

MESSAGE FROM THE PRESIDENT

I am pleased to once again serve as President of the Wisconsin Mycological Society. I extend sincere thanks to my immediate predecessor, Peter Vachuska, for his dedicated leadership the past three years. Two other critical elements of our survival are an enthusiastic secretary/treasurer and a hard-working newsletter editor. These positions are very ably filled by John Steinke and Colleen Vachuska, and their efforts are greatly appreciated. A multitude of other essential tasks are performed by various board members. Lastly — sincere thanks are extended to our members, who show their strong support of the society through excellent attendance at our numerous yearly functions.

For the benefit of newer members, and possibly others as well, I should like to briefly explain how the society is structured and the general reason why we exist. A 12-member board of directors meets at least twice yearly to plan all WMS events — these include forays, lecture meetings, workshops, and an annual meeting. The original board was formed in 1982 when the society re-activated; a set of by-laws was adopted at that time. A nomination committee within the board selects a yearly slate of officers that are elected at the annual meeting in June. A list of officers and board members is published yearly in the September newsletter.

The primary reason why the WMS exists is clearly stated in the WMS By-Laws: The principle purpose of the society shall be to provide its members with the means of studying, collecting, and identifying fleshy fungi, especially those found in the state of Wisconsin. I think most would agree that almost all our efforts involve two words — education and enjoyment. Over the years most interest has been expressed in learning how to identify edible/poisonous wild fleshy fungi, where to collect different species, how to cook the safe ones, and how to make good quality photographs. To satisfy these interests, we schedule forays, lectures, and publish a quarterly newsletter. Members are strongly encouraged to provide input into any of the above activities.

Mid-August is already proving to be an exceptional year for fleshy fungi in southeastern Wisconsin. Hopefully the ideal weather patterns will continue throughout the fall foray season! Remember — one of the best possible ways to learn mushrooms and many other species of fungi is to attend forays. Hope to see many of you in the woods this fall; since I'm famous for getting lost, you may choose to follow someone with a better sense of direction.

Alan Parker

FALL FORAY SCHEDULE

September 9 (Saturday) — Fred Hainer Foray, Point Beach State Forest, 10:00 a.m.

September 16 (Saturday) — Mauthe Lake, 10:00 a.m.

September 23 (Saturday) — Madison area foray, Blackhawk Ridge, 10:30 a.m.

September 30 (Saturday) — Pike Lake State Park, 10:00 a.m.

Members should have received foray notices for all but one of the above events. The foray notice for the September 23 foray is enclosed with this newsletter.

OTHER UPCOMING EVENTS

September 18 (Monday) — Dr. Alan Parker will teach an evening workshop on "Identification of Wild

Mushrooms/Fungi”. The class will be held from 7-10 p.m. at UW-Waukesha through UW-Extension; the fee is \$15 and all participants must preregister. This workshop will include slide lectures, displays of wild fleshy fungi, numerous handouts, and discussion of methods for collecting, identifying, and cooking various wild fungi. For registration information call Don Bracco at 521-5460; for more fungus details call Alan Parker at 521-5495.

September 23 (Saturday) — Retzer Nature Center Apple Festival, 9 a.m. — 5 p.m., Waukesha. See article below.

October 1 (Sunday) — Twelfth annual WMS-MPM Mushroom Fair, 10:00 a.m. – 4:00 p.m., Milwaukee Public Museum. Mushroom cookbook author Jack Czarnecki will be on hand to promote his latest book [A Cook's Book of Mushrooms](#), as well as all the usual displays and activities — mushroom identification, poison center, mushroom books, arts and crafts, information on growing mushrooms, cooking demonstrations, fungal photography, and more. The fair can always use more mushrooms for the display table so bring in any fungal specimens you think are interesting. If you would enjoy talking to fair visitors and sharing your knowledge of fungi, why not volunteer to work at the fair? Call Kevin Lyman at 278-6142 for further details.

FUNGI AND APPLES — THE RETZER NATURE CENTER APPLE FESTIVAL

Each September the Retzer Nature Center holds a gala celebration honoring the noble apple. A wide variety of heirloom apples are on sale (at very reasonable prices), as well as fresh-pressed cider, apple pies, sundaes, and other apple-based goodies. There is something for everyone — lots of food, demonstrations, arts and crafts show, music, and educational exhibits.

The good news is that the fungi will be well-represented along with the apples and an extensive insect display. The University of Wisconsin – Waukesha is providing an exhibit of fresh wild mushrooms and other fleshy fungi. The emphasis will be on species diversity and ecological roles of fungi in Wisconsin forests — not on edible and poisonous wild mushrooms. Those persons with more practical questions will, however, be given a form and invited to join the Wisconsin Mycological Society. Our society will receive some very positive exposure during the event. Attendance at this day-long festival averages between 3,000 and 4,000 people, and the price is reasonable — \$3.50 per carload. This year's festival is from 9 a.m. to 5 p.m. on Saturday, Sept. 23. Retzer Nature Center is located approximately 2 miles west of Waukesha. Take Hwy 18 west to Road DT, turn left and follow the signs. For more information, call 896-8007. This is a great opportunity to eat apples and view a few fungi.

by Alan Parker

SWEATSHIRTS STILL AVAILABLE

It may have been a hot summer, but the cold winds will soon be blowing. To help keep you warm, a good number of WMS sweatshirts are still available. If you have not already, you can purchase one at a fall foray or at the mushroom fair.

ANNUAL MEETING REPORT

The annual WMS picnic/business meeting was held June 24th at the usual location, Falk Park in south Milwaukee. Perhaps due to the heat, there was a smaller gathering than usual, about 30-35 people.

There was a delay in our being able to get into the building, so many people got used to being outside and stayed outside to eat. We also conducted the meeting outside. Chuck Soden presented the treasurer's report. During the 94-95 fiscal year, our club had credits of \$4643.13 and debits of \$3448.85. With a starting balance of \$1237.99, this left us with an ending balance of \$2028.57(?). Most of this gain in balance is due to more membership dues and the sale of

sweatshirts. Our membership is currently at 160.

Tula Erskine read the nominating committee's report. All of the current board of directors members were renominated and approved. Their names are: Alan Parker, Martyn Dibben, Sami Saad, Sunny Rupnow, Harold Korslin, Chuck Soden, Kris Ciombor, Bill Blank, Rich Miller, Peter Vachuska, Tula Erskine, and Dave Menke. Martyn Dibben later presented a report on the upcoming WMS-MPM Mushroom Fair.

A WMS board of directors meeting followed the general meeting. At this meeting, the following officers were chosen: Alan Parker, President; Tula Erskine, Vice President; John Steinke, Secretary-Treasurer; Chuck Soden, Assistant Secretary-Treasurer.

Thanks to Larry Hancock for grilling brats and to Elaine Siskoff for helping in the kitchen with picnic preparations, and to everyone else for coming and making it a fun time.

by Colleen Vachuska

SUMMER FORAY

Our "summer foray" fell on July 29 this year, my birthday. I can think of no finer way to spend a birthday than with good friends and a mushroom hunt. We had only about 15 members show up, but it was a very knowledgeable group, with only one new member to take advantage of this learning opportunity.

After hearing reports of large fruitings of chanterelles in the Southern Kettle Moraine, I decided that is where we should be headed. We did find some chanterelles but what really amazed me was the large fruiting of *Boletus edulis*. This is truly a popular mushroom as most of the specimens we found had already been claimed by insects and other fungi. One other mushroom that we found in a couple of places was the "sweetbread mushroom" *Clitopilus prunulus*. This is a fine edible if you can find it in better shape than we did on this day. Hope everybody had a good time. We will see you at Point Beach.

by John Steinke

PHOTO FORAY

The photo foray was held Sunday, August 6, at the Scuppernong Hiking Trail in South Kettle Moraine. Although the turnout was small, those present had an enjoyable day. The weather was fair and the temperature was tolerable. Even the insects weren't bad.

Not too much in the way of edibles was found (some *Suillus* and a few chanterelles) but plenty of interesting and photogenic species were there. Among the more interesting finds were a parasitic *Asterophora* on *Russula*, a *Geastrum* species found by John Steinke, and a *Volvariella*.

By the end of the foray, we all agreed that the area has a diverse fungal flora. We found interesting species and got some really nice shots.

by Chuck Fonaas

NAMA FORAY 1995

by Peter and Colleen Vachuska

The 1995 NAMA foray was held in Bemidji, Minnesota on August 24th through the 27th. Several WMS members were in attendance: Dave Menke, Carol Kantner, Hal Burdsall, Tom Volk, Cindy Bergman, Dan Lindner, and ourselves. Perhaps you can ask them at one of the fall forays about what they personally found and experienced there.

The foray was called the Mary S. Whetstone Foray in honor of the founder of the host club, the Minnesota Mycological Society, and it had "Women in Mycology" as its theme. Many of the participating clubs created posters honoring women that had had an impact on their clubs. The WMS poster centered on Tula Erskine and displayed her artwork,

newspaper articles about her, photos of her at various club functions, and several personal impressions. We would like to thank everyone who helped us with this effort: Chuck Soden, Marilyn Fifield, Kris Ciombor, Alan Parker, and Cheryl Rausch. It was a very nice tribute.

The forays themselves were somewhat less than spectacular. The area had had about a month of drought prior to the foray, with only one rainfall of about an inch one week beforehand. Then to add insult to injury it rained heavily one day before and both days of forays. Nevertheless, the topography and vegetation of the area holds water well and we were able to find a respectable number of species. On the day we left the count was in the upper 200's and specimens were still being sorted out by the experts. The exact count will come out in the *Mycophile*. As at any NAMA foray a number of new records were set in new areas of distribution, particularly among the Russulaceae. Also, a white *Amanita verna-virosa* like species *Amanita magnivelaris*, had the western edge of its range moved from Wisconsin to Minnesota. Other examples of species either uncommon or actually new to the Minnesota state list that were found at the foray include the tiny *Volvariella pusilla*, *Pleurotus claevis*, *Inocybe terrigena*, and *Pluteus granularis* and *pellitus*.

While the collecting can be a very educational experience (to actually get correct i.d.'s on mysterious mushrooms), NAMA forays have much more to offer. First, there are the workshops. These are generally three or six hours long and taught by experts in a particular topic. This year the foray offered three pre-foray workshops, a general one on mushroom identification (3 days), one on *Lactarius*, and one on **Myxomycetes** (slime molds). The *Lactarius* workshop, taught by Pat Leacock of the University of Minnesota, was a real eye-opener. A variety of workshops were held during the foray, including several on identification, and others on such topics as painting mushrooms, microscopy, mushroom cultivation, and teaching children about mushrooms. Tom Volk of the Forest Products Lab in Madison presented a workshop on polypores with an emphasis on the features needed to separate the genera and the use of the computerized key, Polykey. Most identification workshops consist of both lecture/slides and hands-on microscopic lab work.

Each day of the foray offered several one-hour lectures on various topics. These were very well mixed so as to have something for everyone. Topics included toxicology, the genus *Pholiota*, mushrooms of central Mexico, mycorrhizal mushrooms of aspen woods, biodiversity and conservation issues, and Beatrix Potter as mycologist. This gives you an idea of the wide variety of topics. All of the lectures we attended were excellent.

Each night of the foray there were programs from about 7:30 to 9 or later. The main lectures were by Gro Gulden speaking on arctic fungi, and Lois Tiffany speaking on parasitic fungi. (My favorite image of the foray was the silhouette of Lois Tiffany standing against a 12-foot backlit screen holding her hands around an ascospore that was perhaps a foot in length.) There were also lesser lectures and the photo contest awards.

I'm always amazed by how much is squeezed into a two-day NAMA foray (and the host club did a very good job organizing it). It is always both a learning experience and a memorable event. I would encourage anyone that has never attended a NAMA foray to try it.

FUNGUS NEWS IN BRIEF

- Evidence from recent scientific studies is changing the way mycologists view lichens, the gray-green patches often seen on tree trunks. Lichens, which are symbiotic unions formed by a fungus and an alga, have long been relegated to a separate single group on the sidelines of mycology, even though perhaps 20 of known fungi are lichens. However, scientists at the Smithsonian Institution have recently shown that in fact lichens are closely related to more familiar, unlichenized fungi. The scientists compared DNA sequences from 75 different fungus species and used a computer program to generate the most likely evolutionary family tree for those 75 species. The 10 lichen-forming fungi that were included fell into 5 separate groups, which were each more closely related to groups of non-lichen-forming fungi than to each other. For example, the coral fungus *Multi-clavula mucida* and the gilled fungus *Omphalina umbellifera* form loose associations with algae, but closely resemble non-lichen-forming fungi. This suggests that the lichen lifestyle has arisen at a number of different times during fungus evolution from a range of non-lichen-forming fungi. This fungal family tree also shows that the evolutionary trend is not necessarily away from parasitism toward kinder arrangements, as lichen-forming fungi have

apparently given rise to fungi which are parasitic on lichen. (Science, June 9, 1995 and The New York Times June 13, 1995)

- I was unhappy to hear last spring that CBS had cancelled the TV show NORTHERN EXPOSURE. I had discovered it late, but enjoyed it immensely for the two years or so that I was able to watch it. What does the cancellation of a TV show have to do with fungi? Well, not much, except that not many shows have episodes in which fungi play a role, and NORTHERN EXPOSURE had at least two: one involving a truffle-hunting pig, and another involving *Armillaria mellea*. The reruns are still running on channel 58 at 4 p.m. each weekday, and so you might still be able to catch these episodes.
 - Fungal infections, once considered mainly just a nuisance, have begun to spread so widely that they are becoming a major concern in hospitals, health departments, research laboratories, and pharmaceutical companies. A Centers for Disease Control review of hospital data showed that between 1980 and 1990 the percentage of fungal infections in hospitals nearly doubled, increasing from 6 of patients to more than 11. Species of *Candida* are responsible for about 80 of these infections. Another study showed that nearly 40 of *deaths* from hospital-acquired infections are due to fungi, rather than bacteria or viruses. This, and other studies, shows that fungi have begun to prey on the growing number of patients with impaired immune systems such as occurs with AIDS, cancer chemotherapy, or drugs designed to prevent rejection of transplanted organs. AIDS patients seem to be the most severely affected, with over 70 of them developing oral (thrush) or esophageal candidiasis at some time during their illness. Even such benign fungi as baker's yeast can cause infection in immunocompromised patients. However, generally healthy people are also vulnerable to fungal infections, as the recent outbreak of *Coccidioides* in California after the Northridge earthquake, and outbreaks of *Histoplasmosis* and *Blastomycosis* in other parts of the country testify to. All of these infections are caused by normally harmless endemic soil fungi whose spores are released when the soil is disturbed.

Public health officials are uneasy with this growing problem for a number of reasons. There are few effective drugs for fungal infection, the mainstay being Amphotericin B, which has severe side effects. The reason for the side effects with use of anti-fungal drugs is that human cells have features similar to fungal cells and are thus also affected by the drugs. There are second tier drugs available, but long-term treatment of fungal infections, such as occurs in AIDS patients, has led to species resistant to some of these older anti-fungal drugs. Also, research into pathogenic fungi tends to lag behind research into other organisms, since the market for anti-fungal drugs has generally been small and the fungi are difficult to culture. However, with the rise in the incidence of fungal infections and the growing market for these drugs, researchers are working on ways to reduce the toxicity of the main anti-fungal drugs and on developing new drugs that attack fungal cell structures that humans don't share and on antifungal vaccines. (summarized from "The Emerging Fungal Threat", Science Dec. 9, 1994)

WHEN LEPIOTA BECOMES CHLOROPHYLLUM

by Alan Parker

On a Wednesday morning in late July, I received a telephone call from Hartford Memorial Hospital. A lab technician asked if I would be willing to identify what a physician thought might be a poisonous mushroom. I receive many "fungus" phone calls, and have a routine procedure that usually works well if the person calling has fresh specimens at hand. I ask a series of questions during which the technician/doctor ends up describing the most observable properties of the suspect fungus (almost always a gilled mushroom); this is followed by as much habitat information as the caller can provide. Lastly, I ask if the patient has developed any symptoms. The usual call involves a young child that was discovered browsing on mushrooms in the back yard, and the identification can be resolved at least to genus using the above process. This case was to be an exception.

Phone questions were asked and my imagination began working, but nothing was making sense – the person on the line was struggling with every basic question. She also had no data on where the "mushrooms" had been collected or what symptoms the patients had. Time for step 2 – I had to see the fungus and talk with the attending physician. The fungus

arrived at UW-Waukesha by way of courier in about an hour, and I finally understood much of the phone problem. The poor lab tech had been trying to describe something that wasn't there; the box contained several pieces of cut-up stems, from top (piece with annulus) to bottom (swollen, grass-encrusted base, no volva). Not a single cap, but maybe a small piece of cap surface with scales. Very *Lepiota/Chlorophyllum*-like; next to talk with the doctor.

A father and son had visited the ER and had been admitted to the hospital the evening before with severe vomiting, abdominal cramps, and diarrhea. They had shared a meal of some "edible" wild mushrooms. The robust, whitish-brown, gilled mushrooms had been picked on a golf course and then "carefully" identified in a field guide as *Lepiota rachodes*. Panic set in about two hours after the mushroom feast when father and son began sharing very unpleasant intestinal problems. Both decided it would be prudent to visit the nearest hospital as they reconsidered their ability to identify wild mushrooms.

As I visited with the doctor, it became apparent that the mushroom involved was *Chlorophyllum molybdites*; a classic case of misidentification followed by very characteristic symptoms. Although I had seen no greenish-colored gills, the small chunk of cap and stem pieces all fit and my initial speculation had been correct. I never found out which field guide the victims had used; both were much improved by Wednesday a.m., and this should be the end of the story. Amazingly, it's not.

On the 21st of August, I received an 11:30 p.m. call from an ER physician in Elkhorn. A father and very young son (age two) had shared a late evening meal that included some "edible" wild mushrooms right out of the back yard; the lucky (smart?) wife did not partake. They arrived at the ER about 10 p.m. with severe vomiting, abdominal cramps, and diarrhea, and the wife had brought an entire specimen of what was thought to have caused the poisoning. The doctor described it over the phone, and I immediately recognized it as another problem of *Chlorophyllum* misidentified as *Lepiota*. I didn't get any background on why the mistake occurred, but explained what steps should be taken in this type of poisoning.

From my experience, it is highly unusual to see this many *Chlorophyllum* poisonings in one season in southeastern Wisconsin. Prior to this year, the last case I was involved with occurred about six years ago in Racine. I may have even prevented a fifth case of poisoning a week ago — a person was considering his find might be *Lepiota* until I examined a mature basidiome and pointed out the beautiful light green gills.

This is obviously an excellent year for the growth and fruiting of *Chlorophyllum molybdites*, and evidently a bad year for certain people attempting to identify wild mushrooms.

ed.'s note: The NAMA poisoning case registry reports that since 1983 there have been at least 90 cases of poisoning by *Chlorophyllum molybdites*, the most for any single species. There have also been 10 reports of poisoning by *Lepiota rachodes*. Even when positive identification of mushrooms can be made, one should use extreme caution in eating mushrooms growing on golf courses and lawns, since fungi tend to accumulate pesticides and herbicides.

MELANOLEUCA IN WISCONSIN

by Steve Nelsen

The common species in southern Wisconsin is *Melanoleuca alboflavida* (Peck) Murrill. It may be recognized at maturity by its medium-large (5-12 cm.) very light cap, which typically becomes "inverted", with the margin of the cap well above the middle, but retains a small umbo in the center. It has numerous crowded gills of various lengths, a relatively long stem which has a darkish covering and a small bulb at the base. Young specimens are darkish honey yellow-brown and have bell-shaped caps; the color fades considerably as the cap expands. Kauffman says it is edible, but I have not seen anyone say it is particularly choice. Peck originally put *alboflavida* in *Tricholoma*, but Kauffman put it in *Collybia* (and curiously, spelled it *albiflavidum*). Besides the numerous and close gills, genus *Melanoleuca* is easily recognized using Meltzer's solution and a microscope: the white to cream-colored spores have small amyloid warts, and a "bald" area called a phage (well illustrated in Bon's manual). Smith, Smith and Weber estimate 30 species in North America, and Moser lists 31 in Europe, with several in common, although *alboflavida* is not known from Europe. I have also seen in Wisconsin the darker *melaleuca*, and the shorter-stemmed *brevipes*, as well as a couple of

species I certainly cannot name, but *alboflavida* is by far the most common species where I collect.

THE EVOLUTION OF THE GENUS LACTARIUS

by John Steinke

Reprinted from the Mycophile July-August 1995

While reading “The Preliminary List of Fungi from Barlow Pass, Washington” in the most recent McIlvainea, I came across a gaping hole in the **Agaricales**. No members of the family Russulaceae were there. I could not imagine even a single foray without the company of at least one member of this family. I thought, ‘what a strange place this Barlow Pass must be’. After a few minutes of mental anguish I continued to read. Exiting the section concerned with the **Agaricales**, I worked my way to the **Aphylophorales**. Suddenly, before my eyes, appeared what must have been the work of an evil perpetrator of confusion! Line after line of *Russula* and *Lactarius* species had swelled the ranks of **Aphylophorales**!

After weeks of intense therapy and guidance from my Myciatrist, I finally have begun to understand why I was so confused. According to some, the Russulaceae have been pulled from the **Agaricales**, and given their own order — the **Russulales**.

Earlier in the report, the importance of professional and non-professional mycologist working together was stressed. And then along comes this “list”. This list drives a wedge that separates the two further. I used to think that the future would require separate species lists to accommodate the needs of both groups. But after this, I feel like the future has collided with the present.

Fortunately, the very next article in McIlvainea did much to soothe me. Here the author (Bryce Kendrick) presented a rational approach to redefining *Lactarius* to exclude any sequestrate forms. Being a fan of the gasteroid fungi, I am excited by this new descriptive term and feel it will come to good use.

I long for simpler times. Times when the morel was the only mystical growth in my world and I couldn’t figure out if it was a mushroom or a fungus. But in reality, I am but a non-professional mycologist, knowing too much, and at the same time knowing not enough. I remain confined by the shadow cast by mycology, powerless to influence it, yet a slave to every change.

Note: The following “Editor’s Note” followed John’s article in the Mycophile : ‘I personally believe that matters of taxonomy are solely the domain of professionals, but we decided to let John have his say.’ (signed N.D.P.M.) This statement prompted a response from Gary Lincoff which we may run in the next issue of the newsletter.

MUSHROOMS 101

A Beginner’s Guide to

the Major Genera of Fleshy Fungi

or: “What is this stuff growing in my yard?”

by Brian McNett

(reprinted with permission from MYCOINFO)

Intro

Although this is aimed at the beginner, I’m not shying away from using technical terminology. Mastering the Latin names of fungi is an important step in being able to identify them. Not only should you be able to recognize your favorite fleshy fruitification, but you should also be able to clearly communicate its identity to others. Common names aren’t universal, and though they may work fine for common mushrooms, they give no clues to the relationship of an individual mushroom to any other mushroom.

The binomial system, on the other hand, expresses both commonality, and identity, quickly expressing both what an

organism is, and how it relates to other similar organisms. Not that this system is perfect. In fact, since our knowledge of all organisms is constantly changing, organisms, or even whole groups of organisms, are sometimes shifted around, given new names or broken apart into separate species. This causes headaches for both amateurs and professionals, but represents a necessary process of continual refinement.

For levels above the genus, pay close attention to the suffixes: **-ceae** indicates a family, **-ales** an order, and **-cetes** a class or broader category. For narrower categories, such as varieties, and forms, the abbreviations “var.” and “f.” are used along with the variety or form name. I’ll try not to overburden the unready with a bewildering array of forms and varieties, but you will encounter them from time to time, both in the field, and in the literature (both popular and technical).

I do not intend this as a guide to identification of species, for which one should rely upon a field guide specific to one’s own region. The creation of such a work is well beyond my current ability.

Russula and *Lactarius*: RUSSULACEAE

The Russulaceae are a good example of convergent evolution. Although they are macroscopically similar to the other gilled mushrooms, they differ fundamentally in anatomical structure of the cap and stem tissues. The brittle, granular texture is the result of largish round cells (sphaerocysts) which form rosettes interspersed with the usual filamentous hyphae. The spores are also deeply ornamented, with warts, spines, or ridges, which display a reaction to certain reagents, and are thus said to be “amyloid”. No need to break out the microscope. If the stem of your mushroom snaps easily like chalk, it’s likely to be either a *Lactarius*, or a *Russula*.

Some taxonomists group the Russulaceae with the **Aphyllorphorales**, which include the coral mushrooms, tooth fungi, and polypores. Others group them under their own family, the **Russulales**. Both approaches are apt to bewilder the amateur. Don’t let it bother you. Being bewildered is a normal part of the learning process. Unless you’re a taxonomist, it’s enough to know that the Russulaceae are distinct enough from the **Agaricales** to merit some sort of special consideration.

Russula and *Lactarius* are considered “white-spored” genera. However, the actual spore color of any particular Russulaceae ranges from white to yellow, yellow orange, buff, or ochraceous. Hence, spore color can be a good clue to the identity of a species within both genera. Few if any of the mild-tasting Russulaceae are dangerously poisonous. Those with an acrid taste should be avoided. And yes, taste is another clue to the identity of a member of this family of mushrooms. Chew on a small portion of the cap, and then spit it out. (Consider it an occupational hazard).

Lactarius usually exudes a milky fluid from the cap and gills when cut. The color of this “latex”, and whether it stains the flesh of the mushroom, and the color of the stain are useful indicators of species within *Lactarius*. Bearded cap margins are a good indicator of the genus, as is a pitted, or “scrobiculate” stalk. Concentric zonations on the cap are a typical *Lactarius* trait. *Lactarius* is a large and complex genus. Even the best field guides merely scratch at the surface of the described species. In parts of the eastern and southern U.S. they are among the most ubiquitous of “mushroom weeds”, a role which is taken on by *Russula* in the coniferous western forests.

Russula lacks the latex, can be more brilliantly colored, and tends to have a striate cap margin (but not always). Basically, if it doesn’t fit in *Lactarius*, its most likely a *Russula*. Both genera are mycorrhizal, and many species are specific to certain tree species. It clearly pays to know how to identify your native trees when hunting either genus.

Edibility of *Russula* and *Lactarius*

Outside those species with an acrid taste, which should be avoided, there are few if any members of these two genera which present a serious poisoning risk to the beginning amateur. However, this isn’t a wholehearted recommendation on my part. Many “edible” *Russulas* are insipid at best, and only those *Lactarii* with green-staining latex should be sampled by beginners (i.e., *Lactarius deliciosus*, *Lactarius rubrilacteus*, and *Lactarius indigo*). Those with more advanced knowledge should also be able to recognize *Lactarius fragilis* which has unstaining white latex, and a distinct “maple syrup” odor.

The very best *Russulas* are *R. cyanoxantha* and *R. xerampelina*. *R. brevipes* is also eaten, but widely acknowledged to be among the most mediocre of mushrooms — “Better kicked than picked” according to David Arora. However, it

often plays host to *Hypomyces lactifluorum*, a pimply-orange mold, which dramatically improves the flavor and texture. Proper identification of the host is vitally important however, and not a task suited to the beginner.

RECIPE:
EASY BROCCOLI BEEF STIR-FRY
by Joanne Pasek

- 1 pound flank steak, cut into strips
 - 1 pkg (6.2 oz) Rice-a-Roni Fried Rice
 - 1 tablespoon butter or margarine
 - 1 small onion, thinly sliced
 - 2 cloves garlic, minced
 - 1 4 tsp ground ginger
 - 2 cups broccoli flowerets
 - 1 cup wild mushrooms (cleaned and precooked to tender)
 - 1 small red or green bell pepper, cut into strips
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- A. In a large skillet, melt margarine over medium heat. Add meat, saute first until browned. Remove meat from skillet. Drain skillet.
 - B. In same skillet, saute rice vermicelli mix as the package directs. Stir in 2 cups water, onion, garlic, ginger and contents of seasoning package. Bring to a boil over high heat.
 - C. Cover; reduce heat to low. Simmer 8 minutes.
 - D. Stir in meat, broccoli, mushrooms, and red pepper. Cover and cook 5 to 7 more minutes or until most of the liquid is absorbed.

I sometimes use chicken breast, ground chicken, or ground beef instead of flank steak.