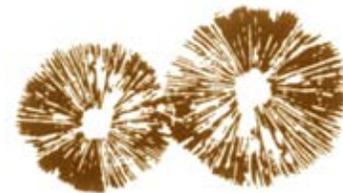


SPORE PRINTS

BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY
Number 484 September 2012



Patrice Gales Benson 1953–2012

It is with profound regret that we report the death of Patrice Benson on July 25, 2012, from stage 4 cancer diagnosed in June.

A mainstay of PSMS since she joined at the annual exhibit in 1976, Patrice had an unrelenting interest in fungi hunting, identification, and culinary enjoyment. Over the years, she served in almost every position possible in the society—class instructor, mycophagy chair, publicity chair, education chair, trustee, vice president, and president (twice). She was a mushroom missionary extraordinaire, spreading the mushroom gospel to the outside world through classes, lectures, slide shows, and hands-on projects geared to both adults and children. She was PSMS representative to the North American Mushroom Association.

In addition to her promotion of PSMS, she founded and directed the annual mushroom gathering at Breitenbush Hot Springs, an event that draws mushroom lovers from around the nation and world. She was also the president of the Daniel E. Stuntz Foundation, which supports mycological research at the University of Washington.

Although most of you will remember Patrice for her enthusiasm about mushrooms and cooking, she was also devoted to several non-mushroom activities.

Of Polish descent, she was an active participant in the city's Polish-American community. A career hematologist, in 2005 she founded BenTech Biotechnology Services, a major provider of human blood cells for medical research. She was the 26th member of the Seattle chapter of Les Dames D'Escoffier, a national organization of chefs, restaurateurs, and other promoters of fine food. She was an expert gardener, Girl Scout leader, and dependable volunteer for many jobs in support of her family and community.

Patrice is survived by her husband, Dr. Edward Benson, and daughters Katie and Jill, all of Seattle. Our condolences to all of you.

To Patrice—that's she's in some kitchen or flower garden somewhere special, sharing her smile, her food, and her love with yet one more group of friends who adore her.

—Denny Bowman



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PUGET SOUND MYCOLOGICAL SOCIETY

Center for Urban Horticulture, Box 354115
University of Washington, Seattle, Washington 98195
(206) 522-6031 <http://www.psms.org>

OFFICERS: Marian Maxwell, President²⁰¹²⁻²⁰¹⁴
president@psms.org (425) 235-8557
Milton Tam, Vice President²⁰¹¹⁻²⁰¹³
miltontan@aol.com (206) 525-9556
John Goldman, Treasurer²⁰¹²⁻²⁰¹⁴
treasurer@psms.org (206) 933-0838
Denise Banaszewski, Secretary²⁰¹¹⁻²⁰¹³

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ALTERNATES:

SCI. ADVISOR: open

EDITOR: Agnes A. Sieger, 271 Harmony Lane,
Port Angeles, WA 98362
sieger@att.net

Annual dues: single or family **\$30**; full-time students **\$20**

MEMBERSHIP MEETING

Tuesday, September 11, 2012, at 7:30 pm at the Center for Urban Horticulture, 3501 NE 41st Street, Seattle.

We are very fortunate to have Dr. Bryce Kendrick back as our guest speaker this month. The title of his presentation is "Some strange and unusual fungi I have met this year." Although he is best known as an authority on fungi, Bryce is also a generalist, with a broad spectrum of interests ranging from birds to coral reefs, and is deeply involved in the environmental movement. He is a great speaker, and I am sure you will be interested in what he will have to say.



Among his many honors, Bryce was a Guggenheim Fellow in 1979 and was elected a Fellow of the Royal Society of Canada in 1981. He has studied fungi for over 50 years and has authored over 300 mycological publications, including several books. Bryce believes that for an educated public, it is essential to interest children in science. This led to his introductory book, *A Young Person's Guide to the Fungi*, which has been well received. His other book, *The Fifth Kingdom*, is a comprehensive, readable reference work about fungi. Bryce also hopes to bring some copies of his new book *The Outer Spores—Mushrooms of Haida Gwaai*, which is now in the last stages of editing. Please come and say hello to Bryce.

Your attendance at this month's meeting is especially important because we will spend some time discussing the annual fall show, will hand out posters and yard signs for distribution (they're ready!), and will have the first round of sign-ups for volunteers.

Will members with last names beginning with the letters L-Z please bring a plate of refreshments to share after the meeting.

CALENDAR

- Sept. 11 Membership Meeting, 7:30 pm, CUH
- Sept. 17 Board Meeting, 7:30 pm, CUH Board Room
- Sept. 21-23 Field Trip (see PSMS website)
- Sept. 28-30 Field Trip (see PSMS website)
- Oct. 6 Field Trip (see PSMS website)
- Oct. 9 Membership Meeting, 7:30 pm, CUH
- Oct. 13-14 PSMS Annual Wild Mushroom Exhibit, The Moutaineers, Magnuson Park

THANK YOU, VOLUNTEER HOSTS

Debra Lehrberger

A big "Thank You" to our Spring 2012 Field Trip Hosts *Kitty Loceff, Jean-Paul Boisvert, Teddy Basladyński, Jon Hall, Sue Lynette, Teri & Robert Stephens, Greg & Rachel Arnold, Hallie Magrini, JoAnn Ireland and her Family, Hans Drabicki, and Trang Nguyen*. How lucky we were to have your involvement, caring, and most yummy selection of coffee and sweets to greet us upon arrival at our fabulous PSMS field trips!



BOARD NEWS

Denise Banaszewski

Danny Miller, our new Education Chair, is scheduling classes for this fall, including a new 8-hour beginner class. Please check the website for details. Danny is also our librarian, and not only cleaned up the library, but put our entire library catalog on-line in the members portion of our website, searchable by author or title (thank you, Danny!). You can now reserve our books on-line and pick them up at the next membership meeting. In other news, PSMS paid approximately \$2,200 of the cost of the Cispus Foray. We continue to have volunteer opportunities listed on the website and need people to sign up. The planning committee for the 2014 NAMA Foray, which will be held at Fort Worden, met in July for the first time. Chairs were assigned and the committee will meet again on August 23. The Board approved providing a \$2,000 Ben Woo grant to a University of Minnesota graduate student who is conducting an endophytic study related to the dune grasses in Oregon. The October Board meeting will be held on October 22, the Cookie Bash will be on December 11, and the Survivor's Banquet will be on March 16. The following new committees were created: Strategy Planning, Treasury and Finance, Programs, Volunteer Coordination, Development for PSMS, Arts & Crafts, Photography, Mushroom Maynia. The following committees were renamed: Mycophagy is now Culinary, and Conservation is now Sustainability and Ecology. The following committees were dis-

solved (because they were duplicative or no longer used): Web Development, Membership Roster, and Picnic. Finally, Patrice Benson, who passed away on July 25, was serving on the Board as Immediate Past President. She will not be replaced and will be dearly missed.

CUH ID CLINICS FOR FALL 2012

Hildegard Hendrickson

The popular PSMS wild mushroom ID clinics will resume Monday, September 17, from 4–7 pm at the Center for Urban Horticulture, 3501 NE 41st St., Seattle, WA. Wild mushrooms will be identified for everyone who brings some in. Also invited are PSMS members (as observers) who want to improve their identification skills.

MUSHROOM IDENTIFICATION CLASSES

Danny Miller

With the fall mushroom season approaching, now is the time to sign up for a Beginner's Mushroom Identification Class. They will be held in the Douglas Classroom at the Center for Urban Horticulture, 3501 NE 41st St. in Seattle. The cost for the series of four 2-hour classes or the one-day 8-hour class is \$50.00. Registration is limited to 40 people and you must be a PSMS member. The classes cover the basics of mushroom hunting, identification of the common mushrooms of the PNW, mushroom toxins and toxic mushrooms, and mushrooms as a hobby (cooking, arts & crafts, etc.)



Registration and payment are done at our website (www.psms.org). On the home page under the "Education" heading, click on "Classes & Workshops," find the class series that you want, click on the "register" link, and follow the instructions.

To honor one of our most prolific instructors we will have a Coleman Leuthy scholarship for one student in each series. To request a scholarship, email education@psms.org.

Please Note: There will be a registration-cancellation fee of \$10 if you cancel more than 7 days prior to the class date. There is no refund if cancellation is 7 days or less. Unpaid registrations will be cancelled if payment is not received 7 days prior to the class date.

There will be an Intermediate Mushroom ID class in January 2013 and possibly another Beginner's ID class in February. Both will be advertised in the winter.

Class A

The first Beginning Mushroom Identification Class (Class A) will be a one-day class on Sunday, September 23, 2012, from 9 am–5 pm. It has been designed for members who want to be ready for the fall 2012 mushroom season.

Classes B & C

Two additional Beginning Mushroom Identification Classes are planned. Both are a four-class series and will be held from 7 pm–9 pm on the following dates:

Class B - Tuesdays, Oct. 16, Oct. 23, Oct. 30, Nov. 6

Class C - Thursdays, Nov. 1, Nov. 8, Nov 15, Nov. 29

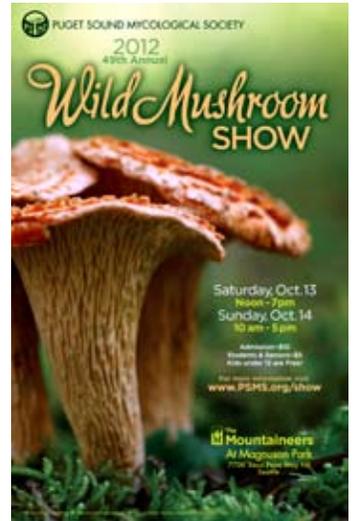
If you have any questions, contact Education Chair Danny Miller at education@psms.org or call 206–522–6031 and leave a message in the general mailbox. Please leave your phone number first before your message, so we have your number if the message is cut short.

FORTY-NINTH ANNUAL WILD MUSHROOM SHOW

Kim Traverse

Here we go again! Can you believe that a society that is only 48 years old is holding its 49th show? Founded in 1964, it held its first show that same year and has continued year after year after year. Quite a run.

This year the show will again be held at The Mountaineer's headquarters at Magnuson Park and the dates are Saturday, October 13th and Sunday, October 14th. Our main speakers will be Taylor Lockwood, Photographer Extraordinaire, with a spanking new presentation based on his mushroom explorations in Asia, and Professor Tom Volk, often referred to as *the Rock Star of Mycology*. All the usual displays, food tastings, art, and all around fun will be there too—all the things that have consistently made our show one of the biggest and most popular in North America.



The show would not be possible without your help as volunteers. Please sign up at the September and October membership meetings or contact me directly at traverse.kim@gmail.com or 206–380–3222.

This will be the fifth year that I have chaired the show and I have decided it will be my last. Time to let other people with other ideas infuse the event with the variation that lets something like this succeed for so many years. Chairing has consistently been one of the most rewarding experiences of my life and working with such amazing volunteers has been much of the reason for that. The reaction of attendees is the rest of the reason—every year I've gotten to talk with so many people of every age who are delighted and surprised to learn how varied and fascinating the Kingdom of Fungi is. I hope someone will soon step forward to take over the Show Chair duties. I look forward to passing on what I've learned to my successor.



MUSHROOM STAMPS FROM AUSTRALIA

Brian S. Luther

In 1981 Australia was the first South Pacific nation to release a set of four beautiful myco stamps with native fungi as the main illustration. They also have maxi-cards (postal cards), each illustrated with one of these four species, as well as having the appropriate stamp of the same and a mushroom-illustrated first-day cancel. Several different FDCs (first day covers) with fungi on the cachet (envelope illustration) have also been issued. FDCs are not listed in the Scott Catalog, but the stamps on these can be referenced separately.

In addition to these items, I'm pleased to bring to your attention a previously unknown and really neat little 1993 MID issue (MID = mushroom in the design of the illustration) not reported in any of the mycophilatelic literature I cited in my earlier article in June (Luther, 2012). This is a four-stamp set of aboriginal art, Scott 1336–39, with #1338 (\$1 value) showing a painting by artist Ginger Riley Munduwalawala with a bird, snakes, clouds, the sun, and six little green-capped mushrooms on the ground. This artist (who's male in spite of the first name) is renowned for his unique style. This stamp is a very interesting find. Only this one stamp of the set of four has fungi illustrated, so it's ¼ MID following my terminology.

Please note that Christmas Island, an Australian territory in the Indian Ocean about 224 miles south of Java, has issued two separate sets of postage stamps illustrating fungi (in 1984 and 2001).

I'm providing photos for only some of the ones listed in the tables. Black & white pictures of many of these items (except the 1993 MID issue) can be found in the reference for Weber (1983–1994) and some may be found on-line on eBay, etc., in color.

References

Luther, Brian S. 2012. The earliest postage stamps with fungi. *Spore Prints*, 483 (June), Bulletin of the Puget Sound Mycological Society, pp. 4–6. On-line and in color at www.psms.org.

Weber, Gerlinde. 1983–1994. Pilze auf Briefmarken. *Mykologie und Philatelie*. Ten three-ring-binder notebooks. Edited by Egon and Johanna Arnold.



Australia 806-9, 1981.

Australia 1338 with six green capped mushrooms at the bottom.



Australia

Scott Cat. No.	Date Issued	Type	Value	Species
806	8/19/1981	Main	24¢	<i>Cortinarius cinnabarinus</i>
807	"	"	35¢	<i>Coprinus comatus</i>
808	"	"	55¢	<i>Armillaria luteobubalina</i>
809	"	"	60¢	<i>Cortinarius austrovenetus</i>
"	Presentation pack of these titled "Australian fungi"			
"	Stamped maxi-cards for each, plus a mushroom cancel			
N/A	FDCs with all four stamps, cachet says "Australian Fungi," with three different regular cancellation types			
N/A	Same only with a mushroom cancel			
N/A	Fleetwood FDCs, each with only one stamp of the four species and they have different sayings and a larger cache image matching the same mushroom stamp			
N/A	FDC titled "Australian Fungi" with different cachet that says "The crumbling log rebuilds the rocky soil for the sur-vival of other plants."			
N/A	8/24/1984	MID	N/A	FDC, XIII International Botanical Congress, MID in cachet
N/A	4/7/1984	MID	N/A	St. Patrick's Race Club, Broken Hill N.S.W. (New South Wales), MID cancel
1338 (1336–39)	1993	¼ MID	\$1.00	Aboriginal art by Ginger Riley Munduwalawala with six little green mushrooms

Christmas Island (Australian territory)

Scott Cat. No.	Date Issued	Type	Value	Species
152	4/30/1984	Main	30¢	<i>Leucocoprinus fragillissimus</i>
153	"	"	40¢	<i>Microporus xanthopus</i>
154	"	"	45¢	<i>Trogia anthidepas</i>
155	"	"	55¢	<i>Haddowia longipes</i>
156	"	"	85¢	<i>Phillipsia domingensis</i>
N/A	"	"	"	Same FDC
432	10/25/2001	"	\$1.00	<i>Chaetocalathus semisupinus</i>
433	"	"	\$1.50	<i>Pycnoporus sanguineus</i>
N/A	"	"	"	Same FDC



Close up of Australia 1338.



B. Luther

Christmas Island 152-6, 1984



B. Luther

Christmas Island 432-3, 2001

PRESIDENT'S MESSAGE

Marian Maxwell

We had our Cispus Foray at the end of May, organized by Patrice Benson (our Immediate Past President, Education Chair, and board member), followed by our June meeting. Then we took our break for the summer, not imagining that we would lose our dear friend Patrice in that short time. We will have a PSMS tribute to Patrice at the November meeting before the guest speaker's presentation. Agnes Sieger has written an obituary for Patrice for this month's *Spore Prints*. Thank you, Agnes.

Patrice was a point person for so many elements of PSMS, her hard work and her friendship will be missed. We can work hard to fill her shoes in her committees, but we will always miss Patrice and the unique and wonderful person she was.

In addition, former PSMS president Carl Hermanson (1980–1982) passed away this summer. We offer our condolences to Patrice's and Carl's families and other friends.

Danny Miller has graciously stepped in to take over as Education Chair for Patrice. He and Hildegard Hendrickson have been scheduling the classrooms, organizing the teachers for the upcoming classes, and reviewing the class materials. Thank you both for stepping in and being there when we needed you! Please see the separate article in this issue regarding the upcoming classes.

Danny Miller is also our new librarian and has re-organized the library over the summer and added the Ben Woo collection that was recently donated by Dr. Joseph Ammirati. We thank Dr. Ammirati for the donation of Ben's books. Thank you, Kim Traverse, for your years of service as our previous librarian!



The Cispus Foray in the spring was a great success, with over 100 people attending. The foray cost \$8,105.97, with fees for registration covering \$5,847.00, so PSMS covered \$2,258.97 of the total costs. Patrice Benson did a great job of lining up events and speakers. Dr. Steve Trudell and Dr. Ammirati gave outstanding talks. I personally think that Brian Luther's presentation and display on *Echindontium tinctorium* was his most fascinating one yet! Milt Tam's cultivation workshop and the dyeing workshop by Patrice, Allisa Allen, and Cathy Lennebacker had rave reviews. As for hunting mushrooms, there were mushrooms to be found, but one had to work at it since there had been no rainfall.

We have exciting upcoming field trips planned for this fall owing to the diligence of Field Trip Chair Brian Luther! He has to do this well ahead of time since many group campsites book up a year or two in advance. Thank you, Debra Lehrberger (Field Trip Host Chair), for scheduling hosts for some of the trips. If you would be willing to host a field trip or have questions about hosting, please contact her at host@psms.org or at 206-522-6031.

The poster for our annual wild mushroom show is out, and it is amazing! Once again we thank Lisa Page Ramey for designing it. Thank you, Machel Spence, for supplying the beautiful *Gomphus* photograph for the poster!

PSMS LIBRARY NOW ON-LINE!

Danny Miller

Did you know that PSMS has a great library of books available for our members to borrow? And that with the recent addition of Ben Woo's personal collection (Ben was our society's first president), we now have about **750** different books available?

There are books on every aspect of mycology, from general science and ecology to dozens of different field guides for the Pacific Northwest. There are even field guides to other parts of the country and the world if you are planning a vacation. We also have whole sections on medicinal and toxic mushrooms, cultivating and cooking with wild mushrooms, and mushroom dyeing. And for the budding scientists among you, we have many of the definitive technical monographs necessary for ID of even the most cryptic little LBM.

But best of all, as of right now, the whole collection is available on-line for you to peruse and reserve for checkout! Go to psms.org and log in to the members section. At the bottom of the page, in the "Members Area Features," choose "Library." You will see the entire list, which you can sort by title or author. If you see a book you would like to borrow, just click the "Reserve" button.

Somebody will bring it to the next monthly meeting for you. Books can generally be borrowed for a month or two but please note that some volumes are marked for "Library Use Only" and can be read only on the premises.

So have fun checking out our new library, and Happy Mushrooming!



*"Men of mushroom-gathering are visible
In the mountains covered in light greenery
In company with some women"*
(Shiki)

NEW TREATMENT SAVES DOG POISONED BY A. PHALLOIDES Shea Cox, DVM, Mike Barlia, DVM, S Todd Mitchell. MD

Press conference, Berkeley, CA, July 16, 2012



Berkeley, CA - Pets eat things they shouldn't every day, but in the Bay area and across the country, there is a poisonous mushroom that causes a near 100% mortality rate. It is called the Death Cap (*Amanita phalloides*), an extremely toxic species for which just a

single specimen is enough to kill a large dog or an adult human being. In the greater Bay Area, Death Caps and related species can be found during all seasons, resulting in many dog deaths every year. This is one of the most difficult diagnoses a vet must deliver, with the heartbreaking words that always seem to stop midway in the throat: "I am so sorry, but there is nothing we can do to save your pet."

This story begins with Kasey, a 2-year old Miniature Australian Shepherd who just 12 hours earlier had been frolicking in a Healdsburg oak grove with his vacationing family. Kasey began to vomit repeatedly and refused food and water. The first vet to assess him suggested a simple gastrointestinal upset and provided symptomatic treatment.

When Kasey became even more ill and lethargic, he was admitted to the PETS Referral Center in Berkeley, later developing grossly bloody diarrhea. Blood work revealed severe dehydration along with dramatic elevations of enzymes and other indicators of acute liver failure. Fearing amatoxin mushroom poisoning to be the most likely explanation, the PETS staff quickly made arrangements with the toxicology lab at the UC Davis Veterinary School for the rapid analysis of Kasey's urine. Kasey's owners drove to Sacramento to deliver the sample themselves

The results were reported to PETS the following day and revealed crushing news: positive for amatoxin, the deadly poison contained in Death Cap mushrooms. Kasey's "mom," Helen, was in the exam room when PETS emergency veterinarian Shea Cox received the fax. Cox had the heavy burden of relaying the heartbreaking information. Walking into the room, no words were needed when Helen saw the tears welling up in her eyes. Ironically, one of Cox's passions is educating pet owners about avoiding these deadly poisonous mushrooms, which are so prevalent in Northern California.

But unlike the usual fatal outcome to a pet mushroom poisoning, Kasey's story doesn't end here. Researching a web page at clinicaltrials.gov, veterinarian Mike Barlia, Hospital Director of PETS Referral Center, contacted Santa Cruz physician S Todd Mitchell, the Principal Investigator of a nationwide clinical trial investigating a using an intravenous medication derived from milk thistle as an antidote for amatoxin mushroom. Dr. Barlia, like many other vets before him, was devastated to hear that the drug was off limits to sick animals. However, based on his recent experience consulting on cases of amatoxin poisoning in rural India (where there is also no access to the milk thistle drug), Dr. Mitchell recommended that Australian Shepherd Kasey instead immediately undergo a simple procedure where the poison-laden bile contained in his gall bladder would simply be aspirated and removed via needle.

The procedure was performed a short time later by David Detwiler, DVM, and then repeated the following day. The aspirated bile

had the appearance of burnt motor oil—just as Dr. Mitchell had described. A mere two days later, Kasey was well enough to be sent home for further recuperation after clinical improvement and lab studies indicated that recovery was well under way.

Kasey is the first dog with mushroom-induced liver failure to be treated by this simple method of combining aggressive intravenous hydration with biliary drainage. Kasey is now completely back to his frisky self, safe at home with his family. Helen reports, "You would never know he almost died! We hope that Kasey's story will lead the way to saving more mushroom poisoned dogs in the future. We are so grateful that the team at PETS never gave up."

Veterinarians Cox and Barlia of the PETS Referral Center in Berkeley in collaboration with Dr. Mitchell are now reaching out to the greater veterinary community in order to share this promising new protocol for dogs afflicted with deadly amatoxin mushroom poisoning. They are available for consultation at any time by calling (510) 219-0112 or visiting their website at www.petsreferralcenter.com. The data from this case and future referrals will be gathered in anticipation of publishing a new and definitive universal standard of care for the treatment of dogs who have ingested this deadly poison.



A recuperating Kasey with owners and veterinarian Barlia.

VAIL RESORT MAKES FUNGUS FORAGING A LUXURY EVENT

Catherine Tsai

The Associated Press, August 15, 2012

VAIL, Colo. - Mushroom hunting has never been as easy, or comfortable, as this.

For \$200 a person, the Four Seasons Resort at Vail sends out guided expeditions in luxury SUVs to look for mushrooms. The Mushrooms & Mercedes program includes a lunchtime break with wine, cheese, and prosciutto and ends with a three-course mushroom-themed meal back at the hotel.

"We have gorgeous forests and mountains. We want the guests to get out there and experience the best in Colorado," said Angelica Palladino, director of food and beverage.

The resort offered 40 spots on its mushroom expeditions this year, with a remaining hunt Friday. Nearly every spot has sold, and not always to hotel guests. The hotel plans to offer the program again next summer.

The season's first session drew seven people, all of whom are second-home owners or renters in town.

At the first session, participants gathered at 10 am in the back of the hotel's Flame restaurant for complimentary coffee and pastries.

They chatted up guide Larry Evans, a tall, tan former University of Montana mycology professor prone to wearing his white hair in two skinny braids, and examined the multitude of mushroom shapes he had collected a day earlier.

After Evans gave a short, lively presentation on what they might find, the group set out in two Mercedes SUVs for Shrine Pass off Interstate 70.

On the hunt

Each hunter was sent out with a basket holding a mushroom-cutting knife, an energy bar, an apple, water, and a whistle to blow for help.

The SUV drivers brought sunscreen and umbrellas for shade.

Evans advised foragers to check near trees and dips in the soil, where squirrels might have smelled truffles, and to grab anything resembling a mushroom.

The group scattered into the lodgepole pines in 58-degree temperatures, some eager, some anxious.

“Some people, you can tell. It’s like, ‘Let’s go have an Easter egg hunt,’” Evans said.

Within minutes, legal recruiter Morgan Warren, 36, of Houston had cut a mushroom the size of a portobello.

An hour later, while sipping wine, snacking, and sitting in camp chairs, the group reconvened to examine the dozens of mushrooms they had collected.

There were round puffballs, a scaly hawkwing, and *Lactarius* mushrooms, which are milky when cut.

Evans pointed out one that he suspected was from the *Amanita* family, with warts on its cap, an edge like a pleated skirt, and gills underneath the cap that don’t touch the stem. It was poisonous.

Then it was back to the SUVs, which dropped everyone off at an aspen grove to stomp through a thicket of prickly plants and fallen logs to find more species.

Finders’ feast

Later, in the hotel’s kitchen, executive chef Jason Harrison’s staff demonstrated how to clean mushrooms.

They cooked two types that Evans deemed edible from the foragers’ collection. One was white mushroom that grows in clumps that tasted like asparagus. The second had a large, brown cap and had an earthier taste, the group decided.

The hotel staff poured more wine.

Then, before the Flame restaurant opened for dinner, Harrison seated the adventurers for a mushroom and arugula salad with ice wine vinaigrette and chicken chasseur (also known as hunter’s chicken), with a mushroom-based sauce atop sweet corn. Harrison switched the menu from last year’s mushroom risotto, so repeat foragers wouldn’t be bored.

A dessert of chocolate and macarons followed.

Evans noted that not much of the group’s harvest had made it to their plates, whether because it was toxic or not high enough quality to eat.

“That was the takeaway for me—how bad I was at mushroom-picking,” quipped Warren’s husband, David Warren. “I picked 99 pounds of mushrooms, none of which I can eat.” But Morgan Warren said she still had fun foraging with an expert.

“I wouldn’t do that on my own,” she said.

Guide Larry Evans discussing a mushroom found during a mountain excursion organized by the Four Seasons Resort Vail on Aug. 4.



Catherine Tsai (AP)

WHAT LURKS IN LOGS

Carl Zimmer

Discovermagazine.com/, August 10, 2012

The world, it bears reminding, is far more complicated than what we can see. We take a walk in the woods and stop by a rotting log. It is decorated with mushrooms, and we faintly recall that fungi break down trees after they die. That’s true as far as it goes. But the truth goes much further.

These days scientists do not have to rely on their eyes alone to observe the fungi on a log. They can drill into the wood, put the sawdust in a plastic bag, go to a lab, and fish the DNA out of the wood. A group of scientists did just this in Sweden recently, sequencing DNA from 38 logs in total. They published their results this week in the journal *Molecular Ecology*. In a single log, they found up to 398 species of fungi. Only a few species of fungi were living in all 38 logs; many species were limited to just one.

Consider that on your next walk in the woods. The one or two types of mushrooms you see on a log are an extroverted minority. The log is also filled with hundreds of other species that don’t make themselves known to you. Their invisible exuberance is a paradox. The fungi that live on rotting logs all make a living by releasing enzymes that break down wood. It’s puzzling that so many species can coexist in a log this way, instead of a single superior fungus.

The forces that drive up the diversity of fungi in a log are similar to the ones that foster the thousands of species of microbes in our bodies. For one thing, a log or a human body is not a uniform block of tissue. They both have geography. A microbe adapted to the acid bath of our stomach won’t fare well on the harsh desert of the skin. Likewise, what it takes to succeed as a fungus in a branch is different from what it takes in the heartwood of the trunk.

The human body changes over time, and a rotting log does, too. Babies are colonized by pioneer microbes, which alter the chemistry of their host and make it more welcoming to late-arriving species. The pioneers on a fallen log may include the spores of some species of fungi lurking in trees while they’re still alive. They burst into activity as soon as the tree crashes to the forest floor. Other species, delivered by the wind or snaking up through the soil, find it easier to infiltrate a log that’s already starting to rot. The early fungi may go after the easy sugar in the log, while later species unlock the energy in tougher tissues, like lignin and cellulose. Which particular pioneer starts to feed on a log first can make it inviting to certain species but not others.

Warfare also fosters diversity in a log. The fungi inside a log battle each other for food, spraying out chemicals that kill off their rivals. Each species has to balance the energy it puts into making enzymes to feed and weapons for war. Sometimes the war ends in victory for one species, but very often the result is a deadlock that leaves several species in an uneasy coexistence. There are more peaceful forces at work in a log, too. Many species of fungi in a log depend on each other. One species may feed on the waste produced by another, and supply another species with food in turn.

The world in a log influences the world as a whole. If it wasn’t for wood-rotting fungi, forests would be strewn with the durable remains of dead trees. When the first massive forests spread over the land 350 million years ago, fungi hadn’t yet adapted to decomposing logs. Instead of turning to soil, many trees ended up as coal. The great age of coal ended about 300 million years ago—right around the time that tree-rotting fungi emerged. Their emergence may have brought the age of coal to an end.

STUFFED MUSHROOMS À LA JULIA CHILD

Julia Helvey

<http://www.columbiatribune.com/>, August 14, 2012

August 15 was the 100th anniversary of Julia Child's birth. To celebrate, Julia Helvey of the *Columbia Tribune* adapted the recipe for champignons farcis (stuffed mushrooms) from a program devoted to vegetables. These would be delicious for a casual back-to-school buffet. You can imagine you are wielding a sharp knife just as Julia did.

Ingredients:

- 12 large mushrooms
- 2 or 3 tablespoons melted butter
- Salt and pepper
- 2 tablespoons minced shallots
or scallions
- 2 tablespoons butter
- 1½ teaspoons all-purpose flour
- ½ cup cream or milk
- 2 tablespoons fresh minced parsley
- Additional salt and pepper
- ¼ cup grated Swiss cheese
- 1 or 2 tablespoons melted butter



Directions:

Remove mushroom stems and reserve. Wash and dry the caps, brush with melted butter, and arrange hollow-side up in a shallow baking dish. Season lightly with salt and pepper. Wash and dry the stems and mince. By handfuls, twist in the corner of a towel to

CARL HERMANSON
July 24, 1921–August 7, 2012

Carl Hermanson joined PSMS in 1971 and served as PSMS President from 1980–1982. Born in Sweden, he came to America at age 2½ and grew up in Rockford and Evanston, Illinois. He graduated from Northwestern University with a BS in Electrical Engineering and from The University of Chicago with an MBA. He married Betty McCambridge on November 7, 1943, in San Diego, California, where he served in the US Navy during WWII. Subsequently he worked for the Atomic Energy Commission in Chicago before moving to Seattle to become a manager at Boeing. Carl is survived by his wife, Betty, and sons John (Kathy), Paul (Mariane), and Jim (Andrea), and eight grandchildren. He was preceded in death by his daughter Karen (David Swee).

extract as much juice as possible. Sauté with the shallots or scallions in butter for 4 or 5 minutes until the pieces begin to separate. Lower heat, add flour, and stir for 1 minute. Stir in cream or milk and simmer for 1 or 2 minutes until thickened. Stir in parsley and seasonings. Fill the mushroom caps with this mixture, and top each with 1 teaspoon of cheese and droplets of melted butter. Set aside until ready to finish the cooking. These can be refrigerated at this time. About 15 or 20 minutes before serving, bake in upper third of a preheated 375-degree oven until caps are tender and stuffing has browned lightly on top. Serve hot.

Makes: 12 hors d'oeuvres or garnishes.

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Puget Sound Mycological Society
Center for Urban Horticulture
Box 354115, University of Washington
Seattle, Washington 98195

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Be sure to volunteer for the Annual Wild Mushroom Show!