

Spores Illustrated

Summer 2013

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COMA'S FIRST FUNGUS FAIR TO TAKE PLACE ON SATURDAY AND SUNDAY, JUNE 29TH AND 30TH

PLACE: WARD POUND RIDGE RESERVATION

HOURS: 9AM - 9PM ON SATURDAY

9AM - 2PM ON SUNDAY

THIS EVENT IS OPEN TO THE PUBLIC

free parking for COMA members

HIGHLIGHTS WILL INCLUDE:

MUSHROOM WALKS

WILD EDIBLE AND INVASIVES WORKSHOPS

IDENTIFICATION WORKSHOPS

SHIITAKE CULTIVATION WORKSHOP

SPECIAL KIDS ACTIVITIES

CAMPING AVAILABLE

Mycology Experts:

Sandy Sheine

Gary Lincoff

DON'T MISS IT!

for more information see www.fungusfair.wordpress.com/
or contact Kathy Americo atfungusfair@gmail.com or 914-737-1021

MUSHROOM UNIVERSITY STUDENTS MAKE PRESENTATIONS



Zaac Chaves



Robert Gergulics

At the last session of this year's Mushroom U, four students had the opportunity to give a presentation of their own work on our subject, the *Boletaceae*. Zaac, above left, devised a unique key for the genus *Suillus*. Robert presented his method of identifying boletes from characteristics of the stipe only.

The following two articles are based on presentations given by Taro Ietaka and Tom Cascione.

Evaluating Bolete Rules-of-Thumb: Or Mushrooming for the Stressed-out Parent

By Taro Ietaka

“What is this mushroom?” I thought to myself. “Tan cap and stalk, annulus, growing out of wood, spores probably brown...wait a second, where's Kai???”

At a recent walk after the final Mushroom University class on boletes, Gary Lincoff, our lecturer, was kind enough to sympathize, saying that the years spent parenting a young child are slow for developing as a mushroomer. How true that is. Identification of mushrooms is hard enough if you have time to make detailed notes in the field, spore prints at home, and prepare slides for microscopic examination. Now imagine (or remember) how it is if you have 30 seconds maximum to spend with that mushroom before chasing down a four-year old with his own agenda.

So it is no wonder that a harried parent/mushroom-enthusiast is desperate for some rules-of-thumb. However, in the fungal realm these are dubious at best. “If you sautee mushrooms with a silver coin that turns black, the mushroom is poisonous.” Hopefully, we all know better than to trust dangerous sayings like that. Nevertheless, for my Mushroom U. homework assignment I decided to put a few rules-of-thumb on boletes to the test. Unlike with any genera I've read about, boletes seem to be a taxa for which generalizations about edibility can be given. David Arora and Michael Kuo, both offer rules in *Mushrooms Demystified* and *100 Edible Mushrooms* respectively, and a few other bolete sayings are floating around on the internet. I've listed the best of the 'rules' below along with my evaluations on 1) how effective they are at keeping one from getting sick and 2) not missing out on lots of good eating.

Words of caution: *Boletus huronensis*, one of the most dangerous boletes in our regions, is a *B. edulis* lookalike that might not be eliminated from your collection by any rule-of-thumb. As we learned in Mushroom U., cutting your porcinis (*B. edulis*) and watching for faint blue staining or applying ammonia to the cap and watching for a color change can separate *B. huronensis* from the non-reacting *B. edulis* complex.

The Bolete Rules-of-Thumb for the COMA region

1. Avoid those whose pores bruise blue...

- You will avoid these dangerous boletes: *B. huronensis* (Caution: Bruising may be faint or not at all), *B. inedulius*, *B. sensibilis*, *B. miniato-olivaceus*
- You will miss out on these edibles: *B. bicolor*, *B. campestris*, *B. chrysenteron*, *B. subcaerulescens*, *B. hortonii*, *B. pallidus*, *B. pulverulentus*, *B. speciosus*, *B. truncatus*, *Gyroporus cyanescens*, *B. pseudoboletinus*, *Boletellus chrysenteroides*.

AND those with red or orange pores...

- You will avoid: *B. satanas*, *B. subvelutipes*, *B. erythropus*, *B. luridiformis*, *B. luridus*, *B. rubroflammeus*
- You will miss out on: *B. frostii*

AND those that are bitter to the taste

- You will avoid *Tylopilus felleus*



Taro and Kai

2. Avoid orange-capped *Leccinum*s

Michael Kuo recommends this in *100 Edible Mushrooms* based on illnesses attributed to a yet identified culprit. Gary Lincoff also cautions that the dense stipes of *Leccinum*s cook slower than the caps and that insufficient cooking can cause sickness. You'll need to be able to recognize a *Leccinum* for this to work – invest a little time examining your field guide's photos of the 'scaber stipes'.

Finally, if your bolete doesn't match any of those "Avoids," do a final check to eliminate *Boletus huronensis* and *Tylopilus eximius* (which some people have a negative reaction to and which also slips past the rules.) After that, it should be safe to eat – of course, cook thoroughly and eat sparingly the first time trying a new mushroom.

I am pleased to say that I can run down that checklist in 29 seconds, and that my family will be eating well this summer.

A Bolete By Any Other Name

by Tom Cascione

Boletus edulis is the only mushroom for which we can commonly rattle off a handful of ethnic names. Every mushroom fan seems to know that the Porcini is the Cep, which is the Steinpiltz, and so forth. Coming from total ignorance, I wanted to know where this all started, and so, to begin my investigation, I turned to the culinary bible, *La Scienza In Cucina e L'arte di Mangiar Bene*, or *Science in the Kitchen and The Art of Eating Well*. This was the original Italian cookbook (still in publication and available in English) from 1891, in which author Pellegrino Artusi dispensed culinary tips and organized his list of traditional Italian dishes by season or holiday. In it he wrote, "Every year in September the price of mushrooms drop and I stock up on Porcini."

Having established that the "Porcini" moniker wasn't some 20th Century flash in the pan, I thought of its derivation. *Porcino* is Italian for a piglet, and some sources write that the name was coined because the chubby Boletes looked like little pigs hiding in the bushes. Keep in mind that people who think they know why some unknown soul started a nickname centuries earlier are usually just making a wild guess. I am realizing that scientific names (at least in the world of mycology) aren't much different.

Boletus is from the old Latin. Pliny the Elder, the original Roman writer and historian, was a big mushroom fan. In the first century A.D., he wrote the first Encyclopedia entitled *Naturalis Histori*, and especially since the word *edulis* simply means "good to eat," he should naturally have written of our beloved Bolete. Not so, which posed a question. The answer is found in the writings of another Roman author named Martial. He was the "Entertainment Today" correspondent of his time and provided the clearest surviving picture of everyday life in ancient Rome. In his correspondence (crabbing about a fancy dinner he attended) he wrote "*Sunti tibi boleti, fingos ego sumo suillos.*" This translates as, "You eat the choice boletes while I get mushrooms that the pigs eat."

Now my lightbulb went on. *Suillos* meant swine, and *Suillus* are a big part of the modern Bolete tribe. It turns out that the Romans called their absolute favorite, the Caesar fungus, *Amanita caesarea*, the *Bolet*. Our *Boletus edulis*, or Porcini, is the Pig Mushroom of old and not the *Bolet*.

While we are at it, it seems the the French name *Cep* is a derivation of the Latin *cippus* which is a stout wooden stake (or call it a broad stipe - which surely speaks of our *Boletus edulis*).

With the Romans out of the running, we can jump through the Dark Ages all the way to the first treatise devoted wholly to the topic of mushrooms, *Theatrum Fungorum oft het Tooneel der Campoelien* was written in Flemish in the year 1675. It contains very recognizable illustrations of the King of mushrooms but nowhere does it call them Boletes.

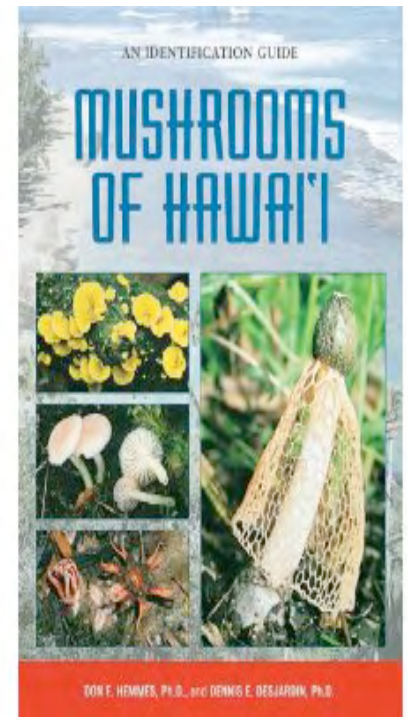
So how did we get in this mess? Carl Linnaeus, the father of taxonomy wrote his *Systema Naturae* in 1735 followed by a couple of *botannica* treatises. In them he classified Fungi, including what he now called *Boletus*. But don't blame old Carl, it seems that in 1719 a German named Johannes Dilleni wrote the *Catalogus Plantarum*. Somewhere in the process Johannes mixed up his Amanitas with his Boletes (never a wise idea), and he assigned the genus *Boletus* to the Porcini and its clan. The species name, *edulis*, turned up in texts later in the 18th Century. Linnaeus, being Swedish, had, we assume, a grudging respect for German precision and he adopted the earlier mis-naming on faith.

That's how the swine mushrooms got named *Boletus edulis*.

Mushroom Hunting in Hawaii, December 2012

by Robert Gergulics and Karen Monger

Since we have been studying mushrooms and exploring amateur mycology for a few years, it follows that we would like to hunt mushrooms while on vacation. We usually head out to a warm, tropical location during the middle of a New England winter, so we did a little research into the fungi of our destination, the Big Island of Hawaii. A good deal of the fungi on Hawaii are alien, introduced with vegetation and soil from other places; therefore, many of the mushrooms are familiar to us. Only an estimated 17% of fungi on Hawaii are considered native Hawaiian species. Fungi can be found almost all year in the subtropical environments, but the more abundant season is from July through January. Fallen palm leaves and casuarina needles, along with dead wood, coconut husks, lawns, and compost piles of mulch are all good places to look for fruiting mushrooms. We purchased [*Mushrooms of Hawaii*](#) by Don Hemmes and Dennis Desjardin to help us identify the mushrooms we hoped to find.



Upon our arrival at the Big Island in December, we were a bit worried to hear they were experiencing a significant drought. I contacted [Don Hemmes](#), the author of the mushroom guide to ask him for some advice about where to possibly find some fungi. He graciously offered to take us to MacKenzie Park in the Puna district, along the southeastern coast, to do a quick foray. Although he does not teach biology full time at the University of Hawaii, Hilo any longer, he still visits many sites and records the fungi present on a monthly basis. Don still participates in and contributes to the study of Hawaiian fungi on the Fungi of the Hawaiian Islands [website](#). We braved winding one-lane roads, rain squalls, and lava tubes to take a walk and find some mushrooms, including the *Geastrum litchiforme*, the lychee earthstar, and a poisonous amanita, *Amanita marmorata*.



Coprinus disseminatus

We also looked for fungi on our own on every hike we took into a forest. We visited the Kipuka Puauulu Bird Park near the Volcano National Park, and found some very large *Scizophyllum commune*, along with many slow growing conks. In the Waipio Valley, we found a log covered in *Coprinus disseminatus* and *Earliella scabrosa* shelves. Further up the coast in the Polulu Valley I came across rather large oysters, *Pleurotus* species growing from a fallen log on the trailside. At the base of many of the casuarina trees we found the casuarina conk, *Phellinus kawakamii*, rotting the ironwood trees.



Gymnopus luxurians

While we may have wished our vacation would never end, we did manage to meet a fellow mycologist and hike in many of the Big Island of Hawaii's forests looking for mushrooms. It would seem that myco-tourism is part of our future, since we are enjoying the fungi that we encounter on our travels.



Amanita marmorata



Geastrum litchiforme



Don Hemmes, Robert, Karen, and Gillian with her coconut

Reporting from the West Coast on “Mushroom Common Scents”

By Stephanie Scavelli

I arrived in California on Wednesday, February 20th, just in time to see Walt Sturgeon present for the Fungus Federation of Santa Cruz. Walt was introduced as a member of the Ohio Mycological Society and was not someone to miss. Just last year the book *Waxcap Mushrooms of Eastern North America* was published as a collaboration between Walt Sturgeon, Alan and Arleen Bessette, and William C. Roody.

After traveling 3,000 miles it was Adam, Minister of Forays and Walks for the Fungus Federation, whom I profusely thanked for generously offering a ride across town to make my attendance possible. Even though I was surrounded entirely by new faces, except for my good friend Gracie whom I had traveled so far to visit in California, and Adam, my new acquaintance, I surprisingly felt a familiarity with these perfect strangers who were discussing all matters of mushroom importance. Rows of chairs were set out and a projector and white screen set up. Everyone found a seat after fussing over a repugnant specimen of the Mock Oyster (*Phyllotopsis nidulans*) and wrapping up friendly conversations around the food table. To start the meeting it was announced in all seriousness that they were waiting for the rains to

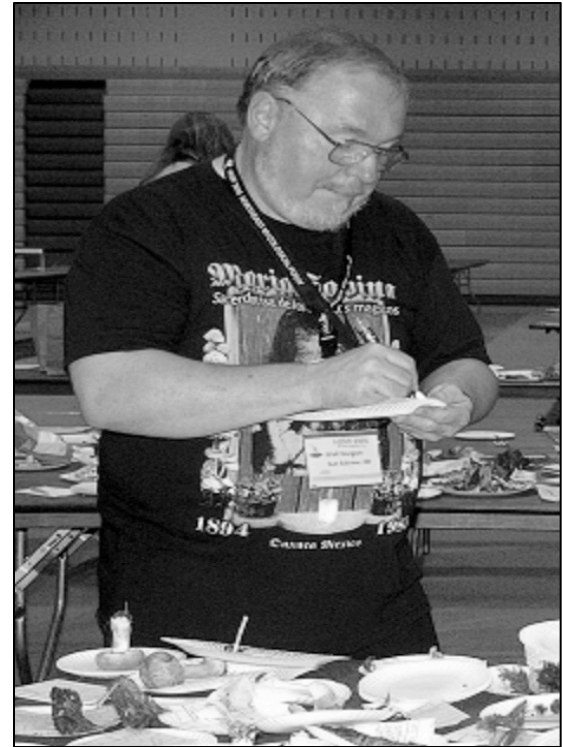
return to resume their scheduled forays. “Prospects seem hopeful” one man bellowed. Their plea for rain was valid, although it seemed trivial in comparison to having to wait for the snow to melt and ground to thaw as we were patiently doing in the Northeast.

Adam announced that Hedgehog Mushrooms and Yellow Foot Chanterelles were fruiting and asked, “Has anyone seen any *Craterellus*?” referring to the choice edible Black Trumpet. A moment of unsure silence unfolded. Folks on the west coast are quite hesitant to give away their favorite mushroom spots, so Adam reluctantly followed with, “You don’t have to tell me where,” and a shot of hands went up and laughter filled the room.

Next, Walt gave a well-photographed presentation on the peculiar odors of mushrooms in a captivating lecture called, “Just for the Smell of it: Mushroom Common Scents.” He explained that a mushroom’s scent is not a reliable indicator of edibility and not every mushroom has a scent. “Scratch the skin. Sniff the gills. Really get your nose in there,” Walt instructed. Odor changes as the mushroom ages, and like spore print and gill attachment, odor can be a distinguishing feature for identification.

Some mushrooms make good use of their stench, like the Stink Horn mushrooms. The putrid fragrance of *Mutinus elegans* and *Phallus ravanellii* attracts flies and other insects because these mushrooms rely on these critters to disperse their spores. The underground truffle, *Tuber canaliculatum*, has an odor that repels humans but entices foraging rodents to dig up the truffles, exposing its spores. Engaging our olfactory senses to detect mushroom scents can be a powerful tool for discerning between look-alikes. For example, *Pholiota squarrosa* smells like garlic, while the sticky capped *Pholiota squarrosoides* smells like cornflakes. *Boletus sensibilis*, the inedible look-alike of the common edible *Boletus bicolor*, smells like curry. However, odor is never a good way to determine edibility. *Lactarius volemus* smells fishy and *L. mammosus* smells like coconut. Both are edible. Despite the maple-pecan fragrance of *L. aquifluus* similar to the west coast Candy Caps mushrooms (*L. rubidus* and *L. rufulus*), *L. aquifluus* is inedible. Chanterelles (*Cantherellus* sp.) are choice edibles and fragrant like apricots, while *Omphalotus illudens* is pungent and sweet to smell but poisonous to eat.

Some mushroom scents make for unexpected associations: *Hygrophoropsis rufescens* smells like Bazooka bubble gum and the gills of *Amanita brunnescens* smell like raw potatoes. *Globifomes graveolens*, a rare east coast polypore, was kept on the shelf in old-fashioned parlors as the original air freshener. Other mushroom scents have unpleasant associations: the crushed flesh of *Hygrocybe laeta* smells like skunk and is called the Slipper Skunk Waxy Cap. *Entoloma incanum* smells like mouse urine, yet Walt says nothing stinks worse than an aged *Climacodon septentriole*, the Northern Tooth Fungus. There are myriad mushrooms that smell like anise or licorice including the Black Staining Polypore (*Meripilus sumstinei*), the Horse Mushroom (*Agaricus arvensis*), and the choice edible Oyster Mushroom complex (*Pluerotus* sp.). Walt notices that the licorice scent of Oyster Mushrooms is accentuated when growing on Quaking Aspen. The fragrance of Big Laughing Gym (*Gymnopilus luteus*) is one of Walt’s favorites which he best describes as cherry, benzaldehyde, or licorice.



Walt Sturgeon himself
(Photo Credit: Walt Sturgeon)

Walt shared a story about this pleasantly fragrant, but wretchedly bitter mushroom. In the mid-Twentieth Century a young woman misidentified *Gymnopilus luteus* for the edible Honey Mushroom (*Armillaria mellea* complex). Shortly after her feast she rose into uncontrollable laughter. Her worried friends saw this as rather unacceptable for a woman of her decency, and so they quickly rushed her to the hospital before she went entirely mad. The doctors informed her that she in fact had been poisoned. She replied, “If this is dying of mushroom poisoning, then I’m all for it!” The audience rose into laughter.

Walt continuously rattled off names and flashed through photos, while he occasionally asked Noah Siegel what the experts were now calling this mushroom or that mushroom. Walt asked Noah one final time when he raised his eyebrows haplessly, and in a low hum drum voice muttered, “Walt. It’s just a name.” I am almost certain Noah knew what the “experts” were now calling this mushroom under question, but his point was made: our “old” names are still valid vernacular.

The youngest of his peers, but knowledgeable beyond his years, Noah Siegel is a nationally recognized amateur mycologist who specializes in in boletes. A Massachusetts native, Noah is now a resident member of the Fungus Federation of Santa Cruz. He and Christian Schwarz are currently working on a California mushroom book. Some folks may recall Noah and Christian had both presented at COMA’s Clark T. Rogerson Foray in 2011.

After the presentation I was saturated in fungal fragrance and anxious to find mushrooms myself. On the ride back Adam explained that the Fungus Fair was the big event hosted by the Fungus Federation of Santa Cruz each year and quite a popular event for the larger Santa Cruz community. Having missed the opportunity to forage for mushrooms in the redwood forest with these folks on this occasion, I told Adam that I had a worthwhile evening and planned on returning to Santa Cruz, hopefully in time for next year’s Fungus Fair.



Stephanie admiring the Red Wood Forest at UC Santa Cruz.



Macrocystidia cucumis smells strongly of cucumbers or fish, depending on your nose.

FROM NAMA TO COMA

Following is a letter from David Rust, president of NAMA. This organization has much to offer us, and we have a lot to gain in taking advantage of it all. Look over their website, www.namyco.org, and enjoy the *Mycophile* with which Dianna Smith is doing a great job. You won't find more interesting articles anywhere.

The Fungus files are wonderful to go through, whether or not you are teaching mycology to kids. We're all kids here.
--editor.

Hi,

I am writing to encourage you to share the attached May-June issue of *The Mycophile*, NAMA's bi-monthly newsletter, with your club members. In this issue, we highlight the opening of registration for our 2013 annual foray in Arkansas on October 24-27, 2013 in the Ozark Mountain Range. The registration form is included in the newsletter. Bios and information about presenters at the event can also be found at: <http://www.namyco.org/events/NAMA2013/index2013.html>

As you know, NAMA lowered dues this year. Members of affiliated clubs like yours can now join for only \$24 for an electronic membership, which includes an email version of *The Mycophile* (six issues per year). Please talk about NAMA at your monthly meetings, in your newsletter, and on your website.

I also want to share a new educational resource, put together by an enthusiastic writer, researcher and artist who lives in Edmonton, Alberta, Canada. This second edition of The Fungus Files, perfect for K-6 education and mycophiles of all ages, was edited by Bryce Kendrick who wrote *The Fifth Kingdom*. I have attached the document, or you can alert your members to this page: http://www.namyco.org/education/fungus_files.html which explains in detail how it can be used with separate pdf files for each chapter. NAMA is proud to host this remarkable work on our website.

NAMA is entering a new era. I hope you'll let me know how we can help your club. Please contact me if you have any comments or questions by email or phone. I look forward to hearing from you.

David Rust
NAMA President
<http://www.namyco.org/>
510.468.5014

IMPORTANT DATES

2013 NEMF SAMUEL RISTICH FORAY AUG. 7-10

<http://www.mycomontreal.qc.ca/actualit.htm>

COMA'S CLARK ROGERSON FORAY AUG 30-SEPT 2

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EUGENIA BONE AT THE KATONAH LIBRARY

Co-sponsored with Bedford Audubon Society and Muscote Farm

October 9 at 8:00 pm

DEADLINE FOR FALL ISSUE- AUG. 5

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