

Speaker for May
MSSF Meeting
Lisa Grubisha

Channel Islands

Biogeography of *Rhizopogon*

Rhizopogon is a common hypogeous, ectomycorrhizal fungus that associates with Pinaceae. Spores are primarily distributed by foraging animals and are not forcibly discharged. Our knowledge of gene flow among *Rhizopogon* populations is limited. To address this limitation we have explored the population biology of *Rhizopogon* in island and mainland populations, where the ocean provides an effective barrier to animal dispersal. Native pine stands occur on two of the Channel Islands off of Southern California. I am interested in determining 1) which species of *Rhizopogon* occur on the islands, 2) whether the same species occur in mainland pine forests, and 3) if there is gene flow among island and mainland populations of *R. occidentalis*. Through soil bioassays and fruit body collections, I have identified *R. occidentalis* and *R. vulgaris* on Santa Cruz Island. *Rhizopogon occidentalis* has been collected on Santa Rosa Island. In the nearest mainland native pine stand, the primary species identified is an undescribed species of *R. subg. Anylopogon*, but no species from this subgenus has been identified on the islands. Preliminary molecular data from *R. occidentalis* populations in Point Reyes, Salt Point, and the islands suggest that the island populations form a distinct group from the Northern California populations.

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Mycodigest

Mycodigest is a section of the Mycena News devoted to the scientific review of recent mycological information

Algae of the World Unite - You Have Nothing to Lose But Your Hyphae!

By Else C. Vellinga, vellinga@uclink4.berkeley.edu

An old pick-up truck sprouts grey growth on its roof, oaks gently toss pale green threads in the foggy wind, the high rising cliffs of Pinnacles National Monument are covered in orange and yellow crusts, and the rocks along the coast are painted black: lichens, lichens, lichens everywhere. From the high mountaintops and the snow-covered plains of the Antarctic, from the depths of the tropical rain forest to the immensely hot dry desert sands, on rocks and even inside them, you will find lichens. Within each lichen is a fungus. Indeed, lichens are a combination of a fungus with something else, but the combination is more than the sum of its parts.



Fig. 1. *Ramalina* sp. and other lichens on Santa Rosa Island.

A huge variety of fungi, mainly Ascomycetes, can form lichens together with another diverse group of photosynthesizing organisms. While green algae are the partners most commonly encountered, cyanobacteria (formerly called blue algae), or brown or golden algae, can also be encapsulated by fungi to form a different organism than the two parts grown separately. This theme has even more variations: one lichen can be made up of a fungus, a green alga and a cyanobacterium species, a 'ménage à trois'; or, one fungal species can do it with different algal species in different parts of its geographical range; and, the same fungus can have either a green alga or a cyanobacterium as partner. There are about 14,000 fungal species involved and slightly more than 200 photobionts (the general word for the photosynthesizing partner) are known, but this latter number might enormously be underestimated. The fungi cannot maintain a separate existence, but their partners are often found growing on their own.

So, what's the deal? The photobiont makes sugars from carbon dioxide and water, a process for which sunlight delivers the energy and chlorophyll provides the catalyst. The fungus takes these sugars from the photobiont, in various ways; it will even send out its hyphae to penetrate the algal cells. The fungus provides the structure in which this happens, and the water necessary for the photosynthesis. The photobiont lives inside and gets some protection against predators and UV light. Many lichens look like leaves, with the photobionts in the same sheltered position as the chlorophyll in a leaf. If the photobionts were on the surface they would easily be damaged by too much light, especially UV light. The fungi are good at making secondary compounds, called lichen substances or lichen acids, which are often the bright pigments we find so characteristic of lichens and provide subtle colours for dyers. The orange parietin and dark melanin are such pigments, which act as sunblock for the photobiont.

Water is an essential for photosynthesis, and can be taken by many fungi from the air -

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Are You a Mycoholic?

By Scott Stoleson, Reprinted from *Mycolog*, newsletter of the Humboldt Bay Mycological Society, 1999, number 174.

Mycoholism is a serious problem that is spreading throughout our society. It isn't a problem confined to the poor and under privileged or to recent immigrants from Eastern Europe. Mycoholics come from all walks of life: lawyers, engineers, ex-firemen, physiologists, students, farmers, housewives. Anyone can be a mycoholic.

There are a few telltale clues that differentiate a mycoholic from the casual collector. For example, their cars have a six-month supply of waxed paper bags in the back seat and dried up *Tricholomas* in the ashtray. They wear little or no jewelry except a hand lens around their neck. Either their collecting baskets are unusually large, worn on the back to leave both hands free for picking, or they have two baskets — one for edibles, one for other species.

While these traits do not automatically condemn someone as a mycoholic, they are among the warning signs to watch for. Are you a mycoholic? Not sure? Then review some of the warning signs (score 1 point for each "yes" answer):

- Do you own a microscope?
- Do you pray FOR rain?
- Does your heart beat faster when you see a stump?
- Do you abandon guests, family or business to go on a foray?
- Do you get evasive and try to change the subject when someone mentions your favorite spot for *Boletus edulis* or *Morchella esculenta*?
- Do you plan your meals around what mushroom species sit in your refrigerator?
- Is your temporal framework modified? Do you no longer think of the seasons as spring and fall but rather as "morel" and "honey"?
- Do you find yourself used to eating, or even expecting to eat, such items as dirt, hemlock needles, non-amyloid spores, and Dipteran larvae?
- Do you get irritated at little things that keep you from foraging? Things like work, home life, police speed traps, and "no trespassing" signs?
- When you see a beginner with a choice edible, do you say, "Gee, that's an interesting mushroom. Would you mind if I take that home to study it further?"
- When you drive, are your eyes on the lawns and stumps along the road more often than on the road?
- Do you suffer through the winter only with the help of frozen, dried, and pickled mushrooms? Or, even worse, do you pack up and head to tropical climes where there are fungi in abundance?
- Is your idea of eroticism a *Phallus ravenilli*?
- Do you carry a picture of David Arora in your wallet?

Sound familiar? Check to see how you scored:

- 0 - 4 You may be normal. Pray!
- 5 - 8 You may be a mycoholic but have a spore print taken to be sure.
- 9 - 12 You are a confirmed mycoholic. Seek help.
- 13 - 14 You are beyond help.

Just what are the dangers of mycoholism? Besides the obvious deleterious effects on social, home, and business life, this disease has very real physical complications as well. Mycoholics, in addition to their tendency to have a sore head from walking into things because of always looking down instead of ahead, frequently suffer from a number of physical ailments that are direct results of their habit of stooping, bending, kneeling, tugging, and lugging. These include Entoloma elbow, Hydnum hand and Trich knee. There are some mycoholics whose all too frequent bolete binges have reduced them to physical wrecks.

So what can be done for the mycoholic? For a start, you should rid your home of all fungi and mycological paraphernalia. Begin by sending all your dried morels and boletes to me. After that, you're on your own!



For the most current
Calendar information, call the
MSSF hotline at 415-759-0495 or
check the MSSF web site at:
www.mssf.org

MSSF Summer Potluck Picnic, July 13

Come and celebrate the dry season with other adrift mushroomers, dream of the fall rains and plot your attack at our annual picnic on Sunday, July 13 at the Joaquin Miller Park in the Oakland Hills. We'll be assembling at the Redwood Glen picnic area in the Sequoia Arena around noon. Bring anything you'd like to grill, a dish to share with the group (perhaps one with mushrooms!), drinks, plates, and eating utensils. Remember our summer weather & include some warm clothes.

Directions: Take Hwy 580 to Hwy 13, take Hwy 13 north, and exit at Joaquin Miller Drive. Drive east up the hill and turn left on Skyline Blvd., drive 1 ½ miles up Skyline, turn left at the sign for the Sequoia Arena. Take an immediate left and follow the road to the parking area. There will be signs posted to help you find the picnic spot.

Please call Mark Lockaby at 510-412-9964 or email him at mark-lockaby@sbcglobal.net for further information

MSSF Discussion Group on Yahoo

The MSSF discussion group that is facilitated through Yahoo is a great way to keep in contact with other members, particularly in the summer when no meetings are held.

To join, go to the MSSF web site (www.mssf.org), click on the left link that says: Members Only, and then click on the link titled: Join the MSSF mailing list.

To get into the members only section of the web site, the user name is: mssf, and the password is: macrofungi. The "members only" section contains the current Mycena News, the MSSF roster, the library catalog, and the council minutes.

President's Farewell

By David Rust, *incredulis@yahoo.com*

The Mycological Society of San Francisco is a large and complex organization. Being president means interacting with a lot of people such as those considering membership, the press, other clubs to arrange programs and activities, as well as running council and membership meetings, and generally making sure everything runs smoothly. At times it seems like everything runs on its own; at other times it can be overwhelming.

It's the people that make the MSSF fun — and it's the people that make it all work. I want to thank some of the really wonderful, hard-working people who have helped make this (volunteer) organization a success during my time as president.

Sherry Carvajal, who was treasurer during my first year, cleaned up a real mess and put our financial house in order. She has done more than anyone realizes this past year with the culinary group, the holiday dinner and cultivation. Sherry deserves a medal or something. George Collier took on the treasurer's duties this year with a fierce determination to do things right, and has given the proverbial 110% by ensuring that the books are kept up to date, forms and taxes are filed, and cash collected is cash deposited. He is a pleasure to work with. Likewise, David Bartolotta threw himself into the long-neglected membership position and fixed the problem by cleaning up errors, entering data and payments in a very timely manner. David took his job very seriously, while often employing his wicked sense of humor. Thanks go to Al Carvajal who devoted days and weeks to convert the MSSF membership database into a more user-friendly program — in addition to running the Culinary Group. I would like to thank Jeanne Campbell and more recently Carol Hellums for serving their respective year as secretary. Being secretary requires discerning the important stuff from the mundane at council meetings and duly recording it for posterity. If you've ever been to a council meeting, you know how much "mundane" can be packed into an hour and a half.

Tom Chester served as Fungus Fair co-chair for several years running. He always ensured a smooth, problem-free operation, and showed remarkable flexibility when we began holding our largest public education and fundraising event at the Oakland Museum. People have expressed amazement at the professional appearance of our fair these past two years. Thank you, Tom, for an excellent job.

We should all be proud of the terrific achievements by Lorrie Gallagher and Rose Flaherty as co-editors of the Mycena News. They added a new feature, the MycoDigest, a wellspring of interesting scientific articles. Thanks to Lorrie and Rose, as well as those members who contribute their articles, the Mycena News is the finest amateur mushroom club newsletter in the U.S.

Many other people have worked tirelessly to make the MSSF a success in the past two years: Norm Andresen with book sales; Ken Litchfield with cultivation, Mushroom Day at the Randall and the Flower and Garden Show; John Lennie, who restored the library and created a remarkable catalog on the MSSF website; and the team of Fred Stevens and Bob Mackler who selected excellent scholarship recipients. I would like to thank those who have held classes for the MSSF, including J.R. Blair, Else Vellinga and Fred

Stevens, providing education for those interested in the science of fungi. In the background, Tom Sasaki never failed to pull off a successful paid foray (Mendocino Woodlands and San Jose Camp). He also worked tirelessly with other foray leaders to get lots of activities on the calendar.

While council members and committee chairs come and go, there are those that work behind the scenes to ensure that institutional memory is carried on. If you look through the names above, you see many past presidents, who care deeply about the organization and who continue to serve when called upon. Among them, Mike Wood, who through his awesome knowledge of fungi and his passion for the MSSF, created and maintains our website, moderates the email discussion group, chairs the Systematics committee, is our representative to NAMA, and so much more. In recognition of Mike's ongoing contribution, the council made Mike an honorary member this year. Mike has provided excellent counsel on several occasions. He always seems to know the best solution to a thorny issue.

There are others who have stepped in as needed — Mike Boom, as the unofficial media spokesperson, Emmy Lou Miller, our official archivist; Duy Thai, our pro-bono lawyer — without their help at key times, important projects simply would not have happened.

I would like to thank Mark Lockaby for performing a steadfast role as vice president. He has stepped into the light by leading forays, acting as mediator, and never wavered in his generosity with his time or fungal bonanzas. Thank you, Mark, for all you have done.

Finally, I would like to thank Debbie Viess for putting up with two years of phone calls, meetings, and time spent focused on the MSSF. As Education chair, she has helped shape the educational message of the MSSF at our fairs and other events, and put together a road show presentation for fungal and non-fungal clubs alike. She has taken on the mantle of the "First Lady of Mushrooms" with grace and, through it all, has kept me on course.

Editor and Layout Person Step Down

This will be the last Mycena News that we, Lorrie and Rose, will produce. We will be stepping down as editor and layout person for the Mycena News. As all of you who have volunteered for the MSSF know, it's difficult to let go of a position that gives you a sense of contribution. And as all of you who are not currently volunteering know, it will be nice to have a little extra time to dedicate to hunting mushrooms and such. Undoubtedly though, we both will find ourselves drawn to some other form of volunteering for the MSSF from which we draw so much satisfaction from its members and activities.

We thank you for your support and contribution, which has enabled us to continue producing one of the best mushroom newsletters available.

The Foragers' Report

By Patrick Hamilton, MYCOCHEF@aol.com

“One of the most appealing attractions about mushrooming is that enchanted doorway that opens for us upon a greater understanding of the natural world. . . .” So began this column back in October. Again now, the last month of our column, one can be in the wonderful woods feeling fascinated. We are lucky and wise to live here.

With a fairly powerful storm coming through the weekend of April 11 came a strong desire to be out in it getting wet and maybe landing a seasons' last load of Black Chanterelles. A call was made to commercial picker friends in what has been termed “The Mushroom Palace” in Willits (see the SF Chron Sunday Magazine article a few weeks ago about Mendocino Mushrooms) and an early Saturday hunt was planned for my friend and me.

The commercial folks can pick every and any day they choose and they usually elect to not go out in rain. These are strong hikers and think little of walking for an hour or two to begin picking and then hauling out 70 pounds or so of mushrooms but to do so in foul weather is not what they have to do. So going out with us was a real favor.

I picked up Raleigh, one of the best guys and pickers anywhere, at the motel and we turned on and traveled down Hwy 20 until we were closer to the coast than to Hwy 101, drove several slippery miles more on logging roads, de-trucked and slogged down a narrow trail with some unwanted aliens, French Broom and Pampas Grass, on both sides. Then the rains came—horizontal barbs straight at us—and my lady friend gave me a glare that was equally disturbing.

This was the day my 10-year-old rain gear finally decided to let go of all making-believe about keeping water out. Instead it acted as a kind of wet suit, allowing a good cold and thick layer of water between it and me. However, unlike a wet suit, the cold wind and rain were still able to get through. Probably happenstance but the boots failed too. First just mud puddle water soaked down in the old cracks but soon clean rain flowed. This all occurred, of course, in the first 10 minutes of our outing. Squishing through that enchanted doorway this time gave us a greater understanding of being really, really wet and a better knowledge of mushroomers.

But we did find some Blacks and there are still lots more in Jackson State Forest. There are also morels being picked in old apple orchards in Sonoma County, down The Peninsula, and near Pollock Pines. White Chanterelles have recently been found in Salt Point and Golden Chanterelles are fruiting in the East Bay and near Santa Cruz and still might be when you read this.

Puff Balls are beginning to show. One real good place to find them is along Hwy 1 near Stinson Beach. Giant Horse Mushrooms fruit above Tennessee Valley in Marin when the hillsides are full of wildflowers. I once found a field full of Frisbee-sized ones there.

The Mushroom of the Month will be for May the Spring Bolete—*Boletus pinophilus*. This hard-as-rocks Sierra mushroom usually overlaps with the tail end of morel season and can be found under either Doug-fir or Ponderosa pine starting at about the 3,000 foot elevation level and continuing to maybe wherever you stop finding

them. They dry well and just like their more famous fall cousins develop a fine patina of almost varnished flavors over time. If you find one keep looking because more will certainly be near, many times just barely visible coming out of the sandy mountain soil.

That's all for this year folks.

Cultivation Corner

By Ken Litchfield, © 2003, klitchfield@randallmuseum.org

We had a very successful display and booth at the San Francisco Flower and Garden Show March 19 through 23. The 8 x 16 garden display was loaded with turkey tail logs donated by Juan Laos and transported to San Francisco by Dave Laos. The framework of logs was filled in with mushrooms provided from a special foray by Mark Lockaby. All of the display and most of the booth was transported to the show and set up with the assistance of Sherry Carvajal. This year the booth was conveniently right around the corner from the display. George and Jane Collier did a great job organizing and setting up the membership sales and taking donations for T-shirts, which made this a very lucrative event. Lorrie Gallagher did her usual great job recruiting and organizing all the booth volunteers. Thanks go to all the folks who monitored the booth, talked to the public, misted the exhibit, sold memberships, and took donations for T shirts: George & Jane Collier, Larry Stickney (3 shifts), Dayle Lavine, Ginny Garrett, Beryl Durnell, Mike Wood, Jane Wardzinska, David Rust, Debbie Viess, Bill & Louise Freedman, Remo and Ann Arancio, Herb Levine, Sandra Brown, Lorrie Gallagher, Mark Lockaby, Tom Sasaki, Monique Carment., Dan Long, and Rebecca Johnson. And not the least thanks go to Enrique Sanchez for taking down the display and booth with Rebecca Johnson and transporting it away with Sherry Carvajal.

This is the last issue of the Mycena News for the season until September. That means to get information about our cultivation events you will have to either get on an email mailing list with me or register with the members only mssf@yahoo.com site to see announcements of upcoming seminars. To register with me just send an email to klitchfield@randallmuseum.org with your personal contact info saying that you want to be on our cultivation events email list. All of our events are free to members and \$15 - \$25 for non-members which includes either an electronic or a newsletter membership. Usually there is a \$5 lab fee for materials and propane use. Right now we are waiting for the morel foray season to be over to free up everyone's time for our events. We usually have most of our events in the summer time off season when the MSSF and most of the mushrooms are dormant, and when the lab is warmer so the cultures will grow faster.

Among the events we will be offering are Lab Techniques 101 with Kelly Ivors and the hydrogen peroxide technique with Phil Ross. We will also be trying out lots of experiments growing various cultures like morels and beefsteak mushroom with Norm Andresen and other of our cultivation core group of volunteers.

The following are two classes offered through the Crissy Field Center that you may be interested in. For further information, check their website at www.crissyfield.org/html/cfc-prog/index.html.

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Fungal Lust!

by Michael Boom, boom@geekworks.net

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An excerpt of this timeless article by Mike Boom is reprinted here from Mykoweb, <http://www.mykoweb.com/> in the Mushroom Articles section. We encourage you to read the entire article on that site, and thanks to Mike for permission to reprint parts of it. This article originally appeared in the East Bay Express, May 12, 1995.

Epic journeys may begin with a single step; mine starts with a dusty '85 Toyota station wagon crammed with camping gear: tent, sleeping bags, cooking equipment, and all the attendant clutter necessary for cold nights in the woods. A Coleman stove and a gallon of white gas teeter behind the driver's seat; a collection of alcoholic beverages only slightly less volatile than the gas squats behind the passenger seat. A formidable pair of ice chests looms in the back. One is filled with block ice and food, the other stands cavernously empty.

And then there's the special equipment: a long stick wrapped with fluorescent tape. Two large wicker baskets, a pair of scissors tied to the one handle. A hooked knife with a brush on its handle, a box of gallon ZipLoc bags, a roll of paper towels, a bright orange whistle, and a liquid-filled compass. An altimeter. And in the glove compartment, which sits ready to dump its contents to the floor at the touch of a button, a cartographic cornucopia: AAA regional maps, USGS 7.5 minute topo maps, USFS service road maps, DeLorme sectional maps, and—just in case we need more routes—a bicycle trails map.

For the benefit of the fungally disinclined, the morel is a mushroom. A wild mushroom. A mushroom revered by cooks and diners from the backwoods of Michigan to the five-star restaurants of Paris. At first glance, a morel isn't much to look at—a slender white stem topped with a shriveled and pitted cap that looks a little like someone's thumb left in the water for far too long. On closer inspection, through eyes of love and fungal lust, the morel takes on a contorted beauty. The cap, perched like an elongated golf ball on a white tee, is honey-combed with delicately laced ridges and deep pits. The ivory stem curves gracefully to join the base of the cap, and if you look closely you may see granules sprinkled like sugar along the length of the stem. Slice the morel in two from tip to base, and it falls into neat halves, revealing its smooth and hollow interior.

Some mushrooms are dependable in their habitats; they hang around the same old haunts, and are easy marks for beginners. You may know that yellow chanterelles like to grow under coastal live oak. If you find a nice patch of them, you can return in similar conditions and find chanterelles there again, year after year. If you once find a troop of king boletes beneath a Bishop pine, you know to look there again in the next season when the fall rains return.

Morels, however, do not like stable habitats. They thrive on chaos—forests burnt to the ground, washed-over river banks, dirt roads plowed through logged forests, an old apple orchard left to run wild. The French reported huge morel fruitings at the end of World War I; mushrooms sprouted in spring from the bottoms of bomb craters, where pickers had to beware of live rounds.

To make matters more difficult, morels do not often repeat their fruitings; it never pays to wax nostalgic about favorite morel spots. If you



Seated from left to right: Norm Andresen, Yutaka Wada, Mike Boom, Lynn Morton, Lorrie Gallagher, Chester Laskowski. Standing: Don Simoni. Photo copyright 1995 by Phyllis Christopher, San Francisco.

find morels in great numbers one spring, you can return to the same spot in later years, at the same time of year and in the same conditions, and find no trace of morels. As a rule of thumb, a disturbed area may produce tremendous numbers of morels the first year after the disturbance, moderate amounts the year following, and few to no morels thereafter.

Successful morelers, then, are keenly aware of the morel's love of chaos. They become necrophiles of the alpine forest, watching news of forest fires and logging operations with fevered interest. They mark maps with colored pencils, make frequent calls to the Forest Service, and swap gossip about fresh sylvan catastrophes. They spin fantasies of future harvests and wait impatiently for the following spring.

In spring, morelers pore over their maps and think about timing—an element every bit as important as location when hunting morels. If you ascend the mountains too early, the ground is covered with snow. If you show up too late, the sun has evaporated all soil moisture, leaving dust, ash, and (for the truly unfortunate) withered and wormy morels to remind you of your tardiness. To hit the proper time, morelers here in California make frequent spring scouting trips to the Sierras and mercilessly milk the fungal phone network for rumors of fruiting.

Morelers lucky enough to get to the right area at the right time still have no guarantee of mushrooms in the basket, even if morels are known to be there. They must first deduce the current fruiting conditions. As one moreler puts it, "You gotta figure out the program for the day," a program that changes from day to day, week to week. One week, morels perch high and dry in bare dirt, where they seek warmth and avoid excessive moisture. They appear only on south-facing slopes in altitudes from 3500 to 4000 feet. The next week, morels in the same altitude like east-facing slopes along small stream banks. They hide in the shade of fallen logs and small burnt manzanita bushes, shunning the sun and seeking higher humidity. And the week following, morels grow from 4000 to 4500 feet only in stands of burnt sapling incense cedars—for no discernible reason whatsoever.

It is, therefore, impossible to predict the habitat for morels when you first arrive on a foray. It's a matter of finding the first morels through luck and a raptorial eye, and then crafting a theory for the day's habi-

Culinary Corner

By *Alvaro Carvajal*, alvaro.carvajal@att.net

We had our monthly culinary meeting at the Hall of Flowers on Monday April 7th. We had a full house with a capacity crowd that came to enjoy a beautiful evening with good food and good company. It was a very enjoyable affair.

The theme of the dinner was a Greek Easter Lamb Roast. The Apostle was the first to underline the Christian symbolism of Easter. When the Christians began to celebrate Easter, they retained some of the features of the Jewish Passover, while at the same time adding other such as the paschal lamb and the red eggs. While the ancient Romans and Greeks offered bulls to their Gods, the preferred sacrificial animal during Jewish religious ceremonies was the lamb. The dyeing of eggs for religious purposes is a practice encountered in many parts of the world. In the Byzantine-Roman times, it was the custom to bake ring-breads with a red egg in the middle. In the Pagan belief system, the egg was a symbol of life while red was the color of life. Lent, a 50-day fasting period, ends on Easter Sunday. You get to eat meat again! In Greece, the fasting ends with the cracking of red-dyed eggs and an outdoor feast of roast lamb followed by dancing. In California, Easter is one of the most beautiful times of the year: it is spring, the hills are colored in vibrant greens, the countryside is in bloom, and there are many wild mushrooms available.

In California, the Black Trumpets are the most widely available wild mushroom at this time and the appetizers prepared reflected that fact. We had black trumpets & ricotta spread with crudités (Sonja Norwood & Ginny Garret); a black trumpet frittata; black trumpets, herbs and sheep milk feta (Dan Long), a black trumpet humus (Alvaro Carvajal); a tabouli with crispy black trumpet chips; a tapenade of olive, eggplant with shitake; and Suillus & black trumpets (George Collier). They were all delicious and you definitely could taste the blacks! Tina Gaw prepared a mushroom couscous with pine nuts while Marilyn Galli prepared a classic couscous. David Weitzman made an outstanding baba ganoush (eggplant caviar), while Kathleen Madsen brought endive leaves filled with red peppers, feta cheese and herbs of Provence. There were several excellent mushroom dips. Of those that I can remember was one by Paul Menyharth and another by Ken Litchfield. Ken's was made of shaggy parasol and potatoes. MaryAnn Swazo showed up with sesame crackers, Sandy Waks with tasty marinated mushrooms with preserved lemon and David Suurballe prepared a wonderful mushroom tart. Poly Shaw prepared some kreatopetes toasts topped with oysters while Carol Reed and Curt Haney made an incredibly good peppery abalone and portabella stew. We washed all that down with a very refreshing punch prepared by Carol Hellums. All these appetizers are the reason why I enjoy the appetizer part of the dinner even more than the main dinner.

We began the main dinner with a wonderful and visually striking Greek salad prepared by Phil Brown and Carol LaPlant and served with freshly baked Pita Bread brought by Fred Kron. After a pause, we started in the main part of the dinner. Leon Ilnicki took seven deboned spring lamb legs, rubbed olive oil, garlic and fresh rosemary on them, laid them in beds of carrots and celery on the society's newly acquired roasting pans and placed them in a 350°F oven until the meat thermometer temperature reached 145°F. It was perfect! The lamb was served with a selection of sauces: a wonderful spearmint pesto made by Sherry Carvajal and incredible wild mushroom gravy made by David Campbell. David's gravy was made using morels, black trumpets, Man on Horseback and Porcini mushrooms. To complement the lamb, we were served Manestra,

which is a Greek style orzo dish (Jeanne Campbell), a braised red cabbage (Anna Uznanska) and northern white beans prepared with champignons and the drippings of the lamb roasting (Monique Carment). After a pause, we had Galatobourekos (David Bell) for desert and some wonderful, freshly brewed coffee (Remo Arancio). Galatobourekos is a classic Greek desert made of layers buttered phyllo and egg custard and soaked with lemon-honey syrup. This was perhaps one of the best dinners of the year.

Next month, on May 5, we will have a Mexican Cinco de Mayo feast. It is the last meeting of the year and we get to select the Culinary Group leaders for next year: chair, co-chair and treasurer. Be there.

Fungal Lust

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tat. You try to find new areas with the same conditions, and then revise your theory to fit the absence or presence of morels. With luck, you'll zero in on the program by the end of the day and fill your basket. But, of course, you must first be able to see morels.

When I first started hunting morels, I was amazed at how difficult it was to see the little devils, even when they were literally at my feet. They look like burnt pinecones; they look like the burnt stubs of saplings; they look like part of the carpet of soil and burnt needles. When the eye takes in the forest floor, any morels present are merely one small pattern in the midst of an optic maelstrom. To be successful, you must keep the image of a morel firmly implanted in the mind's eye, and you must match everything you see against that image. It doesn't hurt to hold a picked morel up to your face from time to time just to remember what it looks like.

This, then, is the challenge of finding morels: to keep your eyes open, your senses keen. To let thought and instinct come together in sharp focus; to extend perception beyond the visible world to deeper and more profound patterns. And, of course, to find supper for tonight.

Membership and Subscription Information

To join the MSSF and receive this newsletter, send a \$25 check, payable to MSSF (\$20 for seniors 65 and over and full time students), to MSSF Membership, Attn: Jane Collier, c/o The Randall Museum, 199 Museum Way, San Francisco, CA 94114. Please include contact information: home and/or work phone numbers and e-mail address. New and renewal memberships will be current through December of 2003. To change your mailing address, please notify Jane. MSSF members may also join or renew membership in the North American Mycological Association at a reduced rate by including with their MSSF check a separate check for \$32 payable to NAMA. Send it to Jane at the same address. For further information, e-mail Jane at jcollier@stanford.edu or call (415) 641-6068.

Society Officers

President: David Rust (510) 430-9353
 Vice Pres: Mark Lockaby (510) 412-9964
 Secretary: Carol Hellums (415) 255-4950
 Treasurer: George Collier (415) 641-6068

Select Committees

Forays: Tom Sasaki (415) 776-0791
 Book Sales: Norm Andresen (510) 278-8998
 Membership: Jane Collier (415) 641-6068

Algae of the World Unite

Continued from page 1

hence the growth of lichens in fog and spray zones. Nevertheless, without water these organisms are able to survive for month after month. High and also low temperatures can be endured in dry conditions, while with water they would either be cooked or frozen to death. However, the lichens that are found in dry hot areas are different from the ones in cold wet or cold dry places, and from the ones on the leaves of trees in the tropical rain forests.

Every generation the symbiosis has to be remade. Lichens often form little packages containing both fungal and algal material; fragmentation is another way of starting a new organism, but these are vegetative ways of reproduction. The fungus does form fruitbodies, just like the free-living Ascomycetes. The fungal spores have to germinate and find photobiontic partners in the wild. Mites may play a role in facilitating this: they crawl over the surface of the lichen, eating their way through it, both spores and algal cells, and everything ends up in their droppings, ready and viable to start a new life together.

The lichen symbiosis was always considered as the ultimate mutualistic way of life: a harmonic and idyllic life style in which both partners profit and none suffers, a welfare state in a nutshell (sometimes literally). Present day lichenologists describe it much more as a capitalistic society, in which the fungus is the only one making a profit and doing it on the backs of the poor algae and cyanobacteria. These cannot escape, their growth and division rates are highly controlled and they can forget about sex. The fungi, of course, do produce sexually, and they grow as far as they can, albeit often quite slowly.

This profit making goes far. Lichens with both a green alga and a cyanobacterium make the most of both. The green algae deliver the sugar and the cyanobacteria are forced to produce more of their nitrogen fixing cells to churn out nitrogen for the fungi. Nitrogen is a limiting factor for fungal growth (it is an important substance of fungal cell walls), and also necessary for cell maintenance. It is thought that the above-mentioned lichen substances are formed because the fungus has too much carbon and too little nitrogen, and has to do something creative with the sugars.

This symbiotic relationship originated not just once in the history of life on earth, but several times, in independent events. Recently it has been shown that the relationship has also been lost several times. One way this could have happened is that some of the lichen fungi started to develop as parasites by exploiting their fungal kin while still profiting from the photobionts. As parasites they could now get the benefits more indirectly, without the hassle of having to start the symbiosis anew with every generation. Even fungal parasites on humans might have developed their unpleasant habits in an earlier lichenized existence. These discoveries shed a different light on the life styles of fungi; it is not a one-way street from

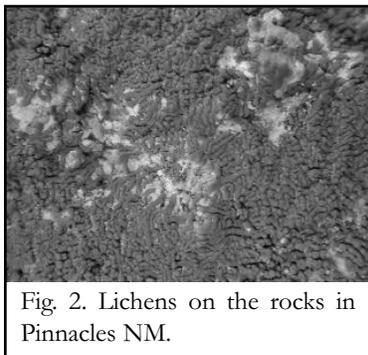


Fig. 2. Lichens on the rocks in Pinnacles NM.

a saprotrophic life to being a parasite or a symbiont. Options remain open; everything is possible.

And that seems to be the theme of the lichens: everything is possible, all combinations of players, all kinds of forms and shapes, and an incredibly wide range of habitats and places.

An eye-opening book to get a taste for lichens is:

Brodo, I.M., S.D. Sharnoff & S. Sharnoff, 2001. *Lichens of North America*. Yale University Press, New Haven & London. 795 pp. - see also www.lichen.com.

Cultivation Corner

Continued from page 4

Mushrooms in Your Garden

Saturday; May 10; 10 a.m. to 1 p.m.

Fee: \$12 per person*

Instructor: Ken Litchfield

Cosponsored by the Mycological Society of San Francisco

Nature Photography in 3D: Parts 1 & 2

Part 1: Saturday, June 7; 10 a.m. to 1 p.m.

Part 2: Saturday, June 14; 10 a.m. to 1 p.m.

Fee: \$35 per person*

Instructor: Ken Litchfield

2003-2004 Nominations

The MSSF nominating committee is happy to announce a full slate of candidates for this coming year. Officer nominations for a one-year term, starting in July, 2003, are:

President: Mark Lockaby

Vice President: David Campbell

Treasurer: George Collier

Secretary: Carol Hellums

Councilor nominations for a two-year term starting in July, 2003, are:

Denise Gregory

Daniel Long

Lisa Grubisha

Continued from page 1

Lisa Grubisha received her Master of Science degree in the Department of Botany and Plant Pathology from Oregon State University under the direction of Dr. Joseph Spatafora. For her thesis research, she examined infrageneric relationships in *Rhizopogon* using molecular phylogenetic methods. Lisa joined Dr. Tom Bruns lab in 1999 to pursue a Ph.D. For her dissertation, she is examining patterns of gene flow among populations of *Rhizopogon occidentalis* along the California coast and Channel Islands.

You can read more of Lisa's publications on the Bruns Lab web site: <http://plantbio.berkeley.edu/~bruns/lg.html>.

MSSF T-shirts

MSSF teeshirts and sweatshirts will be sold at the May Annual Meeting at the Randall — the last chance to purchase the new St. Amanita design by Taylor Lockwood until next Fall.

Mycological Society of San Francisco
c/o The Randall Museum
199 Museum Way
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MSSF Calendar, May, 2003

Friday - Sunday, May 2 - 4, Annual San Jose Family Camp Foray: Fee for the weekend is \$85 for members and \$105 for nonmembers. Leaders are Mark Lockaby and Tina and Thomas Keller. For information, call Tom Sasaki, (415) 776-0791, sasakitom@aol.com.

Monday, May 5, Culinary Group's Monthly Dinner: 7:00 p.m. Come and join us for the monthly culinary group meeting and dinner at the Hall of Flowers Library, Golden Gate Park in San Francisco. We will be having a Cinco de Mayo Fiesta. For reservations or information, please contact David or Jeanne Campbell at 415-457-7662 or at yogi-dog@attbi.com.

Tuesday, May 20, Last MSSF General Meeting: Randall Museum, doors open at 7 p.m., lecture starts at 8. This last meeting of the season will feature Lisa Grubisha, who will talk about the Channel Islands Biogeography of Rhizopogon.

Sunday, July 13, MSSF Summer Picnic: Noon; Joaquin Miller Park in the Oakland Hills. See directions in newsletter or call Mark Lockaby at 510-412-9964 or marklockaby@sbc-global.net.

Bylaws Changes

By David Rust, President

The MSSF Council has approved proposed amendments to the organization's bylaws. By this notice, MSSF members now have a chance to review the proposed amendments to the bylaws prior to a vote. If there is a quorum at the May Annual Meeting on Tuesday, May 20th at the Randall Museum, a vote on the amendments will take place at that time. If there is no quorum, a mail ballot will be required, with a June 15th deadline. A two-thirds majority is required by either method.

As of May 1st, you will be able to review a copy of the proposed bylaws in the "Member's Only" area of the MSSF website, www.mssf.org. Changes and additions to the existing text will be highlighted in blue.

Please don't hesitate to call or email me (incredulis@yahoo.com, 510-430-9353) with any questions about these changes at any time up to the Annual Meeting.

Mycena News is the newsletter of the Mycological Society of San Francisco and is published monthly from September through May. Starting in September, 2003, there will be a new editor. Please e-mail newsletter submission to mycena-news@mssf.org.