



Henk van der Gaag, who wrote the articles and drew the illustrations that start on page 3, was born in the Netherlands in 1926. He learned about mushrooms first from his father, then from being a member of a youth nature study group, and later from the Dutch Mycological Society. He spent two and a half years with the army in the Dutch East Indies (now Indonesia) where, not seeing many fungi, he assembled a small herbarium of native plants that is listed in Flora Malaysiana. He then worked at an institute for horticultural research before emigrating in 1956 to Canada, where he worked in cancer research at the University of Toronto, Ontario. The Mycological Society of Toronto has been fortunate to have had Henk as a member since 1988, and he is invaluable at their annual Cain Forays, where all the small and difficult mushrooms are promptly dispatched to Henk and his microscope for identification. He is now retired and living in rural Udora, not far from Toronto.

—Tony Wright



A Compendium of Work by Henk Van der Gaag

Dr. Nancy Ironside, a NAMA member from Orillia, Ontario, brought Henk's work to our attention. As a member of the Mycological Society of Toronto, she had long enjoyed Henk's articles and drawings in the club's newsletter and wished that they would eventually find a broader audience. In addition, sincere thanks go to Tony Wright, the current editor of the MST newsletter, for his exhaustive help in assembling the articles and drawings for this issue.



INOCYBE COOKEI. BRES.

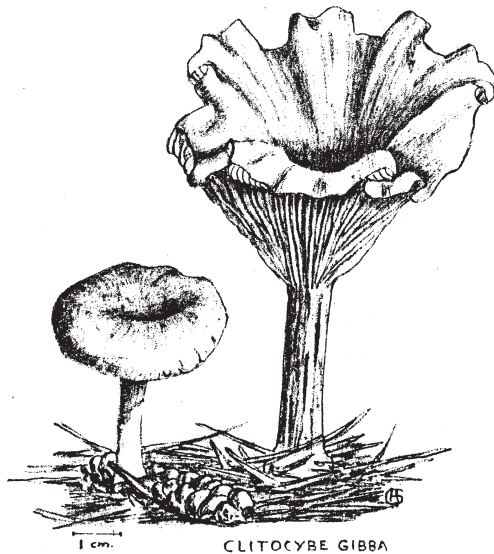
AD01, 1991/4, *Inocybe cookei* Bres.

Around our cottage in Udora, Ontario, we are blessed with many Fiberhead (*Inocybe*) species. Identifying them can be rather frustrating or impossible. One that did key out nicely was *Inocybe cookei*. These were found August 1st, 1991 after some heavy rains. This species has some rather distinct features. First of all, the microscopic ones. The spores were smooth, bean-shaped, and rather small. There were no cystidia on the gill

surface, only on the edge of the gills (cheilocystidia). Those were club-shaped and thin-walled. The cap color was straw-ochre yellow, the stem white to light straw-yellow and ended in a more or less distinct marginated bulb. They were growing under white cedar and birch.

AD02, 1995/1, What's wrong with this picture?

[Henk van der Gaag submits the following puzzle.] Take a look at this drawing of two *Clitocybe gibba* below, and figure out what's wrong with it. Answer is below. No peeking.

**Puzzle solution:**

Clitocybe gibba or *infundibuliformis* are not supposed to grow under conifers. But perhaps not all *gibbas* adhere to that rule. Of course, *Clitocybe squamulosa*, which are similar although they have small scales on the cap, do grow under conifers. *Clitocybe gibba* appear in July, have a smooth reddish-tan, funnel-shaped cap, and are edible.

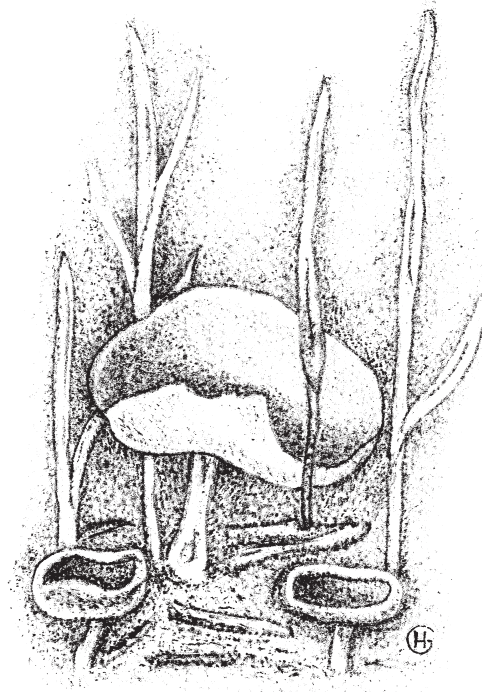
AD03, 1995/4, *Helvella villosa*

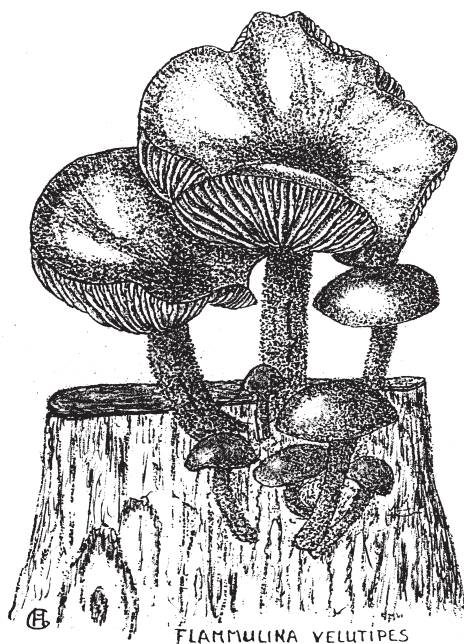
This interesting little elfin cup is easily overlooked. It is brownish-grey on the inside, where the spores are formed, and lighter grey on the outside, which is covered with fine hairs. *Helvella macropus* is a similar species and probably more common here. The best way to distinguish them is by the spores. *H. villosa* spores are oval, with one large oil drop. Those of *H. macropus* are longer, more spindle-shaped, with one large and two small oil drops. These species used to be grouped with the cup fungi (peziza), but cup fungi don't have oil drops in their spores. Helvellas do. I found these specimens in August at my cottage in Udora under spruce and birch.

AD04, 1996/1, *Flammulina velutipes*?

When I made this drawing [see next page], there was no doubt in my mind that it was of a *Flammulina velutipes*, the Velvetfoot or Winter mushroom. Until recently, you have seen only one species of *Flammulina* described in most guides. Most of you probably know this common species, which grows in clusters on dead wood in late spring or winter. With its glistening, viscid cap, rusty brown in the center and yellow towards the margin, and the typically velvety stem, it is hard to miss and hard to confuse with any other species.

But when I looked in *Mushrooms of Western Canada*, a well-known guide written by Helene Schalkwijk-Barendsen, another species was mentioned, *Flammulina fenae*. The only significant difference is in the spore size. The Q ratio—the average length divided by the average width of the spores—is less than 2 in *F. fenae*. When I read that, I proceeded to recover some of the *Flammulinas* from under the snow (they can withstand frost) and did a series of measurements. Wouldn't you know, the Q was 2.0 (spore size 7.1 long divided by 3.5 wide). So, it wasn't *F. fenae*, but the old *F. velutipes*, although it wasn't conclusive.

Helvella villosa



FLAMMULINA VELUTIPES

Why was I so interested in this *F. fennae*? Well, it is the name. The Dutch mycologist C. Bas named this species after his wife Fenna. Now, I happen to know Fenna. We used to live on the same street and our respective parents were friends. We lost contact when I emigrated to Canada. Just last September, we met again. It was great to see Fenna, but she didn't mention her mushroom. But now we can no longer confidently say, "This is *Flammulina velutipes*" without checking the spores first. But don't blame my friend Fenna for that!

[Editor's Note: Henk recently confirmed that he has not yet found *F. fennae* in North America.]

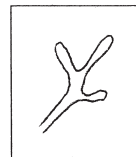
AD05, 1996/2, *Flammulina fennae*, Again . . .

The November '95 issue of *The Mycologist* happens to discuss *Flammulina velutipes* and *F. fennae*. In addition to the difference in spore size that I described in the January–March '96 issue of *Mycelium*, there are some other differences to distinguish the two species. *Flammulina velutipes*, for one, is reddish brown in the center of the cap, while *F. fennae* is a lighter ochraceous brown. Another microscopic difference is that *F. fennae* lacks—hold on, now—"coralloid hyphidia in the

ixotrichodermium." That sounds worse than it is. Let me translate.

- derm = skin, so "dermium" refers to the outer layer or cuticle of the cap.
- trich = hair or fiber, and a trichoderm is a type of dermium with the fibers more or less upright.
- ixos = Greek for a viscous substance. Therefore an ixotrichoderm is a cuticle with the hyphae embedded in a slimy or gelatinized medium. That makes the cap of a *Flammulina* so fatty and sticky.
- Coralloid hyphidia are special branched hyphae, shaped like antlers.

All that seems quite straightforward on paper, but, in practice, I have found it difficult to locate any of those special hyphae in *F. velutipes*. In several sections, I located only two, one shaped like the accompanying drawing.

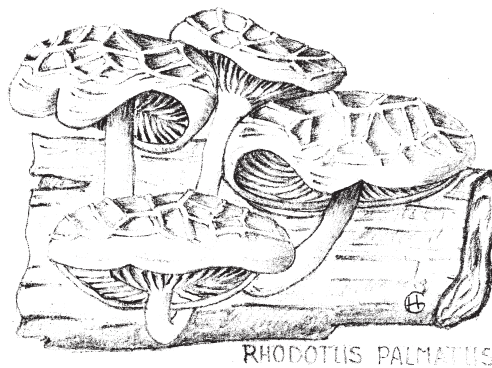


AD06, 1996/2, *Rhodotus palmatus*:

The Lonely Mushroom

The *Rhodotus palmatus* is a striking but very lonely mushroom. It has no close relatives among the population. It was once placed among the *Pleurotaceae*, the oyster family, for want of anything better. Now, by creating the *Rhodotaceae* family, it has been given special status, but with only one genus and one species—the *Rhodotus palmatus*. (Some mycologists, however, regard this mushroom as a subfamily of the *Tricholomataceae*.)

The reason for this special status is that the mushroom shows all kinds of unique features. The color is a rare pinkish-apricot. The cap surface has a network of ridges and the cap is



RHODOTUS PALMATUS

of a rubbery consistency because the hyphae are partly gelatinized. The name “palmatus” refers to the network of ridges, supposedly resembling the pattern of lines in the palm of the hand. The spores are a creamy-pinkish, almost round, and warted. They resemble those of the *Rhodocybes* but, as it turns out, the structure of the spore wall and that of the warts are again different from any other spore types. The thickish gills and slender basidia remind one of the *Hygrophorus* species, so those may be the closest relatives.

The name “Rhodotus” always brings back special memories for me. In Holland, when I was a boy (long ago), I remember spotting an oddly colored mushroom with strange ridges on its cap. Even then I realized that it was something special. My dad made a drawing of it and sent it to the mycologist at the Leiden Museum. It was promptly identified as *Pleurotus rhodotus*, or *semi-palmatus*, the then-current name for *Rhodotus palmatus*. It was regarded as very rare and was probably imported together with wood from North America. Now it is more common in Europe, mainly because Dutch elm disease supplies so many dead elm trees. Elm is the favorite food for this fungus. And now I have found this mushroom again at my cottage in Udora on old elm logs. Nevertheless, in North America, this mushroom, although widely distributed, is not common. My observation is that it appears not every year and not more than once on the same log.

AD07, 1996/3, *Tubaria furfuracea*

The *Tubaria furfuracea* are little brown mushrooms, derisively called “totally tedious” by David Arora. But then, it appears that Arora doesn't seem to like any little brown mushrooms (LBMs). I, however, enjoy seeing them. They are the first signs of a new mushroom season. Last year they appeared April 23; this year they came a bit later, May 2, at the same spot. This spot is around the wood chopping block at my cottage in Udora. The *Tubaria furfuracea* grow happily in large numbers on wood chips, despite the cold weather.

The cap of this mushroom is a nice cinnamon brown, with a striated margin when moist. But the color fades when the mushroom dries up. The surface also becomes a bit scurfy.

Tubaria furfuracea



Small white patches near the margin, remnants of the veil, often decorate the cap. A common name, therefore, is “Fringed Tubaria.” The Dutch name is Donsvoetje, meaning “Downy feet.” That refers to the base of the brown stem, which features white mycelium “socks.” The Latin name “Tubaria” comes from “tuba,” meaning “tube.” Tubarias can become a bit funnel-shaped when older. “Furfuracea” is derived from “furfur,” which is “scurf” or “scale” and the suffix “acea” denotes “resembling” or “made of.” The gills are also brown and adnate or almost decurrent. The spores are a pale ocher brown.

Tubaria furfuracea is probably not so rare, although you rarely see it mentioned in foray species lists. Graham, in his book *Mushrooms of the Great Lakes Region*, published in 1944, states, “The genus *Tubaria* is not yet found in this area.” It is probably overlooked. Except for morel hunters, not many people are looking for mushrooms so early in the season. But you can find the species throughout the season, especially after a cold spell. As a genus, the Tubarias are poorly researched. There are around 20 species in North America, fewer in Europe. But there is a lot of confusion among the species and the taxonomists. If you look at descriptions of *Tubaria furfuracea*, you can find differences in spore and cystidia shapes, spore color, cap size, etc. The mushroom is not listed as edible, but it is also not poisonous.

AD08, 1996/4, *Coprinus xantholepis*

We are all familiar with the *Coprinus* genus, the Inky Caps. The Shaggy Mane, *Coprinus comatus*, was the first mushroom I could put a name to. *Coprinus atramentarius*, the one that you should not eat if you are consuming alcohol, is also well known. Then, there are the smaller ones, like *Coprinus disseminatus*, which grows in large clusters on wood, and the graceful *Coprinus plicatilis*, the Japanese umbrella Inky.

Coprinus is, however, a fairly large genus. Moser, in *Die Roehrlinge und Blaetterpilze*, describes about 80 species, large and small, with the small ones being the more numerous. I did not realize that until two years ago, when Jack Parkin suggested I contact a fellow in the Netherlands who is becoming a *Coprinus* authority.

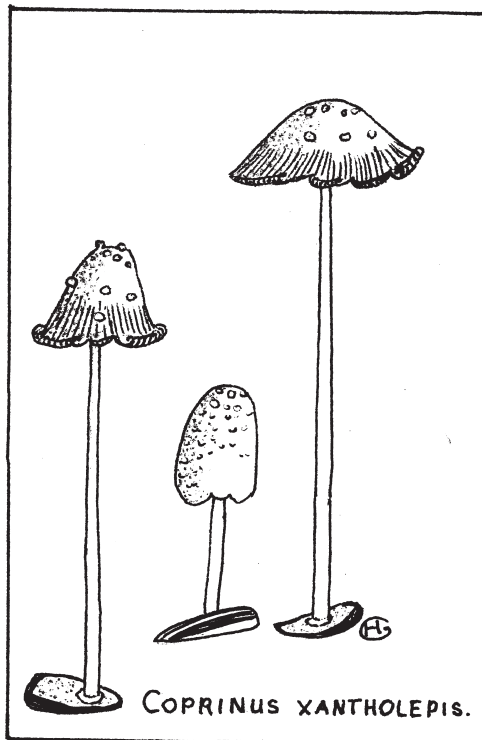
Kees Ulje became a mycologist by accident. He was a bricklayer and taxi driver until he injured his back and could no longer lay bricks or drive a taxi. His brother got him into computers, but Kees was always interested in fungi. Dutch mycologist C. Bas urged Kees to tackle the small *Coprinus* species, a neglected group. Being a poor sleeper, Kees often goes on forays early in the morning, thereby finding tiny species that are

usually gone by sunrise. He is publishing his findings in neat booklets—five so far—with detailed descriptions and fine drawings. Although they are in Dutch, most of the material is also published in English in the journal *Persoonia*.

A total of about 120 *Coprinus* species have been described, of which 27 are new ones. So, even in Europe, with its long tradition of mycology, there is still a lot to be discovered, and you don't have to be a professional mycologist to contribute.

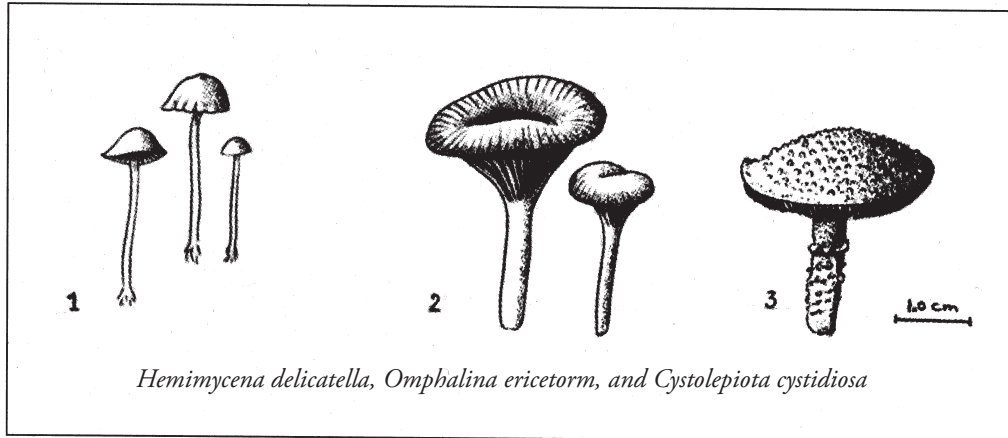
The species illustrated here is *Coprinus xantholepis* ("xantho-lepis" means yellow scales). I found it this summer under a bird feeder hanging from a white cedar tree. The mushrooms were growing on the empty shells of the sunflower seeds. They are almost pure white, with light ochre or white fluffy floccules, the remains of a velum. This species belongs to a subsection of *Alachuani* (*Herbicola*), which is characterized by branched hyphae of the velum. If this species has been found before in Ontario or even North America, I haven't yet heard about it. It is originally described as being from England but is rare even there. But it is supposed to grow on grass or weeds.

I also collected two other species, *Coprinus callinus* and *Coprinus leiocephalus*, at my cottage near Udora. But those are known North American species. If you ever encounter any small *Coprinii*, please dry them and mail them to me (Henk van der Gaag, General Delivery, Udora, ON, LOC 1L0). They dry easily, for example, under a desk lamp.



AD09, 1997/1, December Surprises

The unusual periods of mild weather in December 1996 extended last year's mushroom season, at least around my place. In mid-December we had a week where temperatures were well above the freezing mark; there was no snow and, in fact, the ground was not frozen yet. And we're talking about 60 kilometres north of Toronto. Some mushroom species took advantage of the mild spell. Under a balsam (abies) tree, instead of white snowflakes, I found a large number of tiny, white *Hemimycena delicatella* (Fig. 1 in the accompanying drawing). These little gems are generally chalk white all over, although a few had a slightly creamy disk. Their gills are free or almost so, and



the stem is attached to the substrate—needles, in this case—by white hairs.

Nomenclature Mania

Further along, in an open field with mosses and lichens, I found a gathering of *Omphalina ericetorum* (Fig. 2), also called *O. umbellifera*, *Gerrone-ma ericetorum* or the latest appellation, *Phytoconis ericetorum*. The smaller the mushroom, the more names it seems to get. These are small Clitocybe-shaped, with a buff to brownish striated cap. The distant gill and the stem are concolor or a bit lighter. They are hardy things that can live even in the Arctic Circle.

Nearby I found a couple of small *Lepiotas*, which were dull white. The cap was covered by loose, powdery granules. This placed them in the difficult *Cystolepiota* group. Their stems had a white flocculose ring and, below that, the stem was covered with white granules. This specimen is probably a *Cystolepiota cystidiosa* (Fig. 3), a species known from the Great Lakes area but, apparently, not seen very often.

AD10, 1997/2, A Gathering of *Galerinas*

As you know, there are thousands of different mushroom species, but what really constitutes a species? What is the definition of a species? Well, a cynic might say: a species is what a good taxonomist calls a species. A more refined description would be a group of individuals with common characteristics that differ in two or more unique ways from other such groups. Those characteristics turn out to be mostly morphological. It would be

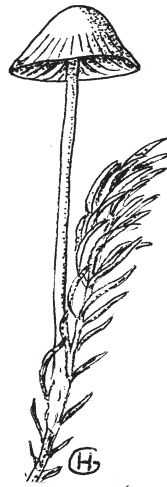
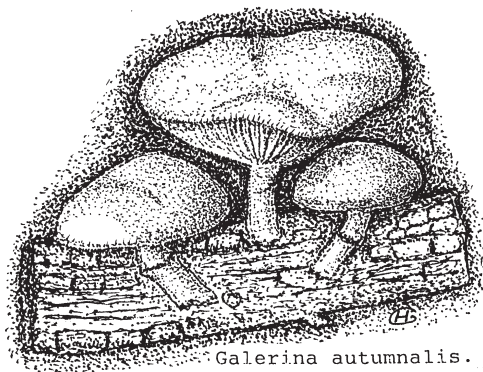
nice if genetic ones could also be used but with most fungi that is simply not feasible.

There are strict rules governing the naming and describing of species. Since 1953, any new species has to be described and published in Latin with a herbarium specimen (the *typus* or *type*) deposited. For older names, the general rule is that the oldest one is the accepted one. This rule gives rise to the annoying name changes. For, when an older name is rediscovered, the present one has to be changed to the older one. But there are, of course, many other problems. Some species are poorly defined and no herbarium material might exist, or the type turns out to actually consist of more than one species. So, changes have to be made from time to time.

But concepts about certain species also seem to slowly change over time. That's what I found when I tried to key out some *Galerinas*. *Galerina* is a difficult genus and I don't have access to monographs such as Smith & Singer's, which describes 199 species of *Galerinas*. But let's look first at the *Galerina autumnalis*, the one depicted here. That one is important to know for it is harmless-looking but very poisonous. The cap is dark brown, fading to a rusty brown and yellow. When moist, it is sticky and striated. The gills are attached (adnate), yellowish, and becoming brown from ripening spores. The stem is whitish above, but dark brown with some white appressed (flattened) fibrils below a small ring. But the ring often disappears. They grow in small groups on rotten wood and as the name suggests, mostly in the fall. They are sometimes confused with small Honey mushrooms (*Armillaria*) or Velvet Foot (*Flammulina*) but those have white

spores. A very similar one is *Galerina marginata*. That one is more common in Europe. The main difference lies in the non-sticky cap of this species. It is best observed by gently breaking a cap in half and slowly separating the two parts. In the case of *G. autumnalis* a thin sticky film (pellicle) will be visible.

But this summer, I found some other *Galerinas*, also brown and with a ring, but smaller and more slender. And they were not growing on wood, but in between hair-cap moss (*Polytrichum*) on dry sandy soil. The name I came up with was *Galerina unicolor*. The strange thing is the way the description of its habitat seems to have changed over time. For example, Moser, 1952: growing on wood; Pomerleau, 1980: on stumps and wood debris; Moser, 1978: on rotten wood, rarely between mosses along brooks; Bon 1987: found in wet meadows; Hansen & Knudsen, 1992: among grass, herbs, mosses, not in particularly moist places. There you are. That last description fits my species pretty well. But, as you can see, this species seems to have changed from a habit of growing on wood, to one on wet soil to one on dry soil. The original description is very old and came from Vahl (this could be an abbreviation). Later on, this species was entered by E. Fries in his *Systema Mycologicum*, but that was in 1821! Now I'm just wondering if the mushroom itself evolved or if the mycologists changed their minds. What do you think?



Galerina dicranorum
on *Dicranum scoparium*

AD11, 1999/2, Moss and LBMs Go Well Together

Everybody notices red *Russulas* among green moss, but small brown mushrooms, in moss or otherwise, are usually overlooked. LBMs, as Little Brown Mushrooms are collectively called, can however also look quite decorative, especially in moss. One large group of LBMs belongs to the *Galerina* clan. They can look very elegant with their tiny bell-shaped caps on long slender stems. Instead of Little Brown or Boring Mushrooms, you might even call them Little Brown Marvels, to quote a much friendlier name used by John Neville in his

LBM article (*McIlwainea*, vol. 12, no. 2, 1996).

True, they can be frustratingly difficult to identify. But although being small they nevertheless have a number of clear distinctive features, unfortunately mostly microscopic ones. The spores are surprisingly large and come in different styles and sizes. They can be smooth or ornamented, with or without a pore, with or without a plage (a smooth area near the base of the spore) and sometimes have a calyptra (a loose-fitting "hood" over part of the spore). There is also a nice selection of cystidia available. Most of the species grow in wooded areas, on wood, soil, plant debris or humus and quite a number prefer moss. These are sometimes named after the mosses they are found with, e.g. *Galerina leucobryum* (on *Leucobryum* moss), *G. mniophila* (on *Mnium*), *G. sphagnicola* (on *Sphagnum*), *G. hypnorum* (on *Hypnum*), and *G. dicranorum* (on *Dicranum*).

At the Jack Parkin Memorial Foray last fall we did encounter some *Galerinas*. One was associated with *Dicranum scoparium* or Broom Moss (scopa=broom). This is a common moss around here and is easy to recognize. The stems are upright and the leaves are bent in one direction, like they are windswept. The name Broom Moss is apt because they remind one of an old fashioned broom made of birch twigs. The fact that this *Galerina* did grow on Broom Moss does not necessarily make it into a *G. dicranorum*.

Most Galerinas do not limit themselves to one particular moss species, but when I checked the spores, cystidia and other features, they matched nicely with those described for *G. dicranorum*. The spores were of the basic model, with none of the options like warts, plages, pores or calyptra. They were smooth 10–10.5 x 5.5–6.5 µm. The cystidia were quite variable and hard to describe, something like slenderly fusiform and flexuous. The cap was a nice ochre to reddish brown and translucently striate, but most Galerinas are that anyway.

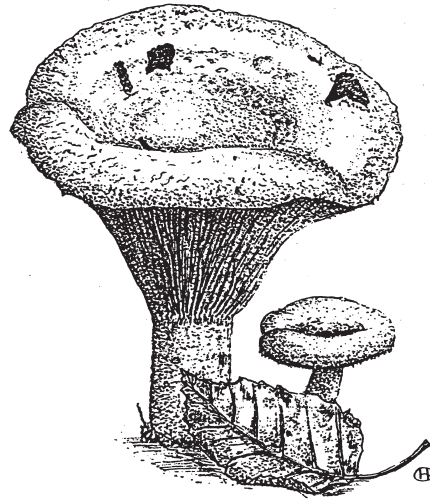
Why do these Galerinas grow on moss? Some may be parasitic; others may just like the moist environment the moss provides. The *G. dicranorum* was tightly attached to the moss stems with mycelium, but the moss did not seem to suffer from it. So it is hard to tell what their relationship is.

AD12, 1999/4, Mushrooms in Review: A Closer Look at the New Barron Guide

By now, most of you should have a copy of the new *Mushrooms of Ontario* guide by G. Barron, which was reviewed extensively by MST member Richard Aaron in the last issue of the *Mycelium*. It is a useful guide with quite a number of species not seen in other guides. You will also encounter a number of name changes. While most of these “new” names are or will be accepted by most mycologists, some, like *Pluteus atricapillus* for *Pluteus cervinus*, will not. The *Pluteus atricapillus* name by Batsch, 1786, was reintroduced by R. Singer. But the British mycologist P.D. Orton, for one, claims that the identity of that species is uncertain, its description having been based on an invalid work by L. Secretan. For now, I suggest we keep to the familiar name *Pluteus cervinus*.

Looking through the Russulas I noted that Barron claims that *Russula xerampelina* also goes by the name *Russula atropurpurea*. That is not correct. Both species have dark red or purplish caps, but *R. xerampelina* has a yellow-ochre spore print while *R. atropurpurea* has white-yellow spores. Additionally, the latter, better known as *R. krombholzii*, does not have the fishy smell or the green reaction to FeSO₄ of *R. xerampelina*.

It was a surprise to see the name *Lactarius deliciosus* used, just when it seems agreed that the



LACTARIUS TORMINOSUS

North American species is not the real *Lactarius deliciosus*, but a less tasty *Lactarius deterrimus*. I don't know who it was that decided we had been wrong, all along. Maybe we weren't? These two species, which both occur in Europe, were originally regarded as one species, then as varieties, *Lactarius deliciosus* var. *deliciosus* and var. *deterrimus*. Hesler and Smith in *North American Species of Lactarius*, 1979 and later, Phillips in *Mushrooms of North America* included both these varieties. The main differences between the two species are that *L. deterrimus* has a less zonate cap and usually shows a white band at the top of the stem. The milk and flesh turns slowly from orange to wine red. The whole mushroom is also more liable to turn green. The milk of *L. deliciosus* stays carrot-colored before fading to dull green. Also *L. deliciosus* is, as I am told, “deliciouser!”

In general, the photographs in this guide are excellent, but the one of *Lactarius torminosus* does not do that species credit. *L. torminosus* is salmon-pink-colored with indistinct darker bands. The one pictured looks much more like *L. pubescens*, which is creamy white and not zonate. Compare that picture with one of *L. deterrimus* in Bessette, Bessette, & Fisher, page 295. Almost identical! But maybe *L. torminosus* is just not photogenic. The picture in the Audubon guide is worse, showing an almost completely white mushroom. If you get a chance, look in *Mushrooms of Britain and Europe* by Phillips, on page 78, with both species side by side and you be the judge.

Barron also gives us the latest scoop about the *Collybia* genus. It is apparently split up into three genera. But I don't think that *Gymnopus subnudus* formerly *Collybia subnuda* has changed its spore color from white to brown. Every work of this size and nature carries its share of minor mistakes and this one is no exception, but all in all it's a welcome addition to any collector's library. If you don't yet have it, then I recommend you buy it at the next MST meeting.

AD13, 2000/1, *Melanophyllum haematospermum* and *Leucopaxillus subzonalis*

Now how is that for fancy names? *Melanophyllum haematospermum* also called *M. echinatum* and *Leucopaxillus subzonalis* formerly named *Clitocybe pulcherrima*. These are the names of two of the many interesting mushrooms we collected on the identification foray, September 26, 1999, at Durham County Forest near Uxbridge.

The *Melanophyllum* I happen to remember from Holland a good 40 years ago, which is an indication of how remarkable they are. Finding them is another matter. Their caps are small, 1–2 cm, with a granular, powdery, dull brown surface which makes it hard to see them among weeds and leaves. But when you do find them and turn them over, you discover startlingly wine red gills. The stem is covered with a brown powder actually composed of sphaerocysts, which rub off easily to expose a purplish red stem. The Dutch name for this species is "Verkleurzwam," which means "dis-

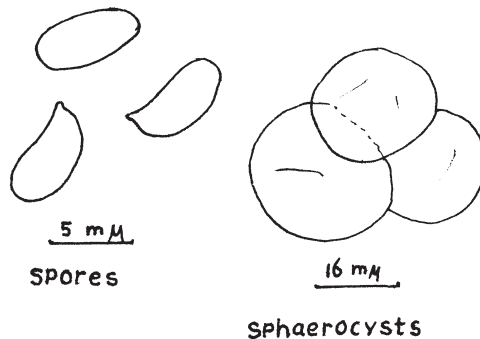
coloring mushroom," which refers to the spores. They are initially light greenish ochre, especially when collected in the dark, but turn a dark red when exposed to light. So the name *haematospermum* or "blood red spores" is very appropriate. The other name *echinatum* or "spiny like an echinocereus cactus" also refers to the spores which are slightly punctate. *Melanophyllum*, or "black gills," describes the fact that the gills turn black when dried. So you see, the fancy names do make sense.

Before they became *Melanophyllums* various authors placed them among *Lepiota*, *Psalliota*, *Cystoderma*, *Psathyrella* or *Chrysosperma* genera. But they did not really fit in well, so now they have their own genus together with two other displaced species. They are widely distributed in North America and Europe but remain quite rare.

The *Leucopaxillus* was one of the mushrooms we were unable to identify at the foray. It resembled a yellowish *Clitocybe* with its yellow decurrent gills, and slightly depressed center. As it turned out, that was not a bad guess. I took them home for a closer look, starting with the spores. They were white and had small spines that right away pointed to the genus *Leucopaxillus*. The spores were also small and almost round which, together with the yellow color, made it *Leucopaxillus subzonalis*. The whole mushroom, cap, stem, gills and flesh are yellow. Not a bright yellow but more a soft creamy yellow ochre. Peck first described this species in 1874 under the name *Clitocybe subzonata*. The type species was found in Croghan, New York. In 1908 it was reported in the *Journal of Mycology* under the name



Melanophyllum haematospermum

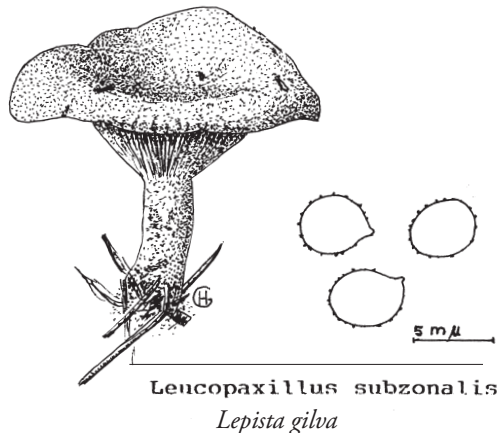


Clitocybe pulcherrima, the “beautiful” Clitocybe. The genus *Leucopaxillus* was not yet recognized in Peck’s time. Boursier established it in 1925, and it was up to Bigelow to rename Peck’s species to *Leucopaxillus subzonalis* (Peck) Bigelow. It has been reported in New York, Massachusetts, New Hampshire, and Michigan as well as Finland. I don’t know if it has been found previously in Canada. Pomerleau does not describe it. Has anyone else seen it in Canada?

AD14, 2000/2, Pardon My Mistake

Winter is the time to go over last season’s foray lists and notes, to check out the microscopic features of dried specimens, and to attempt to identify those mushrooms that stumped you before. In doing these things I realized I was incorrect in my identification of the *Leucopaxillus subzonalis* described in the previous issue of the *Mycelium* (Volume 26 No. 1). As a *Leucopaxillus* the spores should have been amyloid, meaning that the spore walls turn blue-black in a special iodine solution known as Melzer’s. Originally, I thought that the spores were weakly amyloid, akin to the spores of *Leucopaxillus giganteus*, but when I rechecked the spores turned out to really be non-amyloid. So that rules out *Leucopaxillus* and makes it a *Lepista*.

Lepista gilva has the same overall features of *Leucopaxillus subzonalis*. The spores are non-amyloid but also rounded, warted and only 4–5 microns. The cap is 4–8 cm with a central depression, and the cap and the stem are pale yellow to light ochre. The decurrent gills are pale yellow. The



cap sometimes shows brown spots. Is it a common species? It is in Europe, but in North America it is reported only occasionally. Pomerleau described it for Québec, and I have seen it on a foray list of the Montreal Mycological club. Schalkwijk-Barendsen (*Mushrooms of Western Canada*) found it in Northern Alberta, and interestingly, McIlvaine (*One Thousand American Fungi*) describes both the *Leucopaxillus* and the *Lepista* on the same page.

There is another species that looks like a reddish-orange-brown version of *Lepista gilva*, and that is *Lepista flaccida*, synonym *L. inversa*. Some mycologists now believe that *Lepista flaccida* and *L. gilva* are actually one species. Under dry conditions, as we had last fall, you see the yellow form of *L. gilva*. Under more humid conditions you see the yellow with brown spots or the red-brown *L. flaccida* but no sexual compatibility tests have been done, as yet.

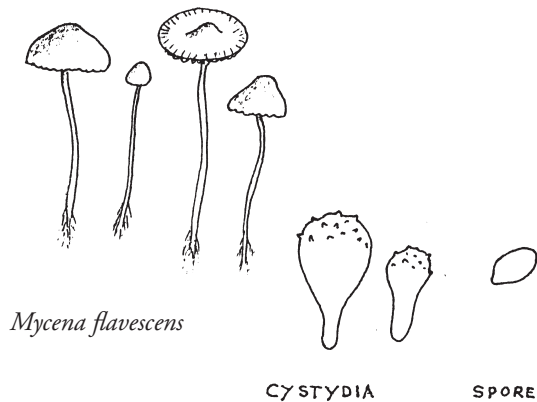
AD15, 2000/4, *Mycena flavescens* Vel.

Chasing down the name of a mushroom can be a real challenge. Often you end up disappointed, frustrated, and nameless. But when you succeed it is a really satisfying experience. Of course you must start with proper guides, but even with these at hand you can still miss the boat. It is easy to overlook certain aspects of your mushroom, resulting in looking at the wrong groups. That was almost the case with my *Mycenas*.

There was no doubt they were *Mycenas*, small (aren’t they all?) with a conical cap on a long thin stem and white spores. The caps were 0.5–1.5 cm, the stem 3 cm long and only 1 mm thick. The cap color was a dirty white, becoming greyer when older and sometimes with a bit of a yellow-green hue. The gills were creamy-white and the stem drab grey, all in all, not very attractive. The microscopic features were more specific. The cystidia, often hard to find in *Mycenas*, were large and clearly visible, 30–60 x 14–25 microns, club-shaped (clavate) and with a warty (verrucose) surface. The spores were elliptical, smooth and 8.5–9.0 x 4.0–5.5 microns. The smell was interesting, a bit earthy or potato-like. Some groups of *Mycenas* have no cystidia or they have finger-like projections and those groups I could eliminate. But what about the color of the cap—is it white,

brown, grey, yellow, or what? Going through all the possible combinations, I still came up empty. Ready to give up, I took a last look at the gills. In the young caps they looked a bit more yellowish. My old loupe solved the puzzle. The margin of the gills was faintly yellow, different from the rest of the gills. That feature opened up the group of *Mycenas* with colored margins. *Mycena citrinomarginata* comes to mind. But their gill margins are bright yellow. There is also *Mycena rosella*, with nice pink margins. Both those species can be found around Toronto. But the description of *Mycena flavescens*, also called *Mycena sulphureo-marginata*, fitted my *Mycena* beautifully: the colors, the faintly yellow gill margin, the cystidia, spores and even the typical potato smell. Interestingly I found a nice description of it on a page torn out of an old (1945) edition of *Fungus*, a journal of the Dutch Mycological Society. I had saved it just in case I came across one of the four *Mycenas* described there. But most European guides include this species. Phillips in *Mushrooms of Britain and Europe* has a nice picture of it. It is apparently widespread but rather rare. And here in North America? Well, A. H. Smith in his monograph of *Mycenas* mentions only one locality, and that is in Michigan. Of course this was before 1947. I have seen no other mention of this species in the N.A. guides I checked, so it is likely pretty rare, or generally overlooked. I found these particular specimens at my cottage in Udora, N.W. of Toronto, on September 28, 1998.

AD16, 2001/1, *Fayodia gracilipes*



Mycena flavescens

CYSTIDIA

SPORE

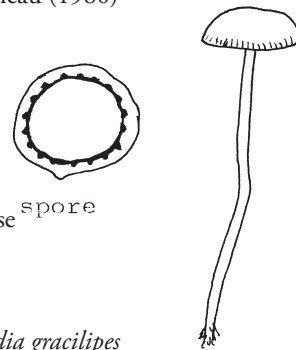
One of the most interesting species found during the identification forays of 2000 was a small, ordinary-looking one that turned out to be not so ordinary. It was the rare *Fayodia gracilipes*, which also goes under the name of *Fayodia bisphaerigera*. *Fayodias* were originally lumped with the *Mycenas*, then later on re-grouped with some other outcasts in the genus *Fayodia*. Now that genus is split up into *Fayodia sensu stricta*, *Myxomphalia*, and *Gamundia*. The only other *Fayodia* in Europe and North America is *Fayodia anthracobia*, which prefers charcoal at fire sites.

The reason the *Fayodias* were originally placed in the *Mycena* clan is because of their typical *Mycena* stature, and when this one was found I assumed it was one of the many grey *Mycenas*. However, I was struck by the way the gills were semi-decurrent, which is unusual for a *Mycena*. I found this particular specimen under conifers, at a damp spot. The cap was only 1.5 cm wide, grey-brown fading to a light drab, and with a satiny shine. The stem was the same color, 5 cm long and 1–2 mm wide, hence the name “gracilipes,” or “slender-stemmed.” The gills were whitish grey and a bit decurrent. All in all, very plain looking. The real shocker came when I took a look at the spores under the microscope. Instead of the expected smooth oval spores, these were a riot of round spiny ones, not your common, everyday warted spores. No, the real *Fayodias* have so called “falsely echinulate” spores, for the warted layer is actually covered by a smooth outer layer, a uniquely *Fayodia* feature. That is why this species other name is *F. bisphaerigera* or “two-sphered.” The outer smooth layer is hardly visible but becomes more visible when stained in Melzer’s, an iodine-based reagent.

Fayodia gracilipes has been reported from New York, Michigan and Oregon.

According to Pomerleau (1980)

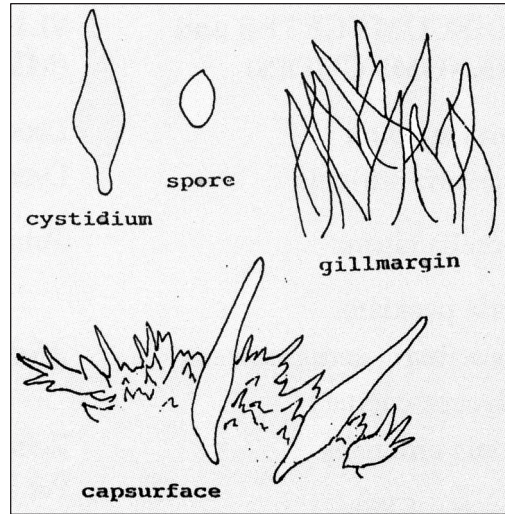
it had not been found in Québec or Ontario up to that time. In Europe it is widespread but not common. Anyone else seen this rarity?



Fayodia gracilipes

AD17, 2001/
1, *Trametes* or
Poronidulus conchifer

This unusual polypore, popularly known as the Little Nest polypore, starts off as a small, zoned cup with no pores. Then, a flat, fan-shaped shelf or bracket up to 5 x 3 cm. with pores develops. The cups are brown with darker concentric zones. The shelf is whitish, yellowish, or buff, with some faint zones. You find it on dead wood, mainly on elm. It is native to eastern North America including the Toronto area, but it is not known in western North America or in Europe. The scientific names may seem incomprehensible but are, as usual, quite appropriate, *Trametes* for, thin layer or weft; *Poronidulus* for pores (poro) and little nest (nidulus); *conchifer* for shell or cockle (conch) and bearing or containing (fer).

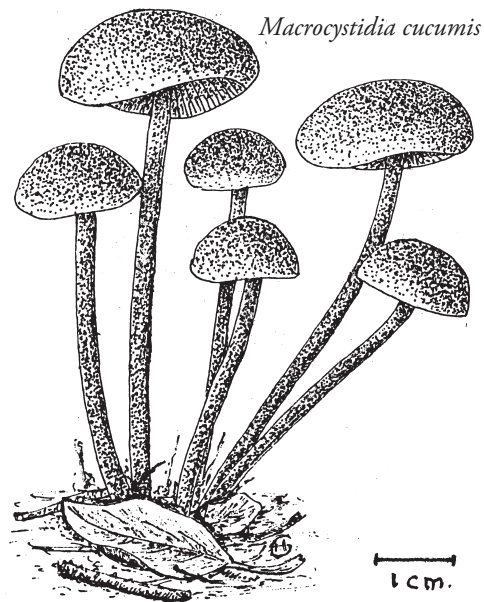


the ends of hyphae that make up the outer layer of the cap (the pellis). The stem is also covered with cystidia. All by all this makes the cap and stem appear velvety. The spores were ellipsoid smooth and $9-9.5 \times 5-5.5 \mu\text{m}$.

With all of this new information, Dr. David Malloch offered the suggestion that we could be dealing with a *Macrocystidia cucumis*. Except where was the cucumber smell? The smell which is variously described as that of cucumber, herring, or putty, depending on the age of the specimens, the temperature, or one's nose. We did not detect any of those smells. Now I found out that odorless variants have been reported in Europe.

AD18, 2002/1, *Macrocystidia cucumis*

The highlight of our 2001 Cain Foray in Muskoka was by far the discovery of the mushroom *Macrocystidia*. We don't know who did actually find it and where. It turned up at the sorting tables, not looking anything special. Nobody knew what it was. Maybe a *Psathyrella*, a *Collybia*, or a *Marasmius*. It was a cluster of smallish mushrooms with conical caps on long, slender stems, all in a nice deep rusty brown color, with a lighter cap margin and stem apex. The gills were pale at first and then an unusual reddish ochre. One problem we had was the spore color, as I was not successful in obtaining a spore print. As usual there was little time left after all the sorting to sit down and do any microscopic work-up, but late Saturday evening I did manage to have a look at the gill margin. Wow, what a surprise! A totally weird forest of large—by mushroom standards—cystidia all over the gills. Cystidia of $50-100 \times 10-20 \mu\text{m}$, spindle-shaped (fusiform) that obscured the basidia. The cap surface looked like a carpet of cystidia mixed with strange-looking elements. Later on, I found out that they were



Macrocystidia cucumis was originally called *Naucoria cucumis*. The genus has six species worldwide, but only the one in Europe and North America. Mycologists are not sure where to fit in this genus. It is now usually placed in the Tricholomataceae family. *Flammulina velutipes*, the Velvet Foot, might be its closest relative. The species is widespread in Europe and becoming more so. It also occurs in western North America, mainly in the northwest. For eastern Canada, this might be the first recorded find.

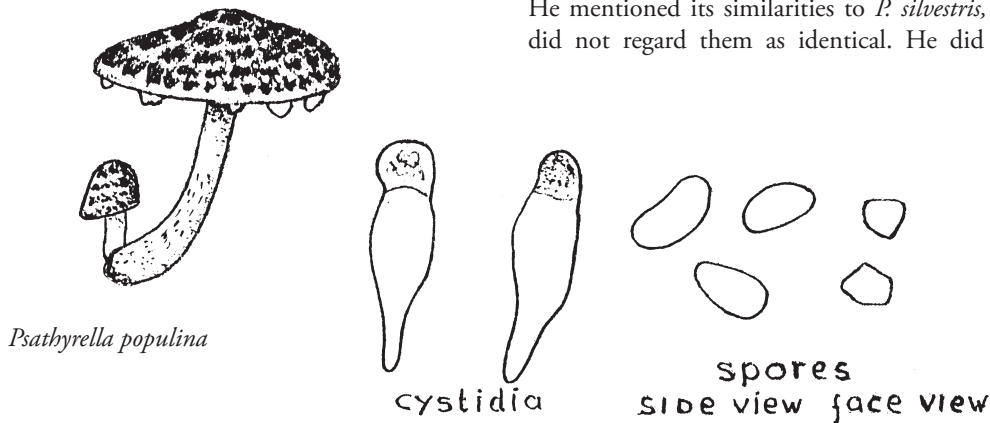
AD19, 2002/2, *Psathyrella populina*, the Mushroom with the Unique Color Reaction

To identify a mushroom one looks first at the shape, color, texture, and habitat, followed by smell, taste, and microscopic features. But more artificial means are often needed to distinguish one species from the next. Looking for color changes is one. Just exposing the flesh to air can bring about slow or rapid changes in color, as you probably have seen in Boletes. There is also a whole battery of chemical reagents to test for changes in color in diverse parts of a mushroom. Simple macroscopic tests are used with ferrous sulfate in *Russula* and with potassium hydroxide in *Cortinarius*. Then there are the more complicated concoctions like cotton blue, lactic acid, ammoniated congo red, sulphovanillin etc.

The reaction we are dealing with today requires only ammonia. Yes, the ordinary household cleaner will do just fine. *Psathyrella populina* (syn. *silvestris*)—no don't get your mushroom guide, you won't find it there—belongs to the

Lacrimaria group of the genus *Psathyrella*. Instead of smooth caps and stems, they have fibrillose, scaly, or hairy ones. This *Psathyrella* I found at my cottage in Udora in 1999, growing in small groups on rotten poplar wood. At first I had no idea what they were, but then slowly I recognized them as a *Lacrimaria*. The caps were fibrous scaly and the gills vinaceous brown. *Psathyrellas* are usually carefully avoided because they are so difficult to identify, and there are about 400 of them. Four or five of the more common ones you see listed on foray lists, the others are rarely heard of. But I gave it a try. First I came up with *P. echiniceps*, but that one has ornamented spores, and grows on buried wood, which did not fit. Then I tried European guides, Moser and *Nordic Macromycetes*. Came up with the name of *P. populina*. Description in *Nordic* fitted perfectly, but was my species really the same one? Well, a special feature was mentioned for this species. The cystidia were supposed to turn green in ammonia. I tried that out, and surprisingly it worked! So that clinched it for me. This test works only on fresh material. It is actually not the cystidium itself that turns green, but a mucous mass at the tip of the cystidium.

Is this species known from North America? Yes, Kauffman in his *Agariceae of Michigan* describes it under the name of *Hypholoma populinum*, as in 1918 *Psathyrella* were still grouped under *Hypholoma*. He did not mention the ammonia reaction, which might not have been discovered yet. A. H. Smith, who authored a *Psathyrella* monograph (*The North American Species of Psathyrella*, N. Y. Bot. Gar. Myco. Mem. 1972), describes a *P. lepidotoides*, found in Idaho. He mentioned its similarities to *P. silvestris*, but did not regard them as identical. He did not



think the ammonia reaction very valuable, but then he probably had to work mostly with dried herbarium material. Curiously, he did not mention Kauffman's description. Since then a Dutch mycologist, Kits van Waveren, made a study of *Psathyrella* and concluded that *P. lepidotooides* is indeed identical to *P. populina*. So this species does appear in North America, but why only rarely? There is no lack of poplar wood here. From what I observed I would suggest that it fruits only occasionally. After I found this species in 1999, I have not seen it since, not on the same piece of wood or on other poplar wood nearby. In case you see something similar, here is a description:

Psathyrella populina (Britz) Kits van Waveren

CAP: 1.5–5.5 cm. Convex-subcampanulate, whitish-light fawn, with dark brown appressed fibrillose scales.

MARGIN: appendiculate (with remnants of a veil).

STEM: 3–5 x 0.4–0.7 cm, white with tiny brown fibrils at lower part of stem.

GILLS: adnate, fairly close, vinaceous, becoming vinaceous brown.

SPORES: 7–9 x 4–5 μm , smooth, variable shaped. In face view typically triangular- or rectangular-shaped, dark purple brown.

CYSTIDIA: pleuro and cheilo, utriform (bladder shaped) or clavate 40–55 x 10–12 μm . Tips with a mucoid mass, that stains green in ammonia.

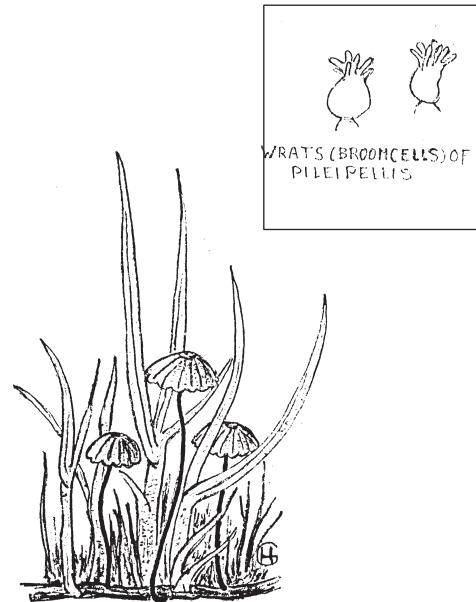
HABITAT: on rotten logs or branches, especially poplar.

RANGE: uncommon or rare in Scandinavia, Britain, and France. Found 2x in the Netherlands.

DISTINCTIVE FEATURES: white stem, triangular-rectangular spores in face view, cystidia staining green in ammonia.

AD20, 2002/3, Going from Crabgrass to *Marasmius*

There I was on my knees on the lawn behind the house—attacking crabgrass and other undesirables—until I noticed a number of tiny orangey spots amongst the grass. These spots turned out to be miniature mushrooms, attached to the grass by long thread-like stems. Close up they were re-



Marasmius curreyi

ally neat little things. Their caps were only 2–6 mm across, shaped like small parachutes, with an undulating margin; their color a nice orange ochre, with a darker depression in the center. The stems were 2–3 cm long, horsehair-like and dark brown to black. The gills, only about 10 of them, were broad and attached to a ring or collar around the stem. But this collar was not as well developed as, for example, in the Pinwheel *Marasmius*, *Marasmius rotula*. No doubt I was dealing with a *Marasmius*, and the obvious name for such a grass dweller is *Marasmius graminum*. Too bad that that name now has to be changed to *M. curreyi*. Why such a change? Well, somebody had the bright idea to have to have a closer look at the originally described *M. graminum*. And he found out that there were a number of tiny but essential differences between the old *M. graminum* and the present one. The main one is in the make up of the pileipellis, the outer layer of the cap. Those caps are not smooth and shiny, but dull due to tiny wartlike elements. And those warts are not of the same type in the two species. Ergo the name *M. graminum* goes to the original species. I do not know if that one is still around, but anyway we are now stuck with the *M. curreyi* name. Like a true *Marasmius*, our little grass-lover tends to shrivel up when it gets dry and revive again after a rain. That is where the name *marasmius* comes from (the Greek *Marasmos* meaning withered or emaciated), and the medical term for starvation is

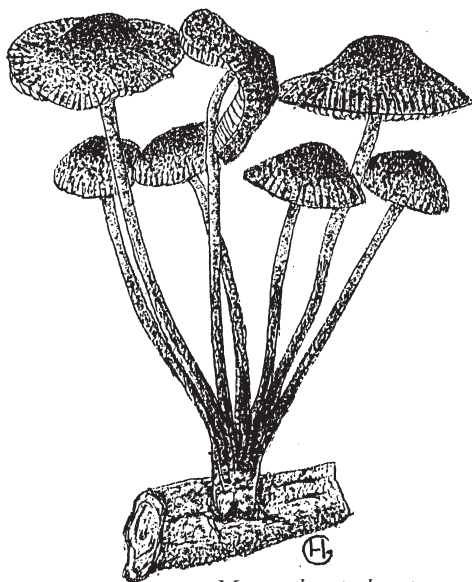
marasmus. *M. graminum*—sorry, *M. curreyi*—is widespread and probably not rare. Could be common if only more people would crawl around on their knees. Try it—you never know what you will find!

[Editor's note: Henk chose to spell "warts" in the traditional Dutch way of "wrats" for the illustration. The English "warts" is borrowed from the Dutch, so we'll defer to Henk!]

AD21, 2003/1, Trio Tops in My Scene

Looking back at the mushroom species found at the two forays I attended this fall, the most interesting ones for me were three *Mycenas*. No, not because they were small. I know I am accused of favoring the small stuff, but how can you ignore them? There they were: *Mycena clavicularis* by the hundreds, *Mycena capillaripes* suddenly appearing in York, Durham and Pepperlaw County Forests, where I had never seen them before. And then, the much rarer *Mycena hemisphaerica*.

Mycena clavicularis made up for its small size by appearing in great numbers on pine needles in York County Forest on October 26. Their bell shaped caps were about 1 cm and light greyish brown. The sticky stems were of the same color while the gills were a greyish white and adnate (broadly attached to the stem) or a bit decurrent. A good picture can be seen in Phillips, *Mushrooms of North America*, page 81.



Mycena hemisphaerica

M. hemisphaerica



M. inclinata

Mycena capillaripes is quite similar in habitat and appearance to the previous species. But it has a more pinkish buff cap. Its interesting feature is the gills; some of the larger ones have red-brown dots on the gill margin! That is due to the reddish content of their cystidia. The name *capillaripes* has to do with the slender (capill=hair) stem (pes). Or to take it a step further, maybe Peck, who named this species, looked at the hollow tube-like stems and compared them to the capillaries, the small arteries of our body.

Then there was *Mycena hemisphaerica*, the one pictured here. They were found in York County Forest and I was going to call them *Mycena inclinata*, a more common species. But when I looked at the cystidia, they turned out to be of the broom cell type (see drawing) while *M. inclinata* should have "irregular diverticulate" cystidia. So I was wrong and had to look for another species; which turned out to be *M. hemisphaerica*. Both have caps of 2–5 cm which are mainly brown with a lighter margin. But *M. hemisphaerica* is darker with an almost black umbo. Hence the other name, also by Peck, of *M. atroumbonata*. *Mycena hemisphaerica* has no special smell and has a smooth cap margin, while *M. inclinata* has a mealy or rancid odor and a denticulate or scalloped cap margin. The stems of both species are pale at the apex and red-brown towards the base. Both grow in tight clusters on wood. *Mycena hemisphaerica* is not common, although probably often mistaken for *M. inclinata*. So keep an eye out for them. When in doubt, send me a dried specimen and I will have a look at the cystidia. My address is General Delivery, Udora, Ontario, LOC ILO.

AD22, 2003/2, *Pluteus seticeps* or is it . . . ???

Vello mentioned in his Fall Foray report that 2002 seemed a good *Pluteus* year. I agree, for just here in Udora I found three more species.



They were *Pluteus petasatus*—a dingy whitish one with darker brown scales at the center of the cap, *Pluteus tomentosulus*—a strikingly white velvety species and the small *Pluteus seticeps*. The first two were growing as proper *Plutea* do, on wood, but the third one grew on soil; although later on I found some on a tree stump. At least a dozen of them appeared last August in my lawn, happily growing amongst the grass. Their caps were only 1–2 cm, convex and soon flat, dark brown and a bit velvety; sometimes with some veins at the center of the cap. The gills were free and pale pinkish, becoming more brownish pink. The stems were 2.5–3.5 x 0.1–0.5 cm, whitish, sometimes a bit greyish at the base, and fairly smooth. Spores were globose, smooth and small for a *Pluteus* at 6–7 x 5–5.5 μm and pinkish brown. All in all a typical *Pluteus*, except for growing on a lawn.

So what is the proper name for it? Well, let's see: Atkinson, a professor of botany at Cornell, christened it *Leptonia seticeps* in 1902. It is curious that he put it in the *Leptonia* genus, a subgenus of *Entoloma*. True, they also have pink spores, but they are angular not smooth and their gills are not free. Kauffman, a biology professor at the University of Michigan, also used the name *Leptonia seticeps*, in his *Agaricaceae of Michigan* (1918) but pointed out that the smooth spores and free gills remind one of a *Pluteus*. He postulates that it could be a connecting link between *Leptonia* and *Pluteus*. But Singer in 1959 renamed it *Pluteus seticeps* (Atk.) Singer. In Europe however a similar species was named *Pluteus podospileus* in 1887; then Maire in 1917 came up with the name *Pluteus minutissimus*.

Are we dealing here with one small species and three big names? No, not really. *Pluteus podo-*

spileus is now regarded as the one having a stem dotted with dark brown fibers and growing on wood. *Pluteus minutissimus* however lacks brown dots on the stem or has only a few dots at the base, and can be found on soil or wood. So where does *P. seticeps* fit in? Their stems are described as mainly white, not covered with dark dots, so they look like *P. minutissimus*. Some European mycologists like M. Bon and P. Courtecuisse do use the name *P. seticeps* with, as synonym, *P. minutissimus*. Which seems only fair, for *P. seticeps* is, after all, the older name. Others, like P. Orton, use the names *P. podospileus* and *P. minutissimus* and E. Vellinga calls them *P. podospileus forma podospileus* and *forma minutissimus*. So we have a choice. Take your pick!

AD23, 2003/3, Let's find out . . .

You are probably wondering what that penguin is doing here. Read on and you will find out. The story is about fairly common mushrooms, listed in most of our guides under the name *Lepiota clypeolaria*, the Shaggy-stalked *Lepiota*. Look it up in your Audubon, Barron or other guides. But when the Dutch mycologist Else C. Vellinga moved to California a number of years ago she was surprised (shocked?) to hear the name *L. clypeolaria* also applied to another *Lepiota* known to her as *L. ventriospora*. (Remember *ventre* is French for "belly.") She wrote about it in *McIlvainea* (vol. 14, no.2, 2000). She checked with several herbaria and discovered that there are two Shaggy-stalked *Lepiota* species in North America, as in Europe; but they were lumped together as *L. clypeolaria*, despite the fact that the North American mycologist Murrill in 1912 described a species that was different from *L. clypeolaria*. He named it *L. magnispora*. It turns out to be identical to the European *L. ventriospora*, and the correct name for that species is now *L. magnispora*, this being the older name.

In the field they are not easily to separate. *L. clypeolaria* is the more subdued-colored one, with a pale brown well-defined disc and fine yellowish brown scales or fibers on a pale background on the rest of the cap. The stem is covered with white woolly cottony fibers. *Lepiota magnispora* is supposed to be stronger colored; I have seen differently, with a less defined disc and a stem with a



Penguin

*L. magnispora**L. clypeolaria*Shaggy-Stalked *Lepiota*

more yellowish covering. Have a look at *L. clypeolaria* in the Audubon guide—that is a typical *L. magnispora*! The only sure way, unfortunately, to distinguish them is by the spores. In both cases they are long, 11–16 μm for *L. clypeolaria* and up to 20 μm for *L. magnispora*. But it is the shape that counts. *Lepiota magnispora* spores have a straight “back” and a “belly” plus a depression under the apiculus (the site where the spore was attached to the basidium). Vellinga aptly dubbed them penguins. Hence my drawing of a *magnispora* spore dressed up as a penguin. *Lepiota clypeolaria* spores have a curved back and no clear depression at the apiculus.

There is of course little known about the distribution of these two species. Vellinga thinks that here in the East *L. clypeolaria* is the more prevalent one. When I checked old species lists, our own and those of other groups, of course only *L. clypeolaria* was mentioned. Except, and get this, on a list of a Parkin Foray on September 1990 at Kingston Farms, there it was a *L. ventriospora*!!! So our own late guru Jack Parkin was ahead of everybody. Last fall I already started looking for Shaggy-stalked ones, and I promptly found some at Pepperlaw and Durham County Forests; it turned out they were *L. magnispora*, so maybe they are not so rare here. Now would it not be nice to find out more about the distribution of these two species. Let’s all keep an eye out for them. If you find one, or you think you have found one, pick it, make a note about location, color of cap and stem, and then dry it—drying is not hard (I use my desk-lamp)—then give them to me at one of our meetings or mail them to me. I will then evaluate them and in time report the results in the *Mycelium*. . . .

AD24, 2003/4, Another Shaggy Stalked *Lepiota*, *Lepiota alba*

For years I was under the impression that the nice white *Lepiotes* I have found almost every year since 1995 were quite common. They certainly were so at the property near my house in Udora where I take my dogs for their morning walk. They, the mushrooms, looked very much like *L. clypeolaria*, the Shaggy-Stalked *Lepiota*, that I wrote about in the previous issue of *Mycelium*. Except that they were not yellow-brown but almost pure white. It was not hard to come up with their name; almost all European guides describe a white *L. clypeolaria* and give it the name of *L. clypeolaria* var. *alba*. But now they have their own proper name, a simple *L. alba*. I vaguely remember seeing them in the dunes of Holland. When I mention that name to people here, they look rather puzzled. It seems they have never heard of such a fungus, and I have not seen them or some-



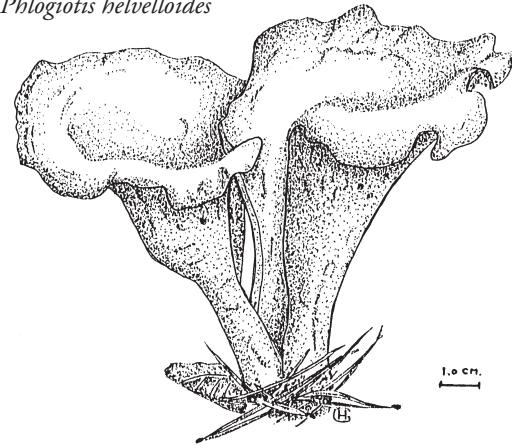
thing similar described in any North American guides or listed on foray lists. So it seems to me that they are not common here after all. As to shape and size, they look like albino versions of *L. clypeolaria*. The cap is 3–6 cm, white with a bit of yellowing at the disc, smooth at first, then finely white flocculose. The gills are of course white also. The stem is 3–6 by 0.3–0.5 cm, white and smooth above the ring, and sheathed in a soft white woolly layer below the ring. The ring itself is also soft and fluffy and is maybe a bit more developed than in a *L. clypeolaria*; however it disappears over time, what the professionals call an evanescent or a fugacious, like a fugitive, ring. The spores are shaped as, and in the same size range as, those of *L. clypeolaria*, that is 12–15 x 5.5–6.5 μm .

There is one interesting difference between the two species and that is in their habitat: *L. clypeolaria* likes trees, hence you find them in woods; *L. alba* does not care for trees and is happy in grass. Last August after some heavy rains they appeared in large numbers over a wide area covered in grass and weeds. In other drier years fewer specimens appeared. (Dried specimens are deposited at the Cryptogamic Herbarium in Toronto, and I have more specimens at home.)

AD25, 2004/1, Apricot jelly mushroom—*Phlogiotis helvelloides*

Now here is a mushroom you cannot mistake for any other species. The shape (spatulate or funnel-shaped with a slit on one side), the consistency (rubbery, gelatinous) and especially the color (pinkish-red to apricot-orange) are all quite unique. At our October foray in Durham County Forest last fall we were treated to a most colorful display of *Phlogiotis*. They were not just in one spot but were showing off along a whole stretch of roadside. Big clusters of them among the grasses. That is quite unusual, for they are mainly found in pine duff. There is only one species of *Phlogiotis*, but the genus name has changed quite a bit over time. Here in North America the name *Phlogiotis* is generally used, but in Europe the name *Tremiscus* is favored. *Phlogiotis* is an apt name—*phlog* meaning flame-colored, and *otis* ear-shaped. *Tremiscus* refers to the gelatinous trembling flesh. As you probably detected, the

Phlogiotis helvelloides



drawing is not from last October, but from an earlier collection growing under pines.

AD26, 2004/2, Impudent Mushrooms

You are probably all familiar with the Stinkhorn mushroom *Phallus impudicus*, smelly but also very interesting. I never really asked myself where that name *impudicus* came from. Now I realize it is of course derived from “impudic-,” meaning shameless or immodest. But really is it fair to call stinkhorns impudent? Sure, if we smelled like they do, we would indeed be impudent. For a stinkhorn, however, it is a question of survival of the species. They use that smell to attract flies who will spread the spores contained in the dark slime on the cap. But there are other fungi that have fetid smells, as far as I can see for no good reason. Maybe we could label those impudent.

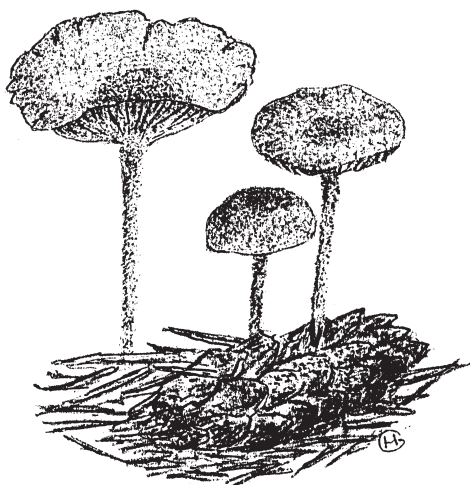
It was at the October foray in Durham County Forest last fall that a smelly small mushroom was found; coincidentally I found similar ones soon after at my cottage in Udora—actually I smelled something rotten and had to crawl under the low hanging branches of a large spruce tree to find the source of that smell. It turned out to be a group of small *Collybia*-type mushrooms. Here is a short description of them:

- CAP: 1–4 cm, convex to plane, becoming wrinkled and grooved (sulcate) at the margin; thin fleshed; pinkish brown with a darker chestnut center.
- STEM: 3–4 x 0.3–0.4 cm fairly tough, cylindrical often narrowed towards the base; entirely whitish, when dry, tomentose (velvety downy).

- GILLS: fairly distant, free, pale pinkish white.
- SPORES: white, 6.5–7 x 3.5 μm .
- SMELL: as rotten cabbage.
- HABITAT: under spruce, on needles and cones.
- The main features are the distant gills, white tomentose stem and small spores.

Having such a bad smell, it should be easy to identify, I thought. Well, I was wrong there. It turned out that there are quite a number of smelly *Collybia*-type mushrooms. First I had a look at the Micromphales known to have a garlicky smell, but they are smaller and have dark brown stems. Then there is a *Marasmiellus praeacutes* (formerly named *Collybia*). That one is also too small and has a brown cap that fades to white and a dark brown stem with a white base. Then I found the descriptions of six *Collybias* (recently assigned to *Gymnopus*) that have fetid smells. So let us see if one of these fits:

- ◆ *Collybia dysodes* grows on wood chips and has a dark reddish brown stem, and 8–9 x 3–4 μm spores. All wrong.
- ◆ *C. polyphylla* grows on hard wood litter and has very crowded gills—hence *poly* (many) *phylla* (gills). It is known from the Great Lakes area, but otherwise does not fit.
- ◆ *C. pinastris* is a North American species described by Kauffman and found in Quebec. It does grow on conifer needles, but the stem is not white tomentose and the spores are too large.
- ◆ *C. hariolorum* has the right size of cap and spores, but the gills are crowded.



- ◆ *C. porrea* is a European species, with a garlic smell, pale yellow gills, but no tomentose stem.
- ◆ *C. impudica* is . . . could that be the one? Yes, it has all the required features: distant gills, white tomentose stem, the right spore size and a preference for spruce. Is it known from North America? Yes, Halling in his *Collybia* monograph does list it, but it is certainly not common. It is probably more prevalent in Europe, as it is described in most of the European guides I checked.

So if you smell something impudent, do not turn up your nose. Have a closer sniff and maybe you'll find one of those smelly *Collybias*. Let me know if you do.

Ar01, 1994/2, The Judas' Ear

With the outdoors covered in a pristine blanket of snow, the only thing left for a mushroomer to do in the winter is to leaf, wistfully, through some well-thumbed mushroom guides. While I recently did this, I came across the name "Judas' ear." The official name was *Auricularia auricula*. I have never seen this mushroom in Ontario, but I remember it well from Holland. You could find it on living elder bushes (*Sambuca nigra*), but nowhere else. According to European literature, the mushroom's main host is the elder, and it is only rarely found on other deciduous trees, never on coniferous wood. Ricken (1920) lists it under the apt name of *Auricularia sambucina*.

The Judas' ear is a tough, gelatinous, cup-like, often ear-shaped, brown fungus. Groves (1979) relates the origin of the name Judas' ear. Legend has it that Judas Iscariot hanged himself on an elder tree, condemning the tree to bear his excrescence in the form of ears. Why the ear should have been singled out to commemorate his evil deed is not clear. But there may be some confusion here with the ear of the servant of the high priest, which was cut off by Peter at the time of the betrayal. *The Audubon Guide* (1981) has another interesting comment. A related species, *Auricularia polytricha*, or Mo-Ehr, is cultivated in China and sold in the markets there. Restaurants serve it under the names of Yung Nge or Muk Nge. It is reported to affect blood coagulation and may contribute to the low incidence of coronary disease in China. Before it was cultivated there, it was imported from Tahiti, according to McIl-

vaine (1973). The European Judas' ear, which is also edible, used to be sold as a medicine—no, not for ear trouble, but to alleviate eye infections (Michael, 1919). What struck me, however, was the habitat given for the Judas' ear. The *Audubon Guide* says “coniferous wood, sometimes deciduous wood.” That doesn't seem right. Other guides also name both deciduous and coniferous wood as hosts. The *Quebec Flora* of Pomerleau (1980) mentions only deciduous wood. Are we sure that we are dealing with only one species? Or, is there one growing on deciduous wood identical with the European one and one growing on coniferous wood, the latter mainly in the West? One more book left to check. Smith's *Field Guide to Western Mushrooms* (1975) says, “the coniferous inhabiting strain in the western region may be a distinct species.” That seems likely to me.

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Ar02, 1995/2, A Dog Doesn't Know Any Better

When my daughter came to visit me last fall, she decided to bring her puppy dog. Like any self-respecting dog, the puppy had to inspect everything—both in and outside of the house. But she was a good dog; she did not damage anything. Later in the afternoon, however, we noticed that she began to salivate copiously. By the time she got back home, she was vomiting. The next day, she was her rambunctious self again, and her indisposition was blamed on overexcitement or car sickness. The real reason became clear later on. I had collected some small *Inocybe* mushrooms, which turned out to be *Inocybe flocculosa*. To preserve them, I had put them in a petri dish on top of

the heating register in the floor so that they would dry. When I checked the dish the next day, it was empty. That is when I realized what had probably happened. *Inocybes* are known to be poisonous, and young dogs like to sample everything. Put the two together and you end up with no mushrooms and a sick dog. Luckily, *Inocybe flocculosa* are very small, and I had had only three specimens. And the poison they contain is muscarine, not the most dangerous one. I looked up the symptoms of muscarine poisoning: sure enough, excessive salivation and vomiting! The poison acts quickly, from half an hour to three hours after ingestion—which was the case here. I thought it prudent not to tell the family, but in the future I will keep my fungi safely out of reach of nosy dogs.

You always wonder how wild animals cope when something like this happens to them. Squirrels and rabbits both eat mushrooms. Do they know which are safe to eat and which are not? Actually, they have ways of dealing with the poisons. Rabbit stomachs can even neutralize the amanita toxins of *Amanita virosa*, the death-cap mushroom. Yet, if that same poison were to be injected intravenously, the rabbits would be poisoned. Rabbit stomachs have been used to treat human cases of poisoning. The results were not spectacular but, of course, by the time poisoning is suspected, part of the poison is already in the bloodstream. Dogs and cats don't have the ability to counteract mushroom poisons. Their ancestors are carnivorous and never did indulge in mushroom-eating. Consequently, they did not develop an antidote during evolution. Neither did we humans. Be careful and protect yourself and your pets.

Ar03a, 1998/2, You say “Naemato” and I say “Hypholo”: Naematoloma or Hypholoma, Who Is Right?

In most North American guides you will find the Sulphur Caps and Bricktops under the name of *Naematoloma*. But in the European guides they use the name *Hypholoma*. In Québec Pomerleau for one, they also use *Hypholoma*. Clearly some kind of disagreement exists between European and North American mycologists. But I'm pleased to see that the new guide *Mushrooms of Northeastern North America*, by Bessette, has now

switched to *Hypholoma*.

So what is the story? Well, long ago, the genus *Hypholoma* was a much larger one. Over time, different genera were split off, e.g. *Pholiota*, *Psathyrella*, *Psilocybe*, leaving only a rather small *Hypholoma* group. The name *Naematoloma* was then introduced by many mycologists for the left-over genus. Both names refer to the veil fragments remaining on the cap margin; “loma”=margin, “hyph”=fringed with tissue, and “naemato”=with threads.

According to a general rule in taxonomy, the older name should be used. The name *Hypholoma* was coined by Kummer (1834–1912), *Naematoloma* by Karsten (1834–1917). As you can see, they were contemporaries, but Kummer came up with the name *Hypholoma* in 1871 while Karsten’s *Naematoloma* is from 1879. So *Hypholoma* is the clear winner! Most often, when a large genus is split up into smaller units, the original name disappears. There was a time when most gilled mushrooms were called *Agaricus*. Later on, genera with names like *Clitocybe*, *Tricholoma*, *Collybia*, etc. were split off and the remainder became known as *Psalliota*, a name that was still in use in my younger days. But eventually the *Agaricus* name was resurrected. As it happens, Kummer also coined the name *Psalliota*. He lost out on that one. For now, let’s just join the rest of the world and use the proper name *Hypholoma*.

Ar03b, 1998/3, The Case of *Hypholoma* and *Naematoloma*, revisited [A letter from Scott A. Redhead, Ph.D. to Henk Van der Gaag]

The conflicting usage of these names had been a long-standing problem and still is, if you are using old guides or guides by authors not paying attention to systematic literature. As pointed out by Henk van der Gaag in the previous issue of the *Mycelium* (vol. 24, no. 2), the division in use was mainly between North American authors versus European authors. However, the resolution of the problem, in favor of *Hypholoma*, is both simpler than noted, and yet more complex in its groundwork. Simply put, the name *Hypholoma* (Kummer, 1871) has been conserved over *Naematoloma* (Karsten, 1879), and it is currently listed as a conserved generic name in the International Code of Botanical Nomenclature. There is no

longer any rationale for using *Naematoloma*. Alan Bessette did not switch to the genus; he looked into the matter (I know because he consulted me) and followed protocol. However, if you look in Singer’s various *Agaricales in Modern Taxonomy* editions, including the last one in 1986, you will see *Hypholoma* listed as a synonym of *Psathyrella* and also see *Naematoloma* accepted as a good name. Clearly it was a debatable point revolving around not which name was first published but which were their type species, as was detailed in Singer’s footnotes. Singer argued that a “*Psathyrella*” species was the type species of the name “*Hypholoma*,” not a “*Naematoloma*” species. In fact the debate had gone on for decades (if not a century), and it took three impartial proposals by a North American, David Farr at the USDA, published in *Taxon*, to have the concerns addressed and decided by an international committee. The committee decided that the type species, or the anchor for the name “*Hypholoma*,” was in fact a species which was also a “*Naematoloma*.” Only after that was decided could priority of publication dates kick in, and, as noted by Henk, *Hypholoma* wins the day. Priority was allowed to win because the world’s population was divided on usage, otherwise conservation of the name “*Naematoloma*” might have been accepted.

So, deciding on using *Hypholoma* and not *Naematoloma* is easy. It is the law. Making the decision to make it the law was not so easy. Now if you really want to worry over a name, watch out for *Collybia*!

Ar04, 1998/3, Plums and Custard, or What?

Tricholomopsis rutilans, aptly named “Plums and Custard,” is one mushroom you won’t confuse with any other species. They are all real beauties. Their cap is yellow but densely covered with fine purple-red scales or fibrils. *Rutilans* meaning “reddening,” refers to that feature. The flesh is also yellow, as are the gills, and the stem is like the cap, yellow with purple-red fibrils. They are fair-sized, with caps up to 12 cm, and grow in tufts on rotten conifer wood or humus. They are regarded as edible, but only by those who are desperate.

Last fall in the Pefferlaw County Forest, I found what looked like poorly developed specimens of *T. rutilans*, but then I noticed that

their stems were plain yellow without any of the purple-red fibrils. So, plain custard but no plums. Later on I found similar ones at my cottage. The small size caps, less than 3 cm, and the smooth yellow stems don't fit with *T. rutilans*, but do fit nicely with *Tricholomopsis flammula*. Some people regard this as a questionable species. True, any small *T. rutilans* is not necessarily a *T. flammula*, but together with a smooth yellow stem it probably is. If they were mere forms of *T. rutilans* you would expect in-between stages, e.g. medium-sized ones with a yellow stem. Are they around Toronto? I don't really know. Maybe they are just overlooked or dismissed as small *T. rutilans*. Please let me know if you come across any specimens that look like *T. flammula*.

Ar05, 2005/3, *Mycena amicta*

Ha, another tiny mushroom, and a *Mycena* to boot! Probably impossible to identify, you might think. Well, Mycenas can be tricky. Especially if you must determine whether or not they have cystidia, which are often so hard to find that some mycologist might claim a certain species does not have cystidia where somebody else has seen them. On the other hand there are a good number of Mycenas that are readily recognizable. *Mycena amicta* turned out to be one of them.

It was last October in Durham County Forest that I noticed among conifer debris one single grayish mushroom, a typical *Mycena*. There are quite a number of gray Mycenas, and just one is not enough for identification. "Leave it alone," I thought. But then I noticed an unusual blue color at the base of the stem, so I picked it, and right away more interesting features showed up.

The cap, only 15 mm wide, was a bit sticky and the cuticle gelatinous; you could peel it off. The stem, 50 mm long and 1–2 mm wide, was not sticky and looked powdery, but under my loupe it turned out to be minutely hairy or pubescent. The gills were whitish and slightly decurrent. George Barron, on page 282 of his *Mushrooms of Ontario*, describes a *Mycena subcaerulea*, and the description fitted nicely except that it did not mention the blue stem base, and as substrate it listed hardwood. A look in Marcel Bon's *Mushrooms and Toadstools of Britain and North West Europe* revealed a similar species that does have a bluish stem base and prefers conifers. It goes by the name of *Mycena amicta*. Amicta means "clothed," like the stem perhaps. At home I had a closer look. *Mycena amicta* is mentioned in some North American guides, but as a northwestern species; except that Pomerleau claims it is occasionally found in Quebec. The clearest difference between *M. subcaerulea* and *M. amicta* is in the spores. The former has almost round ones, the latter elliptic ones, 7–10 x 3.5–4 µm, exactly as in my specimen. The cystidia are similar in both species, smooth and slender, not branched as in some other European look-alikes. So my conclusion was that I had indeed found *Mycena amicta*, another rare species from Ontario's Durham County Forest.

[Ed. Note: The Royal Ontario Museum herbarium contains specimens collected from the Temagami Forest Reserve in 1936, but Ottawa's herbarium has no such collection from Ontario.]

