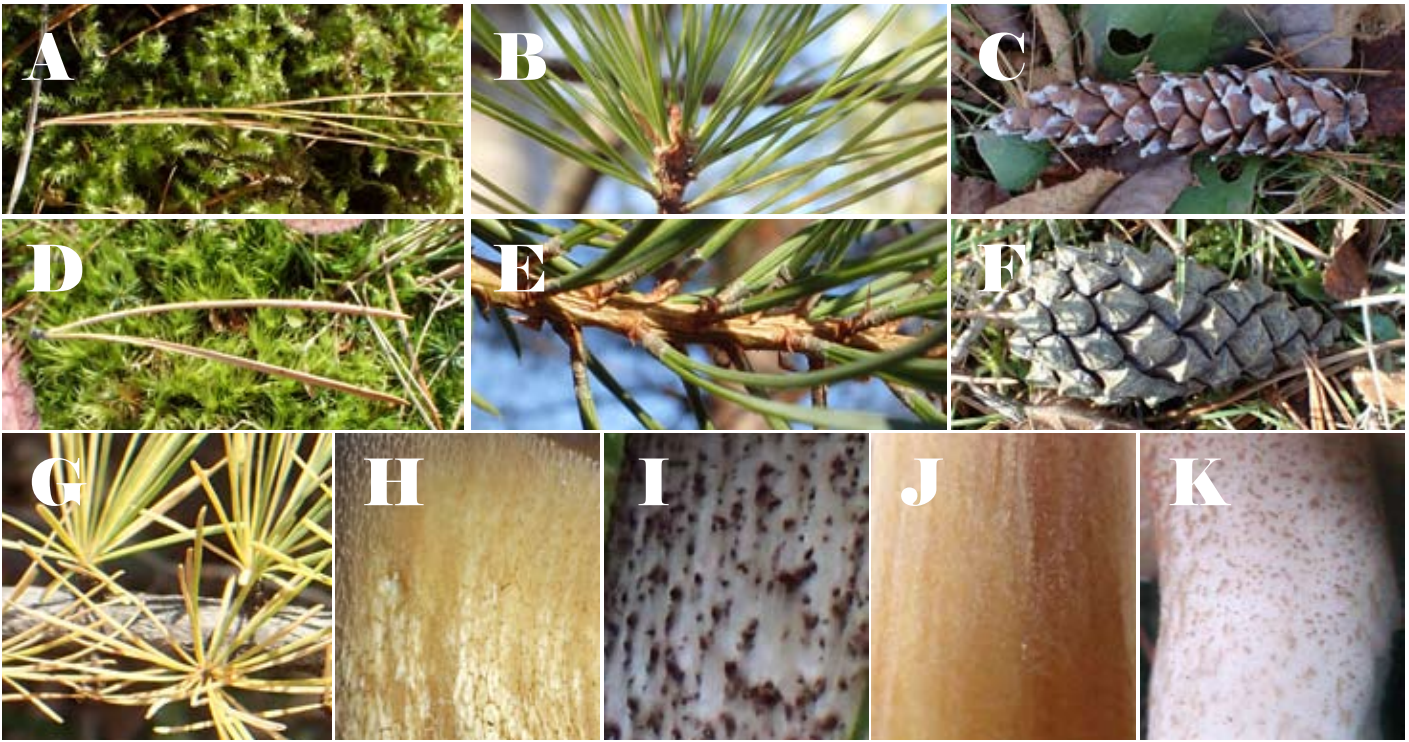
Why would you want to know this genus? Well, most people get into mushrooms because of an interest in identifying edibles, which immediately arouses a second interest: how to avoid mushroom poisoning. Enter *Suillus*, the genus where all species are edible and none are toxic. What more can you ask for?

How do you recognize a *Suillus*? It is a medium-sized bolete, a cap-and-stem mushroom with pores, not gills, under the cap, giving that spongy look; the cap diameter is usually over 3 cm, but seldom over 20. Its spores fall down tubes, whose mouths look like pores, and the tube layer is at least somewhat separable from the cap, not fused, like that of polypores. Most *Suilli* are slimy to some degree, and often have a ring. One of the key features is that the stem does not

have a net or reticulum, does not have scabers warts or pointed scales, and is not smooth or striate. Instead, it has “glandular dots” (Figure 1). Although this is not obvious with some species, it is a good point to begin. Look at a few pictures in books or the net, and begin identifying. With practice you will only get better.

Over the years we have identified about two dozen species of *Suillus* in the province. That is a lot to try to master all at once. Fortunately, that number can be broken down into manageable bits. *Suillus* is a mycorrhizal genus, which means that all species have an obligatory relationship with trees. Most *Suilli* are not generalists, but have evolved into a relatively narrow relationship with one species or small group of trees.<sup>1</sup> In the case of *Suillus*, ours are exclusively associated with conifers. If you know the tree, you know the mushroom. Or at least, it will be easier, than keying out one from a field of 24.

With one exception, all our *Suilli* are associates of either larch or pine. If you don't know these trees, make their acquaintance now: know them both and be able to tell the difference between them, as well as tell them apart from spruce and fir. Once you are that



**Figure 1.** **A–C.** Five-needle pine. We have one native species. **A.** Dropped needles: five long needles per bunch. **B.** On the branch: five needles per bunch (a few may have less, so look at many). **C.** Cone is oblong. **D–F.** Two needle pine. We have one native and at least three introduced species. **D.** Dropped needles: two long needles per bunch. **E.** On the branch: always only two per bunch. **F.** Cone is short, triangular. **G.** Larch. Multiple short needles per bunch, arranged in a starburst pattern. **H–K.** Bolete stem patterns. **H.** Reticular. **I.** Scabrous. **J.** Smooth. **K.** Glandular dots, characteristic of most species of *Suillus*. Sometimes difficult to see and at times better defined with a loupe.

far; you need to know which pine. You need not know the exact name of the pine, but do need to know the difference between two-needle pine and five-needle pine. Fortunately, a simple count of how many needles per bunch grow out of the branch bearing them will give you the answer (Figure 1). Now you are half-way there. Instead of considering 24 names, you have split them into four groups, the one that associates with balsam fir and/or spruce (1), those that associate with larch (8), those that associate with 5-needle pine (4), and those that associate with 2-needle pine (6).

**Larch** (*Larix laricina*) is very common in our province, distributed throughout, hugging the ground on exposed barrens and highlands, stunted in bogs and high elevations, and dispersed as stately trees in our forests, in addition to non-native species introduced for landscaping and as forestry plantations. One thing about larch makes it difficult for you to be certain about its relationship to a mushroom: its roots extend very far, much further than any of our other conifers, so that an associated mushroom may be quite far removed from the nearest larch tree. Rather than despair, consider this the little challenge to overcome,

if you are to overawe our 2018 identifiers.

**Pine** also spreads its roots far, not as far as larch, but further than fir or spruce. However, the distribution of pine is limited, so that unless you are in known pine regions, you can ignore pine associates. Except for some plantations, there is no pine in Labrador or on the Great Northern Peninsula. Almost all native **two-needle pine** (red pine, *Pinus resinosa*) stands are in central Newfoundland, and all but one are relatively inaccessible, so that most of the time you would encounter only introduced two-needle pine, either in urban landscaping or forestry plantations. **Five-needle pine** (white pine, *Pinus strobus*) is more common, and is usually dispersed through coniferous woods, rather than as pure pine stands. Most of it is found in central Newfoundland, with less in other regions, and there are similar introduced populations as 2-needle pine.

A recent global phylogenetic review of *Suillus*<sup>2</sup> eliminated several synonymies and identified North American species which differed from European ones, whose name they often bore. Thus, it is high time for us to review the genus locally, to find out

the real names of our species. Please note that the genus *Fuscoboletinus*, which you may find in many texts, has been subsumed into *Suillus* on the basis of DNA evidence.

Table 1 lists the species of *Suillus* that we have identified over the years. The right column lists the names we have used, and the left column lists the current names. Lighter coloured panels indicate where a name change has occurred. Species names are grouped by their tree associate, the commonest trees listed first. *Suillus glandulosus* is listed first, not because it is the commonest species, but because fir and spruce are our commonest conifers. Within the other groups, a rough effort has been made to list the species in order of commonness. If you are not sure of your identification, go with likelihood: common things are more common than uncommon ones, so the mysterious specimen in your hand is more likely to be higher in its list than lower. Now, to the descriptions!

#### References

1. Liao H-L, Chen Y, Vilgalys R: Metatranscriptomic study of common and host-specific patterns of gene expression between pines and their symbiotic ectomycorrhizal fungi in the genus *Suillus*. PLOS Genetics, <https://doi.org/10.1371/journal.pgen.1006348>. 2016.
2. Nguyen NH, Vellinga EC, Bruns TH, Kennedy PG: Phylogenetic assessment of global *Suillus* ITS sequences supports morphologically defined species and reveals synonyms and undescribed taxa. Mycologia, 108:1216–1228. 2016.

Table 1. <i>Suilli</i> of NL, names and trees	
OLD NAME	NEW NAME
<b>FIR/SPRUCE</b>	
<i>Suillus glandulosus</i>	<i>Suillus glandulosus</i>
<b>LARCH</b>	
<i>Suillus clintonianus</i>	<i>Suillus clintonianus</i>
<i>Suillus grevillei</i>	<i>Suillus grevillei</i>
<i>Suillus cavipes</i>	<i>Suillus ampliporus</i>
<i>Suillus paluster</i>	<i>Suillus paluster</i>
<i>Suillus spectabilis</i>	<i>Suillus spectabilis</i>
<i>Suillus grisellus</i>	<i>Suillus grisellus</i>
<i>Suillus viscidus</i>	<i>Suillus elbensis</i>
<i>Suillus serotinus</i>	
<i>Suillus laricinus</i>	
<i>Suillus bresadolae</i>	<i>Suillus bresadolae</i>
<b>FIVE-NEEDLE PINE</b>	
<i>Suillus americanus</i>	<i>Suillus americanus</i>
<i>Suillus sibiricus</i>	
<i>Suillus spraguei</i>	<i>Suillus spraguei</i>
<i>Suillus pictus</i>	
<i>Suillus placidus</i>	<i>Suillus placidus</i>
<i>Suillus granulatus</i>	<i>Suillus weaverae</i>
<b>TWO-NEEDLE PINE</b>	
<i>Suillus granulatus</i>	<i>Suillus granulatus</i>
<i>Suillus luteus</i>	<i>Suillus luteus</i> (brun.)
<i>Suillus subalutaceus</i>	<i>Suillus subalutaceus</i>
<i>Suillus acidus</i>	<i>Suillus acidus</i>
<i>Suillus intermedius</i>	
<i>Suillus neoalbidipes</i>	<i>Suillus glandulosipes</i>
<i>Suillus brevipes</i>	<i>Suillus brevipes</i>



Photo: Roger Smith

Photo: Roger Smith

### *Suillus glandulosus* (not *Fuscoboletinus*)

Cap up to 18+ cm diam., dome-shaped, slimy, dries in sun and wind, mid-tan to brown, dark brown with reddish tones. Slimy universal veil remnants hanging from cap, and forming fugacious veil. Pores very roughly radial, irregular and radially elongate, up to 5 mm longest axis, yellowish, darken with age. Stem dark below slimy ring zone. Yellowish above. Glandular dots not very evident. Flesh yellowish, stains very dark quickly after injury.

Ecology Fruiting peaks in Sept. Found in mixed fir and spruce woods. Most people favour spruce as its partner, but our observation would give fir the nod.

Comments Our only *Suillus* not growing with larch or pine (my guess, unconfirmed by root studies). Larch

is present in most of our woods, and its roots travel a long way, so it is possible that some undetected larch was present, but I am offering a loonie bet on fir.

Size, shape, colour and sliminess very reminiscent of *Suillus clintonianus*, but distinguished from it by the very large and irregular pores, even evident in young mushrooms (R lower photo), fugacious slimy veil and by its fir/spruce partner, not larch.

This is the species that has a three-way relationship with its tree partner and *Gomphidius borealis* (R upper photo) [See [OMPHALINA 5\(3\) 2014](#)].

Edibility Taste robust, good partner for moose. Turns black on cooking, but this does not alter taste. Young, firm mushrooms are best for eating, but older, softer or very slimy ones do well in soups, sauces, or duxelles.





***Suillus clintonianus* (not *grevillei*)**

(see also cover & title banner)

Cap up to 18+ cm diam., dome-shaped, slimy, dries in sun and wind, yellowish orange to brown, mostly dark brown with reddish tones; cap edge often lighter. Pores small, slightly angular, about 1–2/mm, yellow, darken with age. Stem dark reddish brown both above and below ring. Glandular dots not very evident. Veil fibrous with gelatinous covering, well developed, yellow, remains for long time. Flesh yellow.

Ecology Fruiting peaks end of Sept. Found in mixed coniferous woods., with larch, at times far removed from the host tree. Most common in troops and arcs on lawns, up to 10 m away from the edge of the woods, rare inside same woods.

Comments This is our commonest *Suillus*, found all over the province, wherever larch grows. We used to call it *S. grevillei*, but the latter is a yellow species (see next page). *S. clintonianus* may have fruiting bodies ranging from reddish brown to orange and yellowish orange making the two difficult to differentiate. Some years places that have regularly produced brown fruiting bodies will produce yellowish orange ones, complicating the differentiation further. Also similar to *S. glandulosus* (see comments previous page).

Edibility Taste robust, good partner for moose. Firm, young mushrooms are the best for eating. Older and very slimy ones can be used to advantage in soups, sauces, or duxelles.



### *Suillus grevillei*

Except for the yellow colour, the description is similar to that for *S. clintonius* (see previous page).

The two were thought to be color variations of the same species, but have been shown to form separate phylogenetic clades. Finland provides an interesting study for larch associated *Suilli*. Larch was not native there, but brought in from Russia. It thrived in the Finnish climate and spread to the forest together with its mycorrhizal associates. But while larch populated the entire country, *S. grevillei* and *S. clintonianus* differed in their distribution: *S. grevillei* is found in the southern and middle of the country, while *S. clintonianus* is found in northern Finland.

When Peck first found *S. clintonianus* in New York State in 1872, he described and illustrated it as “reddish brown or chestnut” in colour. Twenty-seven years later he described it as “variable in colour”, so that in addition to the “typical ... chestnut ...

specimens occur in which it is reddish yellow or even golden yellow.” Phylogenetic studies have confirmed both species in New York State, and investigators have attributed the yellow *S. grevillei* to introduction with imported larch. If this is so, such introduction must have happened around 1700, or earlier, for Peck to collect the species from the wild.

Pure yellow mushrooms are also found in the forests on NL. Historically our sparse population scattered outside St John’s has been very poor, unlikely to import trees, especially species common in our own woods. Yet the yellow mushrooms have been found in relatively remote wilderness locations, and are disproportionately rare in urban areas, presumed targets of most—if any—historically imported larch. Therefore, if our yellow ones also prove to be *S. grevillei*, it may be more likely that *S. grevillei* is not introduced, but native to northeastern North America. More studies needed. Stay tuned.



***Suillus ampliporus* (not *Fuscoboletinus cavipes*)**

Cap up to 18+ cm diam., dome-shaped, coarsely fibrous, dry, brown to golden yellow. Pores angular, elongated radially, slightly elongated, about 2-5 mm, long, white to yellow, darken with age. Stem emphatically hollow, white to yellow above the ring and brown below. Glandular dots not very evident. Veil fugacious, left as ring zone. Flesh white to yellow.

Ecology Fruiting peaks end of Sept. Found in mixed coniferous woods, with larch, at times far removed from the host tree. Often in small groups on lawns, up to 10 m away from the edge of the woods.

Comments This species is named *S. cavipes* in even up-to-date texts, because the distinction came in

2016, when the latter was recognized as an European species. Another very common *Suillus* species throughout the province, wherever larch grows. Dry, not slimy, as most are. Like *S. clintonianus/grevillei*, it also has spectrum from dark brown to various orange and almost pure golden yellow. The latter, not known to be genetically distinct, has been recognized at the variety level (*S. ampliporus* var. *aureus*). Yellow version more common in barren subtundra highland habitats.

Edibility Despite hairy cap and thin flesh of hollow leg, tastes quite good, stands up to meat. Firm, young mushrooms are best. May become somewhat gelatinous on cooking. Older mushrooms can be used to advantage in soups, sauces, or duxelles.



***Suillus paluster* (not *Fuscoboletinus*)**

Cap up to 5+ cm diam., dome-shaped, coarsely scaly-fibrous, dry, pink to deep red, fades brownish. Pores angular, elongated radially, resembling crossveined gills, somewhat decurrent, white to yellowish, darken with age. Stem white to yellow above the ring and red below. Glandular dots not very evident. Veil fugacious, left as ring zone. Flesh white to light yellow.

Ecology Fruiting peaks end of Sept. Found in moss of mixed coniferous woods with larch, at times far

removed from the host tree, often in troops.

Comments Much smaller, and not nearly as common as the previous four species, without a doubt, this is our prettiest *Suillus* species, found throughout the province, wherever larch grows. Colour and scaliness somewhat similar to *S. spraguei* (p. 16) and *S. spectabilis* (next page). Smaller than either; the former is a pine associate and the latter is a larger, slightly slimy larch associate bog mushroom, in *Sphagnum*.

Edibility I have not eaten it, but reported edible.



***Suillus spectabilis* (not *Fuscoboletinus*)**

Cap up to 16+ cm diam., dome-shaped, covered with warty brown to dark red scales on a yellowish to reddish pileipellis, somewhat slimy, with gelatinous veil material on cap edge. Pores angular, elongated radially, up to 4–5 mm long, straw coloured, darken with age. Stem white to yellow above the ring and red below. Glandular dots not very evident. Veil fugacious, left as gelatinous ring zone. Flesh straw to yellow.

Ecology Fruiting peaks end of Sept. Found singly or in small groups in *Sphagnum* bogs with larch.

Comments Larger than either *S. paluster* or *S. pictus*, and slimier than either, found throughout the province, wherever larch grows. It is difficult to live up to your name, and often this poor struggling mushroom comes short of the spectacular in appearance.

Edibility I have not eaten it, but reported edible.



### *Suillus grisellus* (not *Fuscoboletinus*)

Cap usually 4–5 cm diam., but can go up to 8+, conical, becoming flat with umbo, white-grey background, covered with adpressed beige-grey fibers. Pores angular, irregularly to radially arranged, up to 4+ mm long, markedly decurrent, whitish to grey, darken with age. Stem length usually almost twice cap diam., white above the ring zone and yellow below, rarely red. Glandular dots not very evident. Veil fibrous, white, fugacious, left as barely perceptible ring zone.

Flesh whitish.

Ecology Fruiting peaks Sept–Oct. Uncommon; does not fruit every year. Found in small groups or rings around larch in *Sphagnum* bogs.

Comments Although not as colourful as many of its relatives, a serious contender for consideration as our prettiest *Suillus*. Phylogenetically close to *S. elbensis* (next page), but morphologically quite distinct.

Edibility I have not eaten it, but reported edible.



***Suillus elbensis* (not *Fuscoboletinus*, and not *aeruginascens*, *laricinus*, *serotinus*, or *viscidus*)**

Cap up to 10+ cm diam., dome-shaped, dark brown to whitish grey, somewhat slimy, covered with adpressed darker fibers and scales; veil remnants hang from rim. Pores angular, irregularly to radially arranged, 3–4 mm diam., slightly decurrent, whitish, darken to greyish with age. Stem white to yellow above the ring zone and various degrees of brown below. Glandular dots not very evident. Veil fibrous and gelatinous, white, fugacious. Flesh whitish to yellowish with variable blue-geen-grey staining reaction.

Ecology Fruiting peaks Sept. Found in small groups or rings around larch.

Comments You really win with this one! Instead of three+ names and descriptions to remember, you only have one, and it rolls characters of all into one. Quite early on we became frustrated, trying to separate *Suillus laricinus*, *serotinus* and *viscidus*. Characters like colour, of cap, flesh, slime and staining did not fit as they should, and were often described differently by different authors. We decided to apply the name *serotinus* to all, until the issue was resolved. Now it is resolved, and the name is *elbensis* for all. The story is not necessarily over yet, and future research may dissect out different species in this group.

Edibility I have not eaten it, but reported edible.



### *Suillus bresadolae* var. *flavogriseus*

Cap up to 16+ cm diam., dome-shaped, dark brown to whitish grey, somewhat slimy, covered with adpressed darker fibers and scales; veil remnants hang from rim. Pores angular; irregularly to radially arranged, 3–4 mm diam., slightly decurrent, yellowish, darken to purplish grey with age. Stem yellowish white above the ring and yellow, becoming brown, below. Glandular dots not very evident. Veil fibrous and gelatinous, yellow, remains as ripped curtain from gill edge and some parts on stem. Flesh white to yellow, showing variable blue-geen-grey staining reaction.

Ecology Fruiting peaks Sept. Found in small groups or rings around larch. In NL so far only known from a limited range on the west coast. Ours was identified

from an [OMPHALINA](#) photo by Pierre-Arthur Moreau [[OMPHALINA](#) 6(3):20, Apr., 2015], so it pays to publish.

Comments If you think these photos belong to the mixed bag of species on the previous page, you are sharp, because this species is, indeed, in the *elbensis* (*viscidus*) group. The European var. *bresadolae* has a dark brown cap, but the North American, named after the colour changes of the pores, has a lighter cap. Neither variety has been sequenced, so that we do not know their phylogenetic status yet, which is why we recognize this as a separate taxon at this time. Its prominently yellow ring sets *S. bresadolae* apart from *S. elbensis*, as well as more yellow elsewhere, and a bit more purplish shade to the grey of the poremouths.

Edibility I have not eaten it, but reported edible.





Photo: Roger Smith

**Suillus americanus (not sibiricus)**

Cap up to 12+ cm diam., dome-shaped, yellow, slimy, sometimes variably covered with reddish brown streaks and patches; false veil remnants on rim. Pores angular, radially arranged, 3–4 mm diam., slightly decurrent, yellow, turn brown with age. Stem yellow with red-brown glandular dots and smears. No ring. Flesh yellow with variable purplish-grey staining reaction. All tissues stain red with injury, darkening to brown over time.

Ecology Fruiting peaks Sept. Found in small groups or rings around five-needle pine.

Comments The species is widely distributed globally, with some regional variation. However, for now it seems to be a single species, and *S. sibiricus* has been found to be conspecific with it, just a minor geographic variation.

Edibility Edible, but only the young firm ones are worth the effort (in my opinion).



Photo: Roger Smith



***Suillus spraguei* (not pictus)**

Cap up to 12 cm diam., dome-shaped, red, turning brownish-red, then pale. Cracks early, revealing yellow flesh through cracks, dry, whitish veil remnants hang from rim. Pores angular, radially arranged, 4–6 mm diam., slightly decurrent, yellow, turn brownish with age. Stem colour and texture much like cap. Whitish cottony ring. Glandular dots not evident. Flesh yellow with variable green-grey staining reaction.

Ecology Fruiting peaks Sept. Found in small groups around five-needle pine.

Comments Thought by some to differ from *S. pictus*, the conspecificity of the two has been confirmed, making pictus a synonym for spraguei.

Edibility Edible. Turns black, which turns some people off, but the taste is colour blind.



Photo: Roger Smith



***Suillus placidus***

Cap up to 10 cm diam., dome-shaped, white (or nearly so), turning yellowish with age. Cracks early, revealing yellow flesh through cracks, dry, whitish veil remnants hang from rim. Pores angular, irregularly to radially arranged, 2–3 mm diam., white, turn yellowish, moisture droplets in young specimens. Stem white, with multiple dark red glandular dots and smears; no

ring. Flesh white or very pale yellow staining reddish on exposure/injury. Note dark cinnamon spore print on R lower photo.

Ecology Fruiting peaks end of Sept. Scattered groups around five-needle pine.

Comments Only white *Suillus*. The old name is still good.

Edibility I have not eaten it, but reported edible.

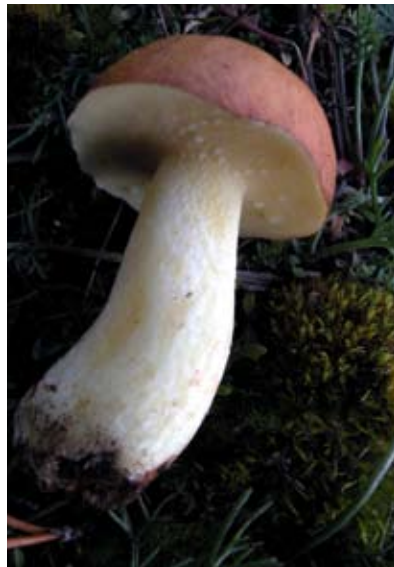


Photo: Roger Smith

***Suillus weaverae* (not *lactifluus*, not *granulatus*)**

Comments Fairly common. Lack of ring, densely prominent glandular dots, and no staining reaction will help identification. For a description, please turn to next page. *Suillus weaverae* is held to be the North American “equivalent” to the *S. granulatus* of Europe

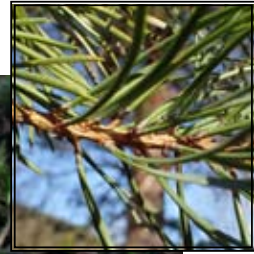
(see lower left photo from Estonia—and compare to photos next page). Although similar, the two species may have reliable macroscopic differences, but we have not seen enough to be able to define them, so for now we offer the same description for both. Phylogenetically, however, they are quite distant from



each other, so it is not surprising to learn that they have different tree associates: *S. weaverae* grows with five-needle pine and *S. granulatus* with two-needle pine.

We have collected specimens that fit the general description with both two and five-needle pine. Because these *Suilli* are quite species specific in their choice of photobiont, we use the tree associate to differentiate between the two. The assumption is that the five-needle associate (above) is the native *S. weaverae*, and the much more common two-needle pine associate (photos next page) is the European *S. granulatus*, brought here together with imported ornamental two-needle pine trees.

It will be interesting to see whether nuclear studies support this assumption. The two-needle pine associate has been identified both under imported ornamental trees, and in native red pine stands. It would be interesting to confirm the conspecificity of these two populations, and to look for evidence supporting the spread of the alien species from imported to native partners, if possible.



***Suillus granulatus* (not *weaverae*, but description for both)**

Cap up to 12 cm diam., dome-shaped, tan to light, slimy when fresh, often mottled; no veil remnants on rim. Pores roundish, tight, 1–2.5 mm diam., pinkish to pink-yellow, more purplish with age, moisture beads in young specimens. Stem even or widens at base, white, but yellowing, especially at top. Reddish brown glandular dots very evident, thin out toward base. No evidence of veil even in immature specimens. Flesh white, becoming yellow, no blue-green staining reaction.

Ecology Fruiting begins end July, peaks early Sept. Scattered in groups or rings around their respective pine of choice.

Comments We can separate *S. weaverae* and *S. granulatus* thanks to those keen collectors, who were able to specify on the collecting card which pine was the associate, and thanks to The FNL custom of keeping several specimens of a species, instead of discarding others with the same name as “redundant duplicates”. Later some *granulati* may turn out to be *weavers* instead.

Edibility Edible, tasty.



***Suillus luteus* (not *brunnescens*, not *borealis*)**

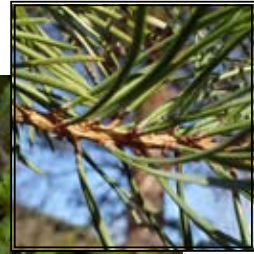
Cap up to 12 cm diam., dome-shaped, reddish brown or lighter; very glutinous but shiny when dry, compact feel; purplish grey veil remnants hang from rim. Pores round, tight, 1–3 mm diam., light straw, turn yellow, then olive in age. Stem about equal to cap diam., white and yellowing, purplish glandular dots above ring, purplish brown streaks below; prominent flaring ring with obvious purplish underside. Flesh white or pale yellow, not staining on exposure/injury.

Ecology Fruiting peaks end of Sept. Copious around

two-needle pine.

Comments Nguyen et al. determined that *S. luteus* is not native to North America; our closest relatives are *S. brunnescens* and *S. borealis*. Holotypes of these two turned out to be conspecific, giving the older name, *S. brunnescens*, priority. That species is a five-needle pine associate, whereas *S. luteus* is a two-needle pine associate. It is quite common under pine planted for landscaping, but has not been recorded in our native red pine stands, so likely all are imports. For some reason we have not identified *S. brunnescens* to date.

Edibility Probably the best tasting of our *Suilli*.



***Suillus subalutaceus***

Cap up to 14+ cm diam., dome-shaped, yellowish, mottled with brownish streaks, glutinous. No veil remnants on rim. Pores round to angular, 2–3 mm diam., yellow, turn brownish orange. Stem about equal to cap diam., yellow to orange No ring. Red-brown

glandular dots. Flesh yellow, turns orange.

Ecology Fruiting peaks Sept. Found in small groups around two-needle pine.

Comments Readily recognizable by its orange flesh. Much like *S. acidus*, except it has no ring.

Edibility I have not eaten it, but reported edible.



***Suillus acidus* (not *intermedius*)**

Cap up to 16 cm diam., dome-shaped, yellow to reddish brown, often mottled, glutinous (sour tasting). Fluffy white to yellow veil remnants on rim. Pores round to angular; 2–3 mm diam., yellow to orange, darken. Stem yellow to orange Fluffy whitish ring with gluten, may be fugacious. . Red-brown glandular dots. Flesh yellow, turns orange.

Ecology Fruiting peaks early Sept. Found in small groups around two-needle pine.

Comments Readily recognizable by its orange flesh and acid gluten. Much like *S. subalutaceus*, except *S. acidus* has a ring.

Edibility I have not eaten it, but reported edible.



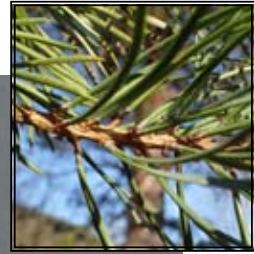


Photo: Roger Smith



Photo: Roger Smith



Photo: Roger Smith

***Suillus glandulosipes* (not *nealbidipes*)**

Cap up to 10 cm diam., dome-shaped, pinkish straw to light tan, darkening, glutenous., margin inrolled with fluffy white sterile tissue edging it. Fluffy white to yellow veil remnants on rim. Pores mostly round, 1–2 mm diam., straw to yellow, darken. Stem equal to or just longer than cap diam., white, yellowing at top, brown at bottom, bare with brownish glandular dots

late. No ring. Flesh white to light straw.

Ecology Fruiting peaks Sept. Scattered under two-needle pine.

Comments Recognizable by its relatively small size, fluffy white rim of sterile tissue around inturned cap edge, white stem, lack of dots until late.

Edibility I have not eaten it, but reported edible.



Photo: Bill Bryden



Photo: Bill Bryden



Photo: Roger Smith



Photo: Roger Smith



Photo: Bill Bryden

***Suillus brevipes***

Cap up to 10 cm diam., dome-shaped, yellow-tan to reddish brown., Fluffy white to yellow veil remnants on rim. Pores mostly round, 1–2–3 mm diam., straw to yellow, darken a little. Stem equal to cap diam., white or pale yellow, brown toward bottom. Glandular dots usually not visible or white and small. No ring. Flesh

white, yellows with time.

Ecology Fruiting peaks in Sept. Found in small groups under two-needle pine, occasionally cespitose.

Comments Looks a bit like *S. granulatus* without the glandular dots. Also like *S. glandulosipes*, but without the white, fluffy sterile tissue around cap edge.

Edibility I have not eaten it, but reported edible.

# MEET THE FAMILY



Are you still with us?

If so, it is time you met the rest of the *Suillus* family. Every group has some members who differ from the rest so much that the naïve and unsuspecting can be fooled into thinking they do not belong. So it is with *Suillus*. Were these pages your first introduction to the genus, you would think it is related to other slimy stem-and-cap mushrooms with pores. As a faithful reader of [OMPHALINA](#), not for you, this trap for the unwary. Already four years ago ([OMPHALINA](#) 5[3], Mar, 2014) you read here that the *Suillus* arm of the

bolete tree gives rise to several other genera, that do not look like boletes at all. In NL we have collected species from three genera that branch off the *Suillus* arm: the (false) truffle *Rhizopogon pseudoroseolus* (title banner, above), and species from two genera of gilled mushrooms: *Chroogomphus ochraceus* (left, below), and the genus *Gomphidius*, with four species found in the province, the commonest being *G. borealis* (right, below). You may want to turn back to that issue now and refresh your mind [/tmp/PreviewPasteboardItems/O-VIII-7.pdf](#), as well as glimpse the family tree again.





# The Bishop's Sketchbook



# The New Newfoundland and Labrador Chanterelle T-shirt is Now Available



This shirt has been produced by Foray NL to commemorate a new mushroom identified as a result of work based on NL specimens.

The shirt features a reproduction of a watercolour by Glynn Bishop illustrating the newly-named Newfoundland and Labrador chanterelle (*Cantharellus enelensis*) See the front cover and article in **OMPHALINA** Vol. VIII, No. 4, June 2017.

The image is printed on a forest green, Gildan, 100% cotton shirt. The shirts are available in a full range of sizes from S to XXL.

Cost: \$25.00, plus shipping.

If you would like to order a shirt, please contact Glynn Bishop at [fozmos“at”gmail.com](mailto:fozmos@atgmail.com); write to 1856 Topsail Rd. Paradise, NL, A1L 1Y7; or phone (709) 781-1382 (evenings), or (709) 687-7604 (daytime).

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Register for the foray as soon as the notice comes out, and thank them personally once you arrive, since all will be in attendance. Once hobnobbing with the faculty anyway, thank members of the non-*Suillus* faculty for their services as well. Then thank the outgoing editor with a small token flask of the finest Cognac.

# OUR PARTNER ORGANIZATIONS

## People of Newfoundland and Labrador:

**Department of tourism, culture, Industry & Innovation**

**Provincial Parks Division**

**Department of fisheries & land Resources**

**Wildlife Division**

**Center for forest Science and Innovation**



## People of Canada, through

**Parks Canada**

**Gros Morne National Park**



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Canada

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## The Gros Morne Co-operating Association



## Memorial University of Newfoundland

**St. John's Campus**

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## Tuckamore lodge





**FORAY**  
NEWFOUNDLAND  
AND LABRADOR

**2018**  
*The second decade*

## AVALON PENINSULA

Burry Heights Camp and  
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Salmonier Line, Sept 28-30, 2018

### Guest faculty (tentative)

Peter Kennedy  
Renée Lebeuf  
Sunny Liao  
Nhu Nguyen  
Roger Smith  
Greg Thorn  
Rytas Vilgalys

*Get to know our MUSHROOMS & LICHENS!  
See our website April/May, 2018, for  
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