

September 2016

SOMA

SONOMA COUNTY MYCOLOGICAL ASSOCIATION

Volume 29:1



Cover Story:
Wildfire Morels 4

Monthly Speaker
Noah Siegel 22
(Don't Miss it! Sept. 22 at 7:30)



NEED EMERGENCY MUSHROOM POISONING ID?

After seeking medical attention, contact Darvin DeShazer for identification at (707) 829-0596. Email photos to: muscara@pacbell.net and be sure to photograph all sides, cap and of the mushroom. Please do not send photos taken with older cell phones – the resolution is simply too poor to allow accurate identification.

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Dispatch From the Duff September 2016

Hello to all.

The season begins with slightly more hope for success than last year.

A number of members have volunteered to join the Board this September. Most importantly, the Treasurer position will be filled in the next two months. Because SOMA has reached a certain financial level within the State of California's guidelines for Non-profit groups, there are a few more tasks to complete to insure our status meets those rules. So be it. Once formalities have been completed, we will publish all the details in October.

The Speaker schedule has been set through November. First, on September 22nd, we will have Noah Siegel. In addition to his talk, Noah will bring copies of the new book he and Christian Schwartz wrote, "Mushrooms of the Redwood Coast".

In October we will have a class on Mushroom Identification. The syllabus is still in planning, but there will be something for all levels of interest and skill.

In November, Brian Perry, will talk to the group. Both Noah and Brian are very well informed and interesting speakers. It will be a good beginning to SOMA's activities for all mycophiles.

Best regards,

Jim Wheeler

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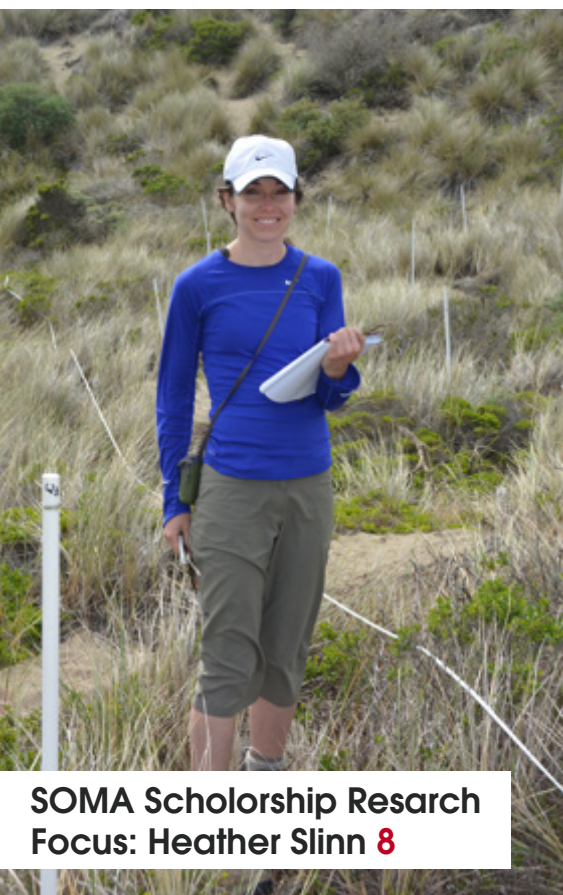
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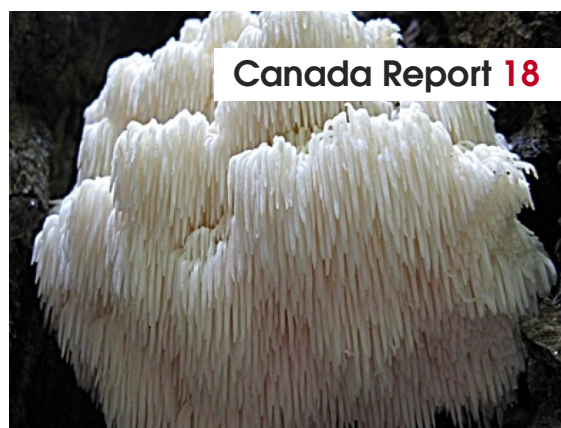
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Larson and his co-authors conducted their study in the Yosemite Forest Dynamics Plot, a long-term research site located in Yosemite National Park. A fire burned the research site in September 2013, killing more than 70 percent of the trees. Researchers then surveyed for morels in May 2014 in 1,119 small sample plots within the research

"The magnitude of post-fire morel production, especially the first year after fire, clearly supports the park's current rule allowing people to pick one pint per day for personal use." At the start of their study Larson's team was surprised by how little research has been conducted on morel mushroom productivity.

"We reviewed every published paper on post-fire morel mushroom productivity we could find," Larson said. "Amazingly, only three earlier studies – in Alaska, Oregon and British Columbia, Canada, provide statistically sound estimates of morel abundance after forest fires."

Surprising Morel Abundance after CA Wildfire

A morel mushroom emerges from the Yosemite National Park forest floor the spring following a forest fire.

University of Montana forest ecology Professor Andrew Larson recently published research estimating the abundance of morel mushrooms after a wildfire in California's Sierra Nevada.

"So many people love to harvest and eat morel mushrooms," Larson said, "but there is very little research that measures the abundance of morels after a forest has burned. We wanted to give forest managers concrete data on morel abundance."

site. Where morels were found, researchers discovered most of the ground

"So many people love to harvest and eat morel mushrooms"

surface was 100 percent burned by fire.

Morels typically are found close together, yet unevenly distributed across the landscape. According to Larson, burned white fir forests in Yosemite alone could produce an average crop of more than 1 million morels per year, a sustainable amount for recreational picking.

Much is still unknown about where morels grow after a fire, so Larson and his co-authors also propose a conceptual model to guide future research that could explain the mushroom's spatial distribution in burned areas.



Winter is Coming

By Mycochef

Yes, it'll happen again: We shall surely have fall and winter and spring and there will be mushrooms to behold and to be held, id'ed and eaten too. Yep—gobbled up, down, and all around and savored mostly because we ourselves picked 'em. What a hoot to be able to learn how to forage, show respect for our forests and pick fungi safely and cook them and even stay alive.

Yes—what a hoot. That's what we here at SOMAmushrooms.org Central HQ, Cotati Adjunct, are going to make sure occurs with folks who come to play in the woods with us up at deeply beloved Salt Point State Park on our monthly forays and especially for the folks who come to the monthly meetings, listen

and then join in, to help us help everyone else learn to assure the good times just continue to roll.

They keep on going due to the simple and unavoidable fact that we're all volunteers here at SOMA and to be one of the chosen few (we elect you but we are easily bribed) who actually joins in and pushes our little club onward is a really rewarding work.

Some of us are judges at the local science fairs,

some organize the Universe-Famous SOMA Wild Mushroom Camp, some help at forays, some at meetings, some just offer big help where and when it is needed and for this I can guarantee you a special spot in Fungal Heaven sitting right next to the Gods themselves. Yep—guaranteed!

Now for the Report: For those who have patches in the Special Areas of Big Time Summer Fog Drip—or for those of you who'd like to get a map of those places (gotten by becoming a more active member of the club) foragers have told of all kinds of fungi sprouting hither and yon from sea level to way up on the coastal ridges and hills of the East Bay.

And for the Secret Report of Summer Porcini: Oh wait—that's just for the truly active clubbers. But here is a shot sent from somewhere and very recently by an acclaimed picker of slow moving mushrooms. Fortunately his focus on fungi is better than with his iPhone.

I think this was found quite a way away from the coast and it smacks of a Sierran fall bolete and I know this because fall bolete hunters I hang with use special trowels to pry up the deeply entrenched buggers, even those of this small size.

I bet this'd make for a sweet raw porcini, garlic and parsley, olive oil and a bit of lemon, flaky sea salt salad. Yep. And since we said winter is coming what better way to spend our hours between storms reading The Great New Mushroom Book, Mushrooms of the Redwood Coast? This one is one very special one.

Written by Friends of SOMA, Noah Siegel and Christian Schwartz this compendium of local goodies and baddies, yummys and tummy wrenchers, big uglies and diminutive beauties, is just what the (mycology) doctor ordered. "Read two chapters and go out hunting in the morning." At 601 pages it is full of fab photos and good info for both the beginner and the ender too.

That's all for now folks! Hope to see some of you at the forays and the meetings.



Summer Forage Report

Spotting *Hypomyces lactifluorum*

by Fred Salisbury

Hypomyces lactifluorum. You can hide, but you can't run!

I finally realized something: mushroom hunting is hard. I'm not talking about the physical side – busting brush and tromping up and down steep hills. I'm not even talking about the difficulty of locating a mushroom that is buried under the duff, or the many years of experience required to develop the skills to consistently find and identify mushrooms. It's the emotional side of it that gets to me.

I was reflecting on this recently at Salt Point. I had just spent the last five minutes

pulling lobster mushrooms out from under the skirts of a clump of grass.

Beautiful, bright orange and red lobster mushrooms – over a dozen – and all but one of them was soft, well past their prime. And they stank.

Imagine, lobster mushrooms in July! As a rank beginner, I had long been skeptical of the seemingly mythical reports of mushrooms in the middle of summer. After all, it's not like this is Northern Europe, or even Alaska. Fog drip chanterelles, in quantities large enough to make a meal? If you say so!

However, that doubt shifted at the end of July. I was in Humboldt County, and the nicer grocery stores were filled – filled! – with beautiful golden chanterelles and large piles of lobster mushrooms. And they were all fresh – these didn't look like they came from out of state. So after returning from Humboldt, I started thinking that summer mushrooms just might be a possibility in Sonoma County.

So I headed up to Salt Point and found *Russula brevipes*. There were quite a few of these around, even in late July!

The initial signs were

Summer Forage Report...continued

good. Within a couple of minutes in the woods, I found a large *Russula*. Then quickly another, and another. My excitement grew. They were not carpeting the ground, as in December. But there were plenty of them. After all, where there is one mushroom, there could be more.

The thrill quickly faded, as the patches grew sparse. Soon I was not finding any mushrooms at all. I started poking around in deep thickets hoping to find a few chanterelles. Nothing. I logged uphill.

Some type of *Russula*. It smelled and tasted mild, but I didn't eat it. I'm not that brave.

And then, at the edge of the path, a tiny bit of bright orange peeked out at me from under some Bishop Pine needles. I brushed them away, and there in front of me was the glowing gnarled cap of *Hypomyces lactifluorum*, the lobster mushroom. It was perfect – firm and dense, with a mild and pleasant smell. Although a total beginner, I knew enough to search around for the inevitable neighbors. And I found them, hiding under the bunch grass – and they had all gone bad.

The decaying mass of *Hypomyces lactifluorum*. Talk about disappointment! Although deflated from finding all those rotting lobster mushrooms, it was a great day nonetheless. After the lobsters, I kept searching, and managed to find a few

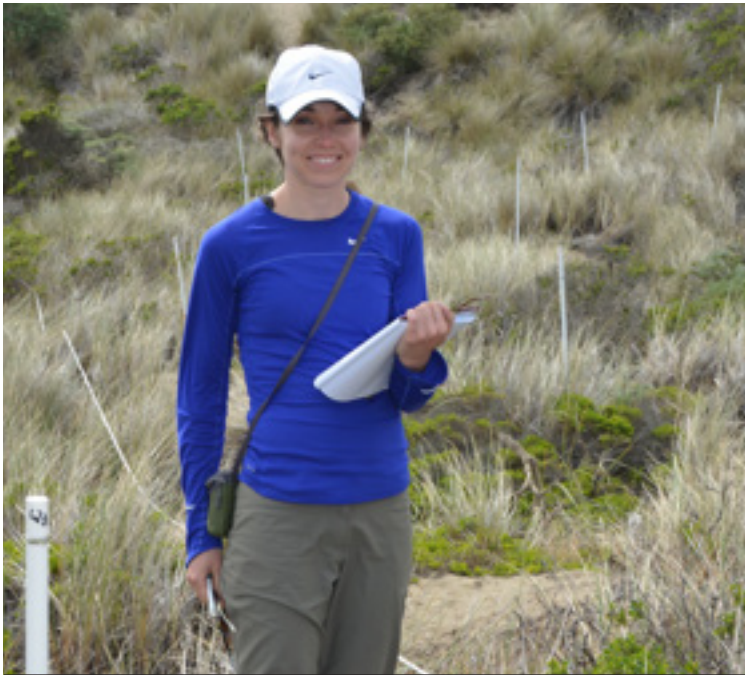
fog drip chanterelles – just enough for an omelet. More importantly, I proved to myself that mushroom hunting in July is a definite possibility, even in Sonoma County. And I did this by allowing for new ideas, thinking critically, and applying previous lessons. Not to mention actually getting into the woods.

After all, mushroom hunting has many appeals. But the largest one for me is that moment of realization that comes when you stumble upon a new patch, and

you look around, and see that the hillside you are on is carpeted with mushrooms. It is spotting that speck of a cap, that tiny clue, that reveals itself as just one of many chanterelles, or as the cluster of hedgehogs, or as a flag signaling additional porcini buttons nearby. Or that the lobster mushroom you just found is merely part of a much larger group: a couple of *Cantharellus formosus*, growing in the drip line of a small Douglas fir.



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The author, at Bodega Bay, CA



An example of a spider (with eggs) in a *Taphrina* blistered leaf of a *Populus* tree³

SOMA Scholarship Research Focus: Heather Slinn

Editor's Note: This is taken from Heather Slinn's research summary as a PhD student at the Biology Department University of Nevada Reno. <http://www.heatherslinn.com/>. Heather was recently awarded a graduate student scholarship by SOMA.

My first research project investigated the effects of a fungal pathogen (*Taphrina* sp) on black cottonwood (*Populus trichocarpa*) and its associated arthropods, which is currently in review.

This fungal pathogen altered the shape of the leaves to create cupping. We noticed that predatory web-building spiders tended to be found nestled within these

cup-shapes, possibly because of increased protection from the elements and predators.

This observation led us to a number of questions about how this pathogen influenced the arthropod community. Our study took place in a common garden (a garden of *Populus trichocarpa* with known differences in their genetic background). Black cotton-

wood trees with different genetics had different herbivores, predators and the severity of the pathogen.

Trees with more leaf cupping did experience higher densities of web-building spiders. Interestingly, the effects of the pathogen increased herbivory in the field but not in the lab.

With the SOMA funding I am investigating how plant traits structure fungal

endophyte communities in a tropical plant genus *Piper*.

Here is a sample from my proposal for this award: Fungal endophytes live invisibly within aboveground plant tissues and are ubiquitous in land plants but are often a hidden layer of diversity. These fungal endophyte communities are interesting to study in order to increase our understanding of their relationship with plants, and the mechanisms mediating their interactions.

Fungal endophytes can have positive, negative, or neutral effects on their host plants and often mediate plant-herbivore-enemy interactions in ecosystems.

The spectrum of interactions a fungal endophyte can have with its host depends on environmental conditions. For example, fungal endophytes have been shown to help with nutrient acquisition in plants when environmental conditions are ideal for plant growth. However, when plants become stressed (e.g. drought) fungal endophytes can become parasitic.

In other cases, the interaction has no observ-

able effect on the plant and the endophyte is la-

ganisms that interact with plants. Thus it is reason-



tent. The diversity of these endophytes is reflected in the breadth of ways that they interact with their host plant and these biological interactions are often overlooked in a broader ecological context.

While we know that fungal endophytes can influence their host plants, much less is known about how the host plant shapes the endophyte community. In plant-arthropod interactions, plant genetic variation is a well-recognized factor that can scale up to influence herbivores, predators, and other or-

able to suspect that host plant genetics might also shape the community of fungal endophytes living in the host tissues. Plant chemistry is a likely candidate for a plant trait that alters the environment in which fungal endophytes can establish and live.

So far, the majority of what we know about fungal endophytes comes from grasses in temperate regions and the toxic compounds that they produce. Yet, little is known about how fungal endophyte communities are shaped, and there are only a handful of stud-

ies that have attempted to answer this question in diverse tropical ecosystems.

Fungal endophytes are more diverse in tropical than in temperate regions due to factors such as climate, host plant species and plant functional traits. However, the extent to which fungal endophyte communities in the tropics are mediated by plant genotype and plant chemistry is completely unknown.

As a result, I will ask the following questions about tropical en-

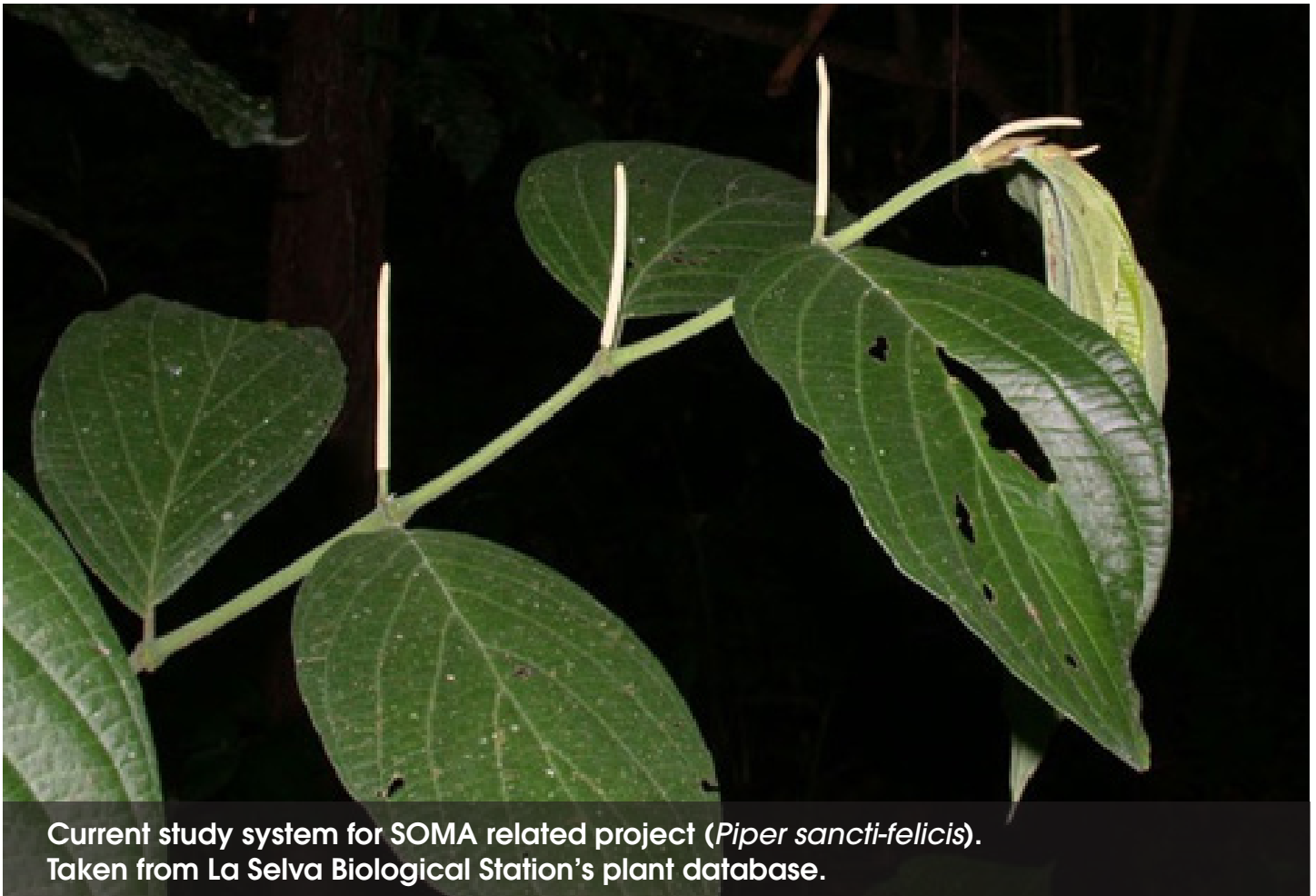
dophytes: 1) How does plant genetic variation of a focal plant species influence fungal endophyte communities? 2) How does plant chemical diversity affect fungal endophyte communities? 3) How does plant diversity (in a manipulated, experimental context) influence fungal endophyte communities?

Research directions

My future work will investigate factors that shape fungal endophytes in the tropical plant genus *Piper*, including: 1) plant

genetics, 2) host plant chemistry and 3) insects as endophyte vectors and the influence of endophytes on insect immunity.

I am also interested in exploring the extent to which endophytes contribute to plant chemistry. In particular, this question is useful for guiding the discovery of new pharmaceuticals but also because we still do not know the extent to which fungal endophytes contribute to plant chemistry in non-grass plant species and how herbivores respond.



Current study system for SOMA related project (*Piper sancti-felicii*). Taken from La Selva Biological Station's plant database.

Recipe of the Month: Chicken Mushroom Lasagna

From LifestyleFood & Wine
by Deekshita Baruah

Chicken and mushrooms are a classic combination. Not only are they good to eat but also a great source of protein. You will find a number of recipes for this all-time favourite meal but not as healthy as this one.

Dinesh Prasad Bhatt, executive chef, Eatonomist.com has created a recipe that mostly uses fresh ingredients and is big on carrying the Italian legacy forward but with a twist. The

tangy tomato-rich red sauce will make you drool. Try it out this weekend or any other day, really. You will love it.

INGREDIENTS (Serves two)

150 g- Chicken
½ tbsp- Salt
¼ tbsp- Crush black Pepper
2 mince- Garlic cloves
½ cup- Olive Oil
½ tbsp- Fresh Thyme
1 bowl- Button Mushroom
½ bowl- Chopped Onion
3 cups- Low fat milk
1 ½ tsp- Basil
1 cup- Basil tomato sauce

DIRECTIONS

* Slice the chicken and marinate it with salt, pepper, olive oil and fresh thyme. Keep it in the refrigerator for 4 hours.

* Wash the button mushroom properly and cut it into slices.

* Saute chopped onion, garlic, fresh thyme in olive oil and add the mushroom to it along with some salt and crushed black pepper.

* Add some low fat milk and stir it till the milk evaporates. Keep aside once it is done.

* Now, take out the sliced chicken and seal it in the non stick pan.

* Make a layer with mushroom and add some basil tomato sauce.

* Garnish it with some fresh basil, olives and ricotta cheese and bake in the oven for 10 mins.



Book Review:

This one speaks for itself...

MUSHROOMS of the Redwood Coast

A Comprehensive Guide
to the Fungi of Coastal Northern California



- Far North Coast
- North Coast
- San Francisco Bay Area and East Bay Hills
- Santa Cruz and Peninsula Mountains
- Monterey County and southernmost Redwoods

modern range consists of a narrow band between extreme southern Monterey County and the southwestern corner of Oregon. Often referred to as the Fog Belt because of its frequently dense maritime moisture layer, this zone experiences a Mediterranean weather regime: warm summers with little precipitation and wet, cool winters with rare prolonged periods of freezing temperatures.

In many parts of their range, Coast Redwoods are dependent on fog to tide them over through the dry summers, and the architecture of their foliage is such that they can effectively harvest this moisture out of the air to meet their prodigious water requirements. The range of the Coast Redwood extends far inland in the wet, mountainous areas of the southern Cascade Range in Del Norte County, and even farther (albeit more scattered) in the drier eastern reaches of the San Francisco Bay. Ronald Lanner's excellent *Conifers of California* identifies Little Redwood Creek (a branch of the Chetco River in Oregon) as the absolute northernmost outpost of the Coast Redwood, while the southernmost trees are found just north of Soda Springs Creek in the Santa Lucia Mountains of Monterey County. The restricted geographic range of the Coast Redwood, as well as their dependence on a

heavy summer fog regime, has led the International Union for Conservation of Nature to list them as a vulnerable species.

Many other habitat types are found on the Redwood Coast, including chaparral, Douglas-fir forest, pine forest, oak woodland, mixed evergreen forest, coastal grassland, and riparian woods. In addition to these native habitats, parks, gardens, and horticultural areas are also important habitat for mushrooms. While some of the fungi included in this book occur primarily in Sequoia forests, most are found in other natural habitats on the Redwood Coast, and some grow only in human-modified habitats (parks, lawns, gardens, and other landscaped areas). Since no one is really sure how many thousands of species occur in this area, this book is necessarily incomplete. Our focus is centered on the gilled mushrooms, boletes, and chanterelle-like species, particularly those that are common, conspicuous, and distinctive. But we've also made a great effort to find and photograph uncommon and inconspicuous fungi, some of which require more experience and closer inspection to identify correctly. There are many species we decided not to include due to some combination of being inconspicuous, poorly understood, or rare.

Trees of the Redwood Coast

A big step toward understanding mushrooms is learning to recognize their habitats. As discussed in the section on Ecology of Fungi, many mushrooms are mycorrhizal and only associate with a one or two tree species, while others have a broader (but still limited) range of hosts. Even among those fungi that don't form mycorrhizal associations, some are quite picky: for example, *Crinipellis piceae* only occurs on Sitka Spruce needles, and *Leptaria camea* is very rarely found outside redwood forest.

Our range covers four major bioregions: the conifer-dominated zone on the Far North Coast (distinguished by the presence of Sitka Spruce, Grand Fir, and Western Hemlock); the vast mixed-evergreen zone (dominated by Douglas-fir, Tanoak, and Madrone forests inland, often flanked by pine forest on the coast); the Coast Live Oak woodlands that occur from southern Mendocino County southward into Mexico; and the majestic Coast Redwood forest, whose range circumscribes the scope of our book (see chapter on Our Area and the associated map on p. 000). Some of the most important trees and their identifying features are illustrated and described briefly below. Other common trees that we don't profile in detail include cottonwood, willow, and alder—each of these has a small but distinctive suite of associated fungi. On the other hand, Bigleaf Maple (*Acer macrophyllum*) and California Buckeye (*Aesculus californica*) sometimes form inviting groves but almost never produce much in the way of mushroom fruitings.

Ectomycorrhizal Northern Conifers



Sitka Spruce (*Picea sitchensis*): Large conifer with overlapping bark scales, swooping branches, and crowns with upright tips. Can be recognized by the sharp, three-sided needles (roll them between your fingers) with a silvery green top and green underside, and hanging cones. Occurs on north-facing slopes in scattered river valleys on the Central Coast of Mendocino County, becoming more widespread in the northern part of the Lost Coast and then common farther north along the coast.



Western Hemlock (*Tsuga heterophylla*): Widespread tree of the Far North Coast, but some found south to Salt Point on the Sonoma coast. Distinctly drooping growing tip, unlike other conifers on the coast. Needles are short, flat, and of differing lengths on the same twig; each has two whitish lines on the paler underside. Grayish bark with moderately shallow furrows. Small cones with relatively large scales.



Grand Fir (*Abies grandis*): Shows a classic Christmas-tree shape, with a pointed growing tip and whorled branches that splay out nearly flat. Smooth bark when young, often covered with sap blisters, then becoming furrowed (similar to Western Hemlock). Needles are also flat, but longer than those of hemlock (up to 3 cm). Upper sides of needles are bright green, undersides are paler and with two whitish lines. Needles are usually splayed out flat on lower branches. Large cones borne upright on the upper branches, but rarely seen whole on the ground, as they tend to break up at maturity.

Book Review...continued



Brown-spored Decomposers—Spores dull brown to rusty brown. Fruitbodies tiny to huge, dull to colorful, and with or without partial veil tissue. If your mushroom has brown or rusty spores and is growing on wood, it should be in this section. Otherwise, start by reading the following short descriptions for *Inocybe*, *Hebeloma*, *Phaeocollybia*, and *Cortinarius* in this pictorial key. If none of those seem promising, your mushroom should be in this section. See p. XXX.



Mycorrhizal Brown-spored Mushrooms (*Inocybe*)—Spores dull brown. Small to medium sized, with dry, silky, or scaly to shaggy, often conical caps. Stipes cylindrical, often powdery looking, many with small bulb at base. Odor frequently of green corn or spermiac; others sweet, fishy, or indistinct. Partial veil present and silky to cobwebby, but usually sparse and often visible only on young fruitbodies. Not growing on wood. See p. XXX.



Mycorrhizal Brown-spored Mushroom (*Hebeloma*)—Spores dull brown. Small to fairly large mushrooms with relatively smooth, often viscid caps and attached gills (often beaded with droplets when young). Odors often pungent, radishlike or chocolatey-musty. Stipes slender or more often club shaped. Not growing on wood. See p. XXX.



Mycorrhizal Brown-spored Mushrooms (*Phaeocollybia*)—Spores rusty to ochre-brown. Small to large mushrooms with distinctive long, tapering, rooting, and cartilaginous stipes (many filled with white pith). Caps often conical or bell shaped, often viscid. Fruitbodies dull to very colorful. Veil absent. Found only in forest settings; uncommon. See p. XXX.



Cortinarius—Spores rusty (bright orange-brown). A large and varied group of species united by the presence of a cortina—a silky or cobwebby partial veil (membranous in one species). Fruitbodies range from very small to very large. Colors very dull to very colorful. Caps conical to rounded, dry to viscid. Beware that the cortina can be inconspicuous or disappear in age. Found in forest habitats, not growing on wood. See p. XXX.



Large *Entoloma*—Spores pinkish tan to salmon. Fruitbodies medium sized to large and stout, caps dry to viscid, gills attached or decurrent, and lacking any veil tissue. Colors white to gray or brown, but one species is sky blue to midnight blue. Veil absent. Found in forest settings, not growing on wood. See p. XXX.



Small *Entoloma*—Spores pinkish tan to salmon. Fruitbodies small to medium sized, with attached gills and lacking any veil tissue. Caps dry, smooth, finely scaly, or silky. Colors ranging from dull brown to rosy pink, yellowish tan, blue-gray to iridescent purple, or blue to blackish blue. Veil absent. Found in forest settings, very rarely on wood. See p. XXX.



Free Gilled Pink-spored *Pluteus* and Allies—Spores pinkish to salmon buff. Gills distinctly free, usually growing on wood. One common species and a few rare species in our area have universal veil sheathing the base of the stipe (volva tissue) and grow on organic matter and lignin-rich debris. One small, extremely rare species with a volva grows on decaying mushrooms. See p. XXX



Russula—Spores white to cream, yellowish, or ochre. Often stout, squat mushrooms with convex to uplifted caps. Texture usually chalky, brittle, or crumbly and lacking any "milk" (latex) when broken. Some can have very hard, firm flesh, but will still break like chalk rather than splitting into fibers like most other gilled mushrooms. Colors dull to bright. Veil absent. Found in forest habitats. See p. XXX.



Lactarius—Spores white to cream to light yellowish. Often stout and squat with uplifted caps that are centrally depressed. Texture crumbly, brittle, or chalky, usually producing "milk" (latex) when broken or cut. This feature can be hard to see, so check fresh fruitbodies and look closely. The milk is often distinctively colored and sometimes changes color when exposed to air. Veil absent. Not growing on wood. See p. XXX.



Waxy Caps I—Spores white. Gills attached, relatively thick and slightly greasy or waxy feeling, and often well spaced. Caps dry to very slimy, dull to bright. Stipes slender to robust, but always solid. Partial veil present or absent. Found in forest settings. See p. XXX. This group can be difficult to distinguish from other white-spored mushrooms (also check Waxy Caps II and the large species in White-Spored Multitude).



Waxy Caps II—Spores white. Gills attached, relatively thick, often waxy feeling and well spaced. Caps dry to very slimy, mostly brightly colored (red, orange, yellow, pink, green, or blue), a few duller. Stipes usually slender and hollow (two large, red-capped species have solid stipes). Partial veil always absent. Found in forest settings, commonly under redwood and cypress. See p. XXX.



Pholiota flammans

(Batsch) P. Kumm.

FLAMING PHOLIOTA

CAP: 3–7 (10) cm across, convex with an incurved margin at first, becoming broadly convex to nearly plane, occasionally with an umbo. Brilliant golden yellow when young, developing orange tones later. Bright yellow when young, developing orange tones later. Bright yellow at first, becoming rusty yellow as spores mature. **STEM:** 3–8 (10) cm long, 0.4–1 cm thick, equal, or enlarged downward, often with a pointed base. Bright yellow, discolored only slightly in age. **GILLS:** Broadly attached, at times with a shallow notch and a decurrent tooth, close, narrow. Bright yellow at first, becoming rusty yellow as spores mature. **SPORE DEPOSIT:** Brown. **MICROSCOPY:** Spores 4–5 x 2.5–3 µm, oblong to elliptical, smooth, thick walled, ochre in KOH. **PLEUROCYSTIDS:** abundant, club shaped or pointed. **CHALOCYSTIDS:** similar or small and cylindrical.

ECOLOGY: Solitary, scattered, or in small clusters on decaying logs and stumps. Often on conifers, occasionally on alder as well. Uncommon in California, mostly restricted to the northern part of our range, not known south of Mendocino County. Often fruiting early in the season, soon after first soaking rains in fall, with scattered fruitings into winter.

EDIBILITY: Reportedly nontoxic, not recommended.

COMMENTS: The striking golden yellow colors, scaly cap and stipe, and growth on wood make this beautiful *Pholiota* easy to recognize. Most of the look-alike species are rare on the coast, but common in the mountains. These include *P. aurivella*, with a yellow to golden orange, viscid cap with tufted to appressed scales and large spores [7–9.5 (11) x 4.5–6 µm]. *P. limonella*, which is nearly identical to the latter but with smaller spores [6–7.5 x 4–5 µm], and *P. squarrosa*, which has a viscid, beige to orange cap covered with upright or curved orangish scales. *P. squarrosa* is also very similar, but has a dry, beige to brown, scaly cap and stipe.



Pholiota decorata

(Murrill) A. H. Sm. & Hesler

CAP: 2–8 cm across, convex at first, becoming convex to plane, occasionally with a low, broad umbo. Creamy beige with a brown center or extensively pinkish brown, radially streaked with darker fibrils. Surface viscid to dry, appressed-fibrillose at first, soon nearly smooth. **GILLS:** Broadly attached to slightly notched, close to subdistant, broad, partial gills numerous. Creamy beige to yellowish tan at first, darkening to yellowish gray or pallid clay colored. **STEM:** 3–9 cm long, 0.3–1 cm thick, equal. Whitish as first, soon with brownish streaks and stains, darkening from base up. Surface dry, covered with scruffy white tufts and hairs, flocculent when young, appressed in age. Base often with fuzzy mycelium and rhizomorphs. **PARTIAL VEIL:** A thin, flocculent membrane, leaving tissue on cap margin and stipe. **FLESH:** Thin, fibrous in stipe, whitish to brown. **ODOR:** Indistinct. **TASTE:** Indistinct. **KOH:** Orange-brown on all parts. **SPORE DEPOSIT:** Dark brown. **MICROSCOPY:** Spores 5.5–8.5 x 3.5–4.5 µm, ovoid to elliptical in face view, or flattened on one side in side view, smooth, thick walled, rusty brown in KOH.

ECOLOGY: Solitary or scattered on small logs, branches, and surrounding duff of both conifers and hardwoods. Common in the northern part of our range, uncommon in the San Francisco Bay Area, not yet recorded south of San Francisco. Fruiting from late fall through winter.

EDIBILITY: Unknown.

COMMENTS: This is one of the more easily identified *Pholiota* in our area, the combination of a creamy beige cap with a brown, scaly center, white stipe with cottony scales, and growth on smallish dead branches is distinctive. *P. terrestris* has a scallier cap and darker scales on the stipe, and grows in clumps and clusters on the ground or in wood chips.



Pholiota spumosa group SLENDER PHOLIOTA

CAP: 2–6 cm across, conical to convex with an incurved margin at first, becoming broadly convex to plane, often with an umbo. Color variable, generally yellow-brown with an ochraceous disc and an overall olive cast when young, becoming more ochraceous brown and dingy in age. Occasionally lacking ochraceous brown tones or more olive-yellow in color. Surface viscid to tacky, fibrillose-streaked to smooth. **GILLS:** Broadly attached, or with a slight notch and a decurrent tooth, close to subdistant, narrow, partial gills numerous. Yellowish green at first, soon beige, darkening to brown as spores mature. **STEM:** 3–6 (10) cm long, 0.3–0.5 (0.7) cm thick, equal, or enlarged slightly toward base. Pale yellow to pale greenish yellow as first, developing stains and streaks and darkening to dingy orangish brown from base up in age. Surface dry, finely fibrous to smooth below veil, pruinose above. **PARTIAL VEIL:** Thin, cobwebby, adhering to cap margin when young, leaving sparse silky fibrils on stipe. **FLESH:** Thin, firm, stipe fibrous, watery greenish in cap. Stipe becoming hollow yellowish green at first, darkening in age. **ODOR:** Indistinct. **TASTE:** Indistinct. **KOH:** Pale orange-brown. **SPORE DEPOSIT:** Brown. **MICROSCOPY:** Spores 5.5–8 x 4–4.5 (5.5) µm, ovoid, with a small germ pore, smooth, moderately thick walled, amyloid, golden brown in KOH.

ECOLOGY: Scattered in troops or small clusters, often on wood chips or on or around well-decayed logs and stumps of both conifers and hardwoods. Common and widespread. Fruiting in late fall and winter.

EDIBILITY: Unknown.

COMMENTS: The viscid, yellow-brown cap with an ochraceous disc, olive tones, light yellowish gills with a greenish cast when young, cobwebby partial veil, and growth on rotting wood (most often wood chips) are helpful identifying features of this *Pholiota*. *P. spumosa* is a European species that probably doesn't occur in California. There are a number of species in this complex described from North America, but modern taxonomic work (that is, sequencing type collections) is needed to help sort out the mess. Two West Coast species in this complex are *P. subfida* and *P. vialis*, one of which may be the correct name for our western *P. "spumosa"*. *P. malicola* var. *macropoda* often grows in clusters, has a smooth yellow-ocher cap, and a green-corn odor. *P. alnicola* is a similar but slightly smaller species, often grows in clusters on dead alder stumps and logs and has a smooth yellow cap when young that darkens slightly in age, pallid to straw yellow gills, and a fragrant odor. *Hyphaloma fasciculare* has a yellowish cap (occasionally olive or ochre toned), yellowish green gills that turn gray, and purplish black spores. *H. capnoides* has pallid gills that turn gray and a smoky gray spore deposit. Similar *Gymnopilus* species have rusty orange spores and brighter orange colors, and most have a bitter taste.

Book Review...



VOLUNTEER BOARD

Open Positions

SOMA Photographer

SOMA is in need of a volunteer photographer who can document the various activities of the club, and help liven up our monthly SOMA News and website. The individual should be available to attend most monthly meetings in Santa Rosa, most monthly forays at Salt Point State Park, SOMA Camp (three days in January every year) and the occasional dinner here or there. No professional experience is needed, given the state of the art in cameras these days, but ability to transfer photo files at the needed resolution is a primary task. The photographer may also be able to sell his or her photos/services via our media and meeting venues at no cost. Contact Chaz Thurston at chazwt@gmail.com or 707-799-9766.

SOMA Website Manager

SOMA's new website is being completed by an outside builder and the delivery date is not far away. We need someone with a bit of experience managing a website, including very basic HTML. Hopefully, the new site will be far more user friendly than the old one. Responsibilities would be to post new announcements, notices,

photos, stories, etc., and coordinate with the Board for any membership tasks.

Please contact Jim Wheeler at SOMApresident@SOMAmushrooms.org.

SOMA News Editor

We are seeking a new editor of the monthly newsletter to assist in all phases of material gathering and editing, layout and distribution. The position can be fulfilled from your home office, using your computer and phone, and our software, and would require approximately one day per month. The primary software is Word for documents, and In Design for layout. We currently use Excel and Mail Chimp for distribution, but are open to other methods/software. The website is currently being rebuilt, and hopefully will incorporate more automation for the newsletter production and distribution in the near future.

The position would also be to contribute new ideas in coverage and/or channel distribution that will help spread our readership and drive new members for SOMA, wherever they may be located.

If you are interested, please send an email to me, Chaz Thurston, at chazwt@gmail.com stating your situation and any skills that would ease your learning curve.

gmail.com stating your situation and any skills that would ease your learning curve.

SOMA Director of New Membership

We also are seeking candidates for a new position, director of new membership, to help the club attract more, younger, enthusiastic members into the fold. The ideal candidate may be younger than the average board member, and should be familiar with multiple information channels that the club can utilize to offer new members all that SOMA does and can do. While the club now has a Facebook page, various affiliate Yahoo groups, we are seeking more and better ways to communicate with potential and new members. The candidate would help draft a campaign for new membership as well as new program elements for new members. The position likely will require one day per month in addition to attendance of monthly board meetings.

If you are interested, please email Jim Wheeler at SOMApresident@SOMAmushrooms.org.



Scholarships

Rachel Zierdt, Scholarship Chair

SOMA is very pleased to announce five winners of our 2016 graduate level scholarships.

This year we had five very strong candidates and decided to award them all \$1500 to help further their studies. The winners are:

-- **Briana Boaz**, from UC Berkeley is studying the lodgepole pine-associated ectomycorrhizal fungal communities.

-- **Heather Slinn**, PhD. Candidate from the University of Nevada, Reno. Her study is on how plant traits structure fungal endophyte communities using the tropical plant genus *Piper*.

-- **Paige Mandelare** from Oregon State University is exploring endophytic fungi and soil

bacteria and their application in human health.

-- **Dan Thomas** is doing his research work at University of Oregon where he is researching microscopic fungi that live in leaves.

-- **Daboa Lu** from Oregon State University. He is pursuing his master's degree currently. His thesis project is an analysis of genome organization in *Rhizopogon vesiculosus*.

Each of our winners will receive \$750 outright and will be presented with the additional \$750 when they appear at a Thursday night SOMA meeting to present their projects.

Thank you again to the SOMA camp attendees who make these awards possible.

It was your contributions via the raffle, silent auction, and camping fees that allow us to present so many awards this year.

Many of the winners have told us they will use the funds for genetic testing of samples or financial assistance to travel to areas where they will be studying. Our goal at SOMA is to further the science of fungi. By giving these prizes, we are helping to fulfill our mission statement.

In conclusion, I wish to thank my committee : Lee McCarthy-Smith, Nicolas Janson, Kiki Seed, and Jim Wheeler. They took many hours to read and score all the applications. From the synopsis above you can tell that the projects were very detailed and complicated. I appreciate their time and dedication to the process.



This Coffee Maker Design Doubles As A ... Mushroom Farm?

By Julie R. Thomson
Senior Editor, Taste, The Huffington Post

As part of HuffPost's "Reclaim" project, HuffPost Taste will focus the entire month of July on simple ways you can reduce food waste in your own home.

As much as we love coffee, we can't deny how wasteful it feels to see the used beans fill up our garbage and compost bins. If you're lucky enough to have a yard, you can avoid this by adding the grounds to your garden. If you aren't that lucky, your option is to wait patiently for the release of the most sustainable coffee maker yet to be designed.

Let us introduce you to the HIFA, designed by Adrian Perez and Mauricio Carvajal. This coffee maker concept not only brews coffee with a French press-type system, but it also doubles as a mushroom farm.

It's a simple enough design. The coffee maker sits on top, the mushroom farm underneath. Once the grounds have been brewed, they can be easily transferred to a lower chamber, topped with mycelium (think of them as mushroom roots) and sprayed with water.

Then, boom, mushrooms. Oyster mushrooms actually grow very easily in coffee grounds because they have about the same PH levels as most soil.

And no, the mushrooms are not coffee flavored.

There's no word as to when or if this maker will become available commercially. But while you wait, you could always repurpose used coffee beans from a French press and start your own mushroom farm.



The bear's tooth mushroom is just one of many edible mushrooms in Alberta. Credit: Northern Bushcraft



Mushroom mania: it's fungi season in Alberta 'It's great to be empowered on how to pick your own food' Credit: Alberta Interscience Association

Canada Report

From the red and rotund to white and ethereal, after a damp Alberta summer mushrooms are flourishing and foragers are reaping the harvest.

By Wallis Snowdon

After a wet summer, mushroom pickers across Alberta are enjoying a bumper crop. From the red and rotund to white and ethereal, after a damp Alberta summer mushrooms are flourishing and foragers are reaping the harvest.

In Edmonton's urban jungle, there is a bounty of healthy and delicious fungi ripe for the picking.

"For some reason, people feel safer getting their food from big box stores from god knows where," said Eric Whitehead, owner of Untamed Feast, a wild-food

company based in St. Albert. "But nature effortlessly provides the best-tasting and most nutritious foods, and they're just out there."

Red tip mushroom season has begun in AB. Did you know this is Alberta's official provincial wild mushroom? #aspenbolete

Among the many mushrooms in season now, like the spongy summer boletes and the striking bear's tooth, the red top boletus is enjoying a bumper crop across the province.

These meaty little mushrooms are among the

most common fungi to be found in Edmonton this time of year, and thrive best in 30- to 60-year-old pine clear cuts.

"Red tops grow all over, in the aspen trees," Whitehead said during an interview with CBC Edmonton's Radio Active.

"Mushrooms are opportunistic. They like to make associations and they do that best in areas that are kind of fresh and prime.

"People commonly think the old growth is where all the mushrooms are going to be. But it's actually the

Canada Report...continued

new growth where there is more opportunity for colonization."

Though coveted by fungi foragers, red tops are an acquired taste, White-

head said for inexperienced mushroom pickers.

However, Whitehead said novice foragers should always exercise caution before consuming wild

Whitehead said the Alberta Mycological Society is the best resource. The non-profit group maintains a detailed mushroom database on its website and hosts regular outings where people can get hands-on experience in finding and identifying edible mushrooms.

Whitehead said an increasing number of Edmontonians are becoming fascinated by fungi and getting their hands dirty in search for these tasty morsels.

"When we tried selling wild mushrooms 10, 15 years ago it was a pretty new thing. And now everybody and their dog goes out and picks, and it's great. It's great to be empowered on how to pick your own food.

"It doesn't have to make you into some sort of hippie tree-hugger, but you get an overwhelming appreciation for what the world gives us."

head said, better enjoyed after dehydration or a long simmer in the frying pan.

"I call them slimy and insipid little creatures," he said. "I don't like them fresh.

"But once it's dry, it has this incredible caramelly, mushroomy sweet-like fragrance. And at that point it becomes one of my favourite mushrooms."

Amanita muscaria and Porcini are good friends....always...hint hint. #eatwild

Red tops are not only plentiful, but the squat toadstools are also easily identified and distinguished from other mushrooms sprouting on the forest floor, making them a good starting point

mushrooms. Poisonous and edible mushrooms can be similar in appearance, and wild mushrooms of uncertain identity should never be eaten.

"There is no need to pick it up and spend two hours in a book trying to get a quasi-identification you're not even sure of. Pick what you know. "If you have to look it up in a book, you're not ready to eat it."

"You don't go to the grocery store and look up a cucumber to make sure it's a cucumber, you're 100 per cent sure it's a cucumber through familiarization."

For those interested in learning more about Alberta's edible mushrooms,



Wallis Snowdon is a digital journalist with CBC Edmonton. wallis.snowdon@cbc.ca



Speaker of the Month: Noah Siegel

“Mushrooms of the Redwood Coast”

Sept. 22th, 7:30 PM, at the Sonoma County Farm Bureau -- (See Map p. 22)

Northern California is known for its seemingly endless wet winters which make the mushrooms flourish and its majestic forest. Not only do we have the biggest trees we also have the largest known Chanterelle and Porcini!

Six years in the making, the newly published *Mushrooms of the Redwood Coast* is the definitive guide to mushrooms in the diverse ecological zones of this region.

Gain a better understanding about the mushrooms of northern California, hear some of the stories behind the book, and enjoy a selection of breathtaking photographs; from com-

mon edibles to rare and remarkable species.

Noah’s field mycology skills are extensive – he has spent over two decades seeking, photographing, identifying, and furthering his knowledge about all aspects of macrofungi. He has hunted for mushrooms throughout the United States and Canada, as well as on multiple expeditions to New Zealand and Australia.

He is one of the premier mushroom photographers in the nation, having won numerous awards from the North American Mycological Association (NAMA) photography contest. His technique and attention to

detail are unrivaled, arising from a philosophy of maximizing utility for identification purposes while maintaining a high degree of aesthetic appeal.

His photographs have appeared on the covers and have been featured in articles of multiple issues of *FUNGI Magazine* and *Mushroom the Journal*, the primary mushroom enthusiast magazines in the United States, numerous mushroom books, as well as many club publications.

Noah travels and lectures extensively across America, following the mushrooms from coast to coast, and everywhere in between.

CALENDAR, NOTICES & EVENTS

SOMA Calendar for September 2017

SOMA Camp; Sept. 24. Salt Point State Park Foray; 10 AM

Soma Camp Auction/Raffle Donations Sought

SOMA is requesting donations for the coming mushroom camp January 17, for use in the silent auction and raffle. Proceeds support the many scholarships SOMA presents to grade school through graduate research students. Contact Rachel Zierdt, SOMA Vice President at: SOMAvicepresident@SOMAmushrooms.org.

Amazon Smile for SOMA Credits

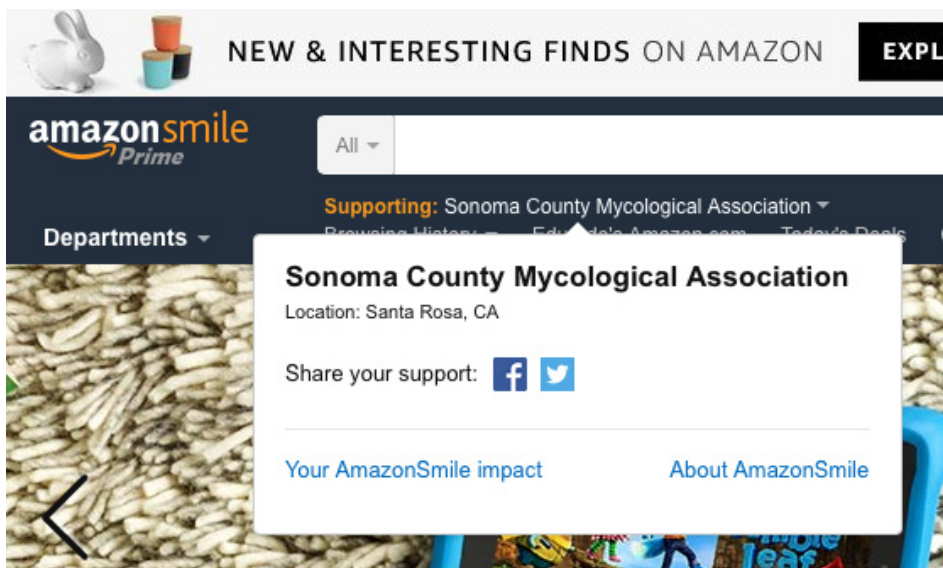
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Bookmark this link: <http://smile.amazon.com/68/0486141>. Every time you shop at AmazonSmile, Amazon.com donates 0.5% of the purchase price to Sonoma County Mycological Association. Support us by shopping at AmazonSmile!

Contribute to SOMA News!

The monthly SOMA News wants you to contribute to our pages with news about your life with mushrooms in Sonoma County and beyond. We need art images, photos, short or long stories, academic or other musings on mycology, recipes, notices, events and more. The deadline for each issue is the weekend before the first of the month.

You needn't be a professional artist, photographer or writer to join in; just take an interest in sharing what you know and find with others! Email me at chazwt@gmail.com or call 707-799-9766 with inquiries. Thanks, Chaz Thurston



DIRECTIONS & MAP

Your membership in the Sonoma County Mycological Association, or SOMA, is a great way to meet and interact with other mushroom enthusiasts. Head to <http://somamushrooms.org/membership> and sign up; the season is just beginning!

SOMA Monthly Meeting Directions & Map

SOMA usually meets on the third Thursday of the month throughout the year (September through May), at the Sonoma County Farm Bureau , 970 Piner Road, Santa Rosa, California, 94931. Fungi are displayed at 7 PM, and speakers begin around 7:30 PM. Bring in your baffling fungi to be identified!

Directions to the Sonoma County Farm Bureau

From the south:

- Go north on Hwy 101
- Pass the Steel Lane exit then take the Bicentennial Way exit
- Go over Hwy 101 (heading west) and then right on Range Ave
- Turn left on Piner Rd. and go about 1/4 mile
- Turn left into Farm Bureau parking lot at 970 Piner Road

From the north:

- Go south on Hwy 101
- Take the first Santa Rosa exit for Hopper Ave/ Mendocino Ave
- Stay left on the frontage road (it becomes Cleveland Ave)
- Turn right on Piner Rd. and go about 1/4 mile
- Turn left into Farm Bureau parking lot at 970 Piner Rd.

