As mushroom collectors and fungal students, if we are lucky, we observe the exciting and profligate flourishing of morels following forest fires. So far, we have no conclusive explanations for this: Is it due to carbon dioxide seeping into the soil, or the release of sulfur oxide, nitrous oxides and other gasses as the surface of the soil cracks with the escape of water from the heat? When bull-dozers turn the soil over and loosen it during lumbering operations, do they help to introduce gasses? Nitrogen is largely lost from the soil after fires. Heavy gases such as carbon dioxide hug the ground, lighter ones escape. The looseness of the soil may allow increased oxygen or other gases to sink to deeper levels. Explanations such as this have been very speculative. The causes are poorly understood and difficult to test.

From Sweden, according to Peter D. Moore, from King’s College London, as reported in NATURE, Vol. 384, Nov. 28, 1996, comes another possible explanation for the morel response to fire. Investigators have observed that large amounts of charcoal produced in forest fires adsorb phenols. As you may remember, lignin, the backbone support for plant tissues and trees, is composed mainly of polymerized cellulose molecules held together by phenol rings. In the process of combustion, these phenolic chemicals are released into the soil and removed by the charcoal.

In a stable forest environment, plants, bacteria, insects, and fungi, such as the mold Penicillium, release inhibitory compounds (antibiotics) into the soil. Tannins and other compounds containing phenol are produced by plants and repress the growth of plant seedlings and the activities of mycorrhizae.

After a fire, charcoal accumulates in the soil and removes these phenolic compounds. The growth of plants and fungi is thereby allowed to return without suppression. In time, the charcoal becomes saturated and can no longer remove phenols and protect the organisms influenced by antibiotic action. With the removal of competitors, this may explain why morels are abundant for only one year after a fire. In subsequent years, competitors return, reducing fungus fruiting.

Before a fire, tannins in the humus repress the growth of bacteria, some of which provide nitrogen for plants and fungi. When the humus is destroyed in the fire, bacterial communities are stimulated to grow rapidly. Nitrogen fixation by bacteria assists regeneration of the area after a burn and plays an important role in forest recovery. Removal of phenolics probably contributes to this phenomenon. Bacteria do not like phenols.

Many studies have been made of soil changes after fire. Perhaps some of these can help us understand morel behavior: burning removes organic matter and nutrients from the soil. Doesn’t this remind us that the last step in the commercial cultivation of morels is to stop feeding them to stimulate fruiting?

There is a flush of positive charged ions into the soil, such as potassium, sodium, calcium, magnesium etc. As pH rises, it becomes more alkaline and morels prefer this; fine, relatively inert charcoal particles enhance the water retentive properties of the soil which now can support wetland plant communities. The soil loses its porosity. It becomes more like clay and withholds moisture. The earth in which we find morels is usually quite wet. Part of
Ah, spring is in the air and a young man's mind turns to morels. I've got last spring's bounty still engraved on my (mind?) and what a bounty it was: Cottonwood Valley and the trail to it producing unpickable quantities, literally all one could carry.

Also on my mind are images of happy, tired faces at the end of the day working on treats for the meal: fire-roasted morels, salmon- or polenta-stuffed morels, morels in cream to name just a few. People at first share a few mushrooms, then more, and at last they throw open the Sierra Madres-like hordes. The communal table is soon awash in this precious fruit.

Stories start around the fire: bears and dogs, mountain lions, and wondrous spots. Always the comparisons with spots of legend. Was Rose Creek or Barker Mountain more prolific? How are they fruiting right now? East slope or north? Canopy or in the open? Slash or natural morels? The campfire has always been the chalkboard of the morel hunter. The newcomer can listen and learn; the old hands can hone their skills over a glass of port.

You can work on your own morel memories this year. Don't forget to contact our foray chair Henry Shaw to get details on this year's trips.

-Norman Andresen, President

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My thanks to all the contributors to this month's newsletter—to Bill Freedman for his treatise on morels, to Henry Shaw for lining up forays to visit those morels. To guest columnist Stephen Bowen reporting on unusual chanterelle fruiting patterns this year, and to David Campbell indulging in some fine April firstery with a bardic foray through Elizabethan fungiphilia. To Wade Leschyn for an insider's report on species lists and specimen vouchering, accompanied by a full species list of the February NAMA foray in Monterey. Thank you all. And thank you, David Campbell, for volunteering to take over the Forager column next fall.

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In last month's issue, I got my blood up over the East Bay Regional Park District's $675 ticket given to Grover DiMarinis for picking two pounds of chanterelles. Since then, I've received more information about the case—Grover called me with the details. He was cited as he exited the Sibley Park exit by a ranger who had his truck hidden about the case—Grover called me with the details. He was cited as he exited the Sibley Park exit by a ranger who had his truck hidden behind the bushes. The ranger came out with lights flashing and gave Grover his ticket, claiming that he let him off of the "serious" charges he could have brought against him. It turned out that he didn't, that Grover's ticket was for a misdemeanor charge of damaging/removing plants, ordinance 38.804.

This ordinance reads as follows: "Plants. No person shall damage, injure, collect or remove any plant or tree or portion thereof, whether living or dead, including but not limited to flowers, mushrooms, bushes, vines, grass, turf, cones and dead wood located on District parklands. In addition, any person who willfully or negligently cuts, destroys or mutilates vegetation shall be arrested or issued a citation pursuant to Penal Code Section 384a."

This ordinance means that if you pick a blackberry in an EBRPD park and pop it in your mouth, you may end up $675 poorer with a criminal record. (This is a misdemeanor offense, not simply a fine.) Read strictly, it means that all those softball players sliding into home might be cited with the same penalties for destroying grass.

The upshot of the matter is that Grover has now been before the Oakland municipal court three times, has been appointed a public de-
The 1998 MSSF Morelfest
May 1-3, 1998, San Jose Family Camp

The wildflowers are beginning to bloom, the fruit trees are starting to flower, the rainstorms are coming less frequently, and all that can only mean one thing: the Sierran morel season is almost upon us!

Once again the society will be holding a "social" foray at one of the developed camps in the Sierra. As we have for the past few years, the foray will be held at the San Jose Family Camp, which is located just off of Highway 120, east of Buck Meadows outside of Yosemite Park. Meals are served in a large dining facility that also serves as the center for socializing into the evening. The camp itself is located in a beautiful setting along the Middle Fork of the Tuolumne River, which provides a soothing sonic backdrop for the festivities.

Although there were no major fires in the Sierra last year, morel collecting should still be good in the areas east of Evergreen Road that burned the year before last. Collecting in those areas was spectacular last year, and it is likely that the same areas will produce again this year, especially if there has been some salvage logging. As usual, the weather is key, but the long-term forecast is for a warm, wet spring, which bodes well for an extended mushroom season.

The cost of the foray this year will be $80 per person, which includes all meals from Friday dinner through Sunday lunch. Accommodations at the camp are in platform tents equipped with camp cots. The camp has hot shower/washroom facilities. Bring a sleeping bag or blankets (nights can be cold), a towel, toiletries, a flashlight, rainwear, good footwear, and collecting gear (knife, basket, etc.)

To reserve your place at the foray, send your check made out to "MSSF" to Henry Shaw at 155 Sharene Lane #214, Walnut Creek, CA 94596. You may also contact him at 510-943-3237 or send email to shaw4@lbl.gov for more information.

-Henry Shaw, Foray Chair

Fire and Morels continued from page 1

the reason may be seasonal, but they are seldom found on dry soil or during the dry season. It is not uncommon for unseasonal morels to be brought to our public demonstrations in December and January having been found growing on damp cellar floors or disturbed moist sandy soil in San Francisco.

From MSSF cultivators Don Simoni and Fred Stevens, and Paul Stamets’ book The Mushroom Cultivator we gain supporting insight into post-fire morel growth, especially for Morchella angusticeps. Morels avoid competition.

They prefer alkaline soils. They germinate rapidly and invade litter or growth medium vigorously, using up most of the nutritional material. Then they form sclerotia, hard knots of asexual material, sometimes brown and sometimes golden. These subterranean bodies have the capacity to either form mycelia, if food is present, or to erupt as fruit. They prefer a cold intervening season after fires, simulating winter. As the temperature warms, they fruit in response to the stresses they encounter. Soil nutrients have been used up. This is one source of stress. Burns destroy much of the nutrition-bearing litter. Prefering soil with 60-70% moisture, they are stimulated to fruit as the snow pack melts, or the seasonal rains hydrate the soil. Fire has also inhibited the return of competing life forms and this acts as a growth stimulant. Carbon and nitrogen, growth inhibitors for morels, have been reduced by fire, and potassium, calcium, etc. have been increased, making the soil more alkaline. Stamets advises that preparing beds for morels in burned areas and adding clean wood ashes to his inoculation sites improves the production of these fungi.

Observations such as these suggest new avenues for experimentation with morel cultivation. Perhaps Dr. Moore’s observations can provide us with some fresh clues to ensure the consistent cultivation of larger and more flavorful morels as we learn to reveal more of nature’s secrets.
Species Database / NAMA-98

by Wade Leschyn, species database chair

What is the species database committee all about and what role did it play at the recent NAMA foray in Monterey?

Foraying for mushrooms for our mushroom fairs is followed by a serious effort by the best identifiers present to put accurate names on all collected specimens. The MSSF is, of course, seriously indebted to Dr. Dennis Desjardin and his graduate students for all the help they provide to the society during the mushroom fairs, particularly in the area of taxonomy.

It is the species database committee’s responsibility to keep track of the identifications made and compile them into a species list. For the MSSF fairs, the committee also generates the display labels you see with the mushrooms on display. In addition we spend considerable effort keeping track of originating locations for as many specimens as possible so we can create species lists by forays. Often it is the promise of a local species list that helps us secure a collection permit in many areas.

So what is the difference between an MSSF mushroom fair and a NAMA foray when it comes to how the mushrooms are identified and handled? One difference is that a variety of specialists usually come to the NAMA foyr when it comes to how the mushrooms are identified. Another difference is that many specimens from the NAMA foray get vouchedered. What is vouchering? I didn’t know myself until after I was asked by the NAMA-98 committee to be responsible for the species database task at this year’s NAMA foray.

Vouchering is the process of recording and permanently preserving one specimen or collection for each found species. Preserved with the specimen are the accompanying field collection label and a photograph of the fresh specimen. Each vouchered specimen or collection is dried in a dehydrator, sealed in a plastic bag, and delivered to a herbarium at the Chicago Museum of Natural History under the supervision of Dr. Patrick Leahey.

Vouchering preserves for posterity a record of collected material and their identifications. Since NAMA forays take place across the country, over time a significant collection of a variety of fungi will be accumulated. Imagine that the taxonomists decide to split a species into two. Researchers could go to the NAMA voucher collections, pull the relevant material, and after study they might conclude that the split is valid and occurs along geographic lines. Or they might discover some other pattern, or lack of pattern, which either way could be helpful in a better understanding of the scheme of things.

Volunteers at the NAMA foray helped in photographing collections, organizing, drying, identifying specimens, and making sure all collections had field labels attached with at least a location filled in. Rec-ording at least some basic information such as the foray location on the field label is critical to the usefulness of the collection for vouchering. A number of nice-quality unique specimens could not be vouchedered because the collector did not fill out his or her collection tag.

In the end, for most of us, the result is a species list. Species lists from past forays are helpful to use as checklists on future forays to help with identification. NAMA-98 recorded 235 species listed as follows:

- Agaricus augustus
- Agaricus benesi
- Agaricus bernardi
- Agaricus californicus
- Agaricus fuscovelatus
- Agaricus gennadii
- Agaricus lilaceps
- Agaricus silvicola
- Agaricus subrutescens
- Agaricus xanthodermus
- Agrocybe pediades
- Agrocybe praecoex
- Aleuria aurantia
- Amanita calyptrotoideas
- Amanita consticta
- Amanita franchetii
- Amanita gemmati
- Amanita magniverrucata
- Amanita muscaria var. flavivolvata
- Amanita novinupta
- Amanita ocreata
- Amanita pachycoslea
- Amanita pantherina
- Amanita phalloides
- Amanita siliviola
- Amanita smithiana
- Amanita sp. “spring calytroderma”
- Amanita velosa
- Amanita velosa - white
- Armillaria ostoyae
- Astreus pteridis
- Auricularia auricula
- Bisporella citrina
- Bolbitius reticulatus
- Bolbitius vitellinus
- Boletus chrysenteron
- Boletus dryophillus
- Boletus flaviporus
- Boletus subtomentosus
- Boletus zelleri
- Calocybe onychia
- Calvatia cyathiformis
- Cantarellus cibarius
- Chromosoma cyanophylla
- Chroogomphus rutilus
- Chroogomphus vinicolor
- Clavariadelphus occidentalis
- Clavulina cinerea
- Clavulina cristata
- Clavulina rugosa
- Hygrocybe cinera
- Hygrocybe conica
- Hygrocybe flavescens
- Hygrocybe psittacina
-...
The Penultimate Issue

This, folks, is my penultimate issue of the Mycena News; the May issue will be my last. It turns out that trying to put out a decent newsletter while running my own business is impossible without severe burnout. I am attached, I’ll have to admit, to making a living, so I have to hand the Mycena News off to another dedicated soul.

I’m looking for that dedicated soul (of course) and hope that one of you may be it. Although being the newsletter editor requires steady work on your part, it also comes with some great perks. You’ll be at the center of all the news going on in the MSSF; you’ll know about mushroom finds and upcoming forays before anyone else except the reporter, and you’ll get a chance to stand on your soapbox from time to time and rave at the wind.

Putting out the Mycena News requires wearing two hats: editor and publisher. Although Rose Flaherty (the previous editor) and I have worn both hats, they have in the past been successfully split apart so two people take on the newsletter.

The editor’s job is to provide content. He or she prods people for articles, looks for interesting articles to reprint, types in submissions that come in on paper, makes sure the regular columns are written, fills in the calendar, and sometimes—space permitting or demand—writes his or her own material. The editor also edits submissions, cleaning up grammar and spelling when necessary while keeping the submitter’s original voice. There are a few occasions when the editor has to quash an article or ask for a rewrite if the original contains personal attacks on other members or just isn’t pertinent for the MSSF readership.

The publisher’s job is to put content on paper, have it printed, and get it mailed to the MSSF membership. He or she typically uses a page layout program to lay out the articles and columns along with graphics to keep the newsletter lively and fun to read. Once the newsletter is laid out, the file goes to our ace printer, Mother Lode Printing, who prints the issues, puts the address labels on, and mails them. The publisher has to remind the membership director to send the mailing list to the printer.

All this takes place once a month for nine months; summertime is vacation time. Owning a computer is an obvious plus—it provides email contact for the editor and makes layout much easier for the publisher. I have a fully developed PageMaker template for layout that takes care of much of the work.

The Mycena News is an important voice that keeps the disparate members of the MSSF tied together. If you can help keep that voice speaking next year, please give me a call at 510.635.7723 or send email to mboom@ascend.com.

-Mike Boom, Editor
Chaparral Chanterelles

Some Reflections on the Current Season

by Stephen Bowen

I’m sure most fungophiliacs will remember the ’97-’98 chanterelle season as one with the heaviest crops in years. I personally have collected over 800 pounds as of March 1st. There have been, however, some very interesting observations made by people who, like myself, are constantly in the woods. This season I started collecting approximately two weeks before Thanksgiving, and have noted some distinctive designs in locales where I have been collecting for the past twenty years. The growing patterns of chanterelles this season have become increasingly clear.

Probably the principal pattern is what I have seen time and time again when I make my weekly visits to what I call my primary fruiting areas: I have consistently noted there a rather dismal crop. However, not far from these primary places there have been dazzling displays of chanterelles.

What is a primary area? For me these spots are usually the first to fruit, and from year to year are the most consistent producers. In these belts, which mostly consist of live-oak and mixed forests in the Santa Cruz Mountains, the fungi started fruiting early and produced poorly. In fact, some sectors closer to the coast never fruitied at all. I have heard similar reports from members of the Santa Cruz Fungus Federation and the Sonoma County Mycological Association.

For me, most of the great collecting this season has been in what I call secondary fruiting areas. These are ordinarily marginal habitats. The fungi here do not come up every year. Perhaps these zones tend to store sustenance longer than the primary areas, and when the correct conditions come along—like “El Niño”—they can produce awesome fruitings, meaning whole hillsides surrounded with circles of cibarius.

Probably the most amazing scenes I have sighted were secondary areas surprisingly far from the moist sectors where most folks search. For Chanterelles. Where then? Along the ridges and hillsides with a southern exposure that are covered with shrubs and chaparral including the xeric Manzanita and Coyote Brush. Although there have always seem to be a few oaks mingling nearby, I have seen massive quantities of beautiful yellow chanterelles in nothing but manzanita and toyon or other low growing bushes where most people would never even look.

These zones are very dry all summer, and plants adapted to these conditions must be very drought tolerant, their associated fungi even more so. To me, this kind of condition characterizes the most severe “secondary sites,” spots where in normal years one would be very unlikely to find water-loving Cantherelli. Perhaps these places may be even tertiary territory, fruiting only every ten years or so. Perhaps in the drier times there is enough moisture for these fungi to store nutrients so that when we have conditions such as we have seen this winter, these marvelous mushrooms mushroom in amazing numbers. At the time of this writing in mid-March, I am collecting only in chaparral sections of the mountains. Beneath the beautiful red-barked manzanita shrubs there could well be a golden harvest still waiting now to be collected. If there is no manzanita nearby, I won’t even bother to look.

Stephen Bowen was a student of former MSSF president Joe Mandell in the South Bay in the 80s, then became a biology teacher at Leland High School in San Jose. He sends 50–100 of his students each year to Bay Area fungus fairs for extra credit every winter. He takes students in the woods to collect, a very popular activity, and was and is Alice Waters’ number one wild mushroom provider. He is a frequent collecting companion of Larry Stickney.

May Mushroom Madness

Loraine Berry is presenting another in her series of illustrious Mushroom Madness dinners on Sunday, May 3rd at her home in Marin County. The dinner starts at 1 p.m., is limited to 16 people, and is a participatory event; bring an apron and a decent bottle of wine to share.

To reserve a place, send a check made out to “MSSF” to Loraine Berry, P.O. Box 1106, Ross, CA 94957. Cost is $32 for each MSSF member, $38 for each non-member. Your check is your reservation and receipt. The money made at this event goes to the MSSF scholarship fund.

The proposed menu (which depends on the availability of morels) includes smoked tofu and shiitake appetizers; truffle surprise appetizer; toasted croissants with morel omelet; chicken with morels; Coquilles St. Jacques a’la Parissienne; Beef Wellington with mushroom duxelles; coral mushroom and spinach salad; candy cap biscotti and black walnut ice cream; microbrewed beer, wine, and waters.

I’m hungry already!

April Meeting: In the Company of Elio Schaechter

The speaker for the general meeting this month is Elio Schaechter, the author of the critically acclaimed book In the Company of Mushrooms: A Biologist’s Tale, published by the Harvard University Press in 1997. Many people know Elio as the indefatigable newsletter editor for the Boston Mycological Club, putting out year after year of impressively high-quality publications. Others know him as a Distinguished Professor of Molecular Biology and Microbiology, Emeritus, at Tufts University School of Medicine. And still others know him as a recent immigrant to the warm climate of San Diego. Come meet him yourself and listen to some of Dr. Schaechter’s fungal tales. If you want more when the meeting is over, you’ll find copies of his book for sale at the MSSF’s book table.

The general meeting is on Tuesday, the 21st of April, at 8:00 p.m. It’s held in the Randall Jr. Museum in San Francisco. Doors open at 7:00 p.m. for pre-meeting schmoozing, book sales, and poking and sniffing the mushrooms we all bring in. See you there!
All the World’s a Substrate

Friends, roaming boletivores,
lend me your wood ears.
I come to braise Caesar’s mushrooms,
not to poach them!

The weevils and worms do thrive and long vex us,
yet, with good ceps most oft we feed our bones.

To be there, or be square,
that is the quest upon us befell,
Though, for the truth, as to where,
how woods I know! I really chanterelle.

Whether ’tis nobler in the mind of Sparassis
to join with the augustus amongst us?
Or, for morel reasons,
or worse, for lack thereof,
to lichen ourselves to slime and mold?
“Out!” we cry, “Out of my damned spot!”

Yet, the fault, deer Pluteus,
lies not in muck duff, but in ourselves,
that we do not glean the underlings.

Alas, poor Agaric,
we’ve known him well.
Yea, who amongst us would not,
in such a thrice,
his basket’s bounty yield?
But for chance to corral that gold-streaked horse,
those fungi we find in the field.
A horse? A horse!
My King Boletus for your horse mushrooms,
and, I beg, those shaggy manes, too.

Would we then cry havoc,
unleash against those dogs who pick so full bore?
Exact our pound of flesh,
then find how they be
not that much unlike me,
with such interests so similar to yours?
Methinks we do protest too much!

Think, how much nobler would it not be,
but to bend our hearts more towards commonality,
to stride through these times with our pilii aligned,
and fetch as we may such sweet fungi we find?

For all the world’s a substrate,
and all the men and women
merrily picking.

-David Campbell

MSSF Web Site Now at mssf.org

Hard-working MSSF webmaster Mike Wood reports that he’s just registered the domain name “mssf.org” for the MSSF and has moved the MSSF web pages to a new Internet Service Provider account at DNAI. The move frees up room at Mike’s own web site for more mushroom photos in Mykoweb and gives the MSSF more room for other web-related projects we may care to undertake in the future.

The new domain name means that we now have a new location for the MSSF web pages: http://www.mssf.org. It also means that if we ever institute email accounts through our Internet service provider, messages can come to email addresses such as johndoe@mssf.org.

Check out the new MSSF web site location. And don’t forget to drop Mike Wood some email to thank him for all the work he’s done on our behalf.

MykoCD For Sale

Mike Wood has put the contents of his very successful Mykoweb site on CD-ROM. It contains over 800 full-color mushroom photos and 220 species descriptions in a fast-loading format that requires no Internet connections and will run on Windows or Macintosh computers.

To order a MykoCD, send $15 + $1 postage (in the U.S.) to Mike Wood, 14856 Saturn Dr., San Leandro, CA 94578. Any proceeds from this very inexpensive CD-ROM help Mike maintain MykoWeb and run the Bay Area Fungi project. For details, write to Mike or send email to mwood@mykowood.com.

The Forager is taking a break this month. We hope Bob Gorman will be back next month for a crack at the spring mushroom season in the Sierras.
Saturday & Sunday, April 18-19: Sierra morel camping foray. Location to be determined depending on conditions, probably Evergreen Road/Stanislaus National Forest. Call or e-mail Henry Shaw for details: shaw4@llnl.gov, 510.943.3237.

Tuesday, April 21: General Meeting at the Randall Junior Museum in San Francisco. Doors open at 7:00 pm for mushroom ID and book sales; meeting proper begins at 8:00 pm. The speaker this month is noted mushroom author Elio Schaechter.

Saturday & Sunday, April 25-26: Sierra morel camping foray. Location to be determined depending on conditions. Call or e-mail Henry Shaw for details: shaw4@llnl.gov, 510.943.3237.

Friday–Sunday, May 1-3: San Jose Family Camp morel foray. See article this issue. The cost this year will be $80/person for the weekend. Checks should be made out to the MSSF and sent to Henry Shaw at 155 Sharene Lane #214, Walnut Creek, CA 94596. Call or e-mail Henry Shaw for details: shaw4@llnl.gov, 510.943.3237.

Tuesday, May 19: General Meeting at the Randall Junior Museum in San Francisco. Doors open at 7:00 pm for mushroom ID and book sales; meeting proper begins at 8:00 pm. The speaker has yet to be determined.


Monday–Friday, June 1–5: Fungi of the Sierra Nevada Class at the SFSU field campus in Yuba Pass in the Sierras. This is an official San Francisco State University class taught by MSSF scientific adviser Dr. Dennis Desjardin. Registration, room, and board comes to just a little over $300. For details, call Jim Steele at 415.338.1571.

Monday–Thursday, July 6–9: Asia-Pacific Mycological Conference in Thailand. For details you'll have to break out the web browser and check out [http://www.biotec.or.th/diary/mycology/mycology.htm](http://www.biotec.or.th/diary/mycology/mycology.htm) or send email to mycology@biotec.or.th.

For the most current Calendar information, call the MSSF hotline at 415.759.0495 or check the MSSF web site at: [http://www.mssf.org](http://www.mssf.org)