Newsletter of the North American Mycological Association

THE MYCOPHILE

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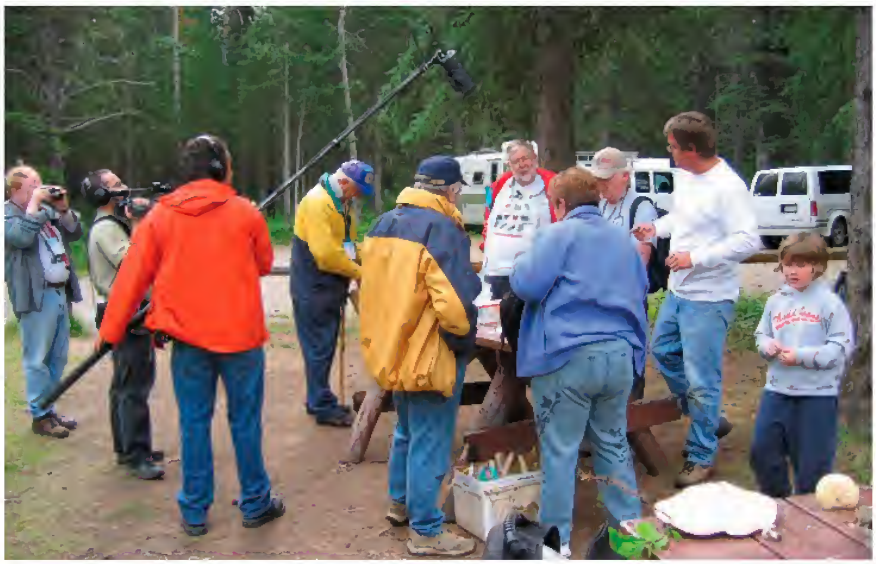

Walt Sundberg leads a beginner's foray. Note the film crew on hand to record the event. Photo by B. Bunyard.

NAMA Goes to Canada, Returns with Marvelous Tales to Tell!

Jasper National Park, Hinton, Alberta, and the warm hospitality of our Edmonton hosts. Wow, what a treat! This year NAMA traveled north to the upper reaches of the Canadian Rockies at the invitation of the Edmonton Mycological Society. The long trip was well worth the effort as the facilities were superb—a forestry training center, comfy quarters, outstanding food (plentiful, very tasty, and very healthy) with a profile of the Jasper area Rockies only 45 miles to the west when we looked out a window or ate lunch on the outer deck. The weather also cooperated: warm, sunny with rain before we arrived and again near departure time. It's a shame that only 140 members attended, as the site, weather, mushrooms, and programs were well worth the effort to get there.

The local coordinators, led by Martin Osis and Melanie Fjoser, and other members, planned a field-trip-jammed weekend to a very wide variety of habitats from near-prairie to high-elevation habitats, both dry and wet. We also visited peaty bog and fen areas, learning the difference between them, and finding many mushrooms and viewing interesting plants along the way. We were also educated on the behavior necessary in case we shared space with either brown (grizzly) or black bears and/or moose. (A little black bear would visit the campus where we were staying.)

Dr. Cathy Cripps of Montana State University, a former student of Dr. Orson Miller Jr., was Chief Mycologist, assisted by Drs. Markus Thormann,

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Our First Foreign Fungus Foray

by Bob and Barbara Sommer

Troubled by restrictions on local collecting? Afraid of being arrested and fined? Tired of finding familiar fungi in the same locations every year? Too much competition in nearby woods?

If you answered yes to any of these questions, advertisements for

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Digital Photo Contest Winners Inside

In this issue:

PRESIDENT'S MESSAGE

The NAMA foray in Hinton, Alberta, was a huge success. The facilities were more than adequate, and what can I say about the meals? It's safe to say that I gained a few pounds on this trip! The meals alone were worth the registration fees. The mushrooms even cooperated, piling up on the collection tables in great numbers. I want to thank all of those who helped make the foray such a great success. A special thanks to Martin Osis, Melanie Fjoser, and all of the other members of the Edmonton Mycological Society who worked hard to pull this off. Also to Louis Galick, who first approached NAMA about coming to Alberta.

Foray 2007 in West Virginia promises to be another success. If next year's rains come as they have this year, the mushrooms should be abundant. A walk through the woods this past weekend yielded mushrooms in every direction.

Several items were discussed at the Trustees' meeting in Hinton. Among these was the financial condition of NAMA, which remains stable at this time. Our year ended June 30th and resulted in a small profit for the Organization. The archiving of NAMA materials with the New York Botanical Gardens is nearly ready for submission. As you have noticed, *McIlvainea* has returned. Thank you, Britt and Judith. Two new clubs have become affiliated with NAMA, one in Alaska and the other in Mexico. Again this year the officers and trustees were challenged to contribute to NAMA's Endowment Fund, and, as usual, they rose to the challenge, donating over $1,000 of their own money to this cause. Many other issues too numerous to go into here were discussed during the meeting, making for a full day. Many thanks need to be bestowed upon the members who serve and participate in these meetings. If you ever have the opportunity to attend a NAMA Trustees' meeting, you will see that these are truly dedicated individuals.

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The Sommers in Costa Rica, continued from page 1

Bob sketched this Veloporphyrellus pantoleucus *while Rolf Singer paced impatiently waiting to put this rare specimen into his dehydrator.*

foreign tours in mycology newsletters will begin to look appealing. Some read like recruiting posters for the US Army: Travel to distant places. Find exotic mushrooms. Pick them.

Not surprisingly, our first foreign fungus foray was also the most memorable. Psychologists call this a "primacy effect," like a first sighting of an *Amanita muscaria.* You don't forget when and where you found it, who was with you, and your emotional state at seeing firsthand what has so far been only illustrations in field guides and drawings on psychedelic posters paired with witch's brew and frogs. Recognition was instantaneous. Yes, there really are statuesque crimson mushrooms

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Moving?

Please send your new address, ***two weeks*** before you move, to

Ann Bornstein
NAMA Membership Secretary
336 Lenox Avenue
Oakland, CA 94610-4675
<Membership@namyco.org>

Otherwise—you may not be getting your newsletter for a while. Each issue, several *Mycophiles* are returned as undeliverable because of no forwarding address on file. NAMA is charged ***seventy cents*** for each returned or forwarded newsletter.

NAMA is a 501(c)(3) charitable organization. Contributions to support the scientific and educational activities of the Association are always welcome and may be deductible as allowed by law. Gifts of any amount may be made for special occasions, such as birthdays, anniversaries, and for memorials.

Special categories include
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Gulf States Mycological Society Winter Foray

St. Francisville, Louisiana
December 1–3

For details and registration form see page 9 in this MYCOPHILE.

37th Annual Fungus Fair

Oakland, California
December 2–3

Each year the Mycological Society of San Francisco hosts one or two mushroom shows (traditionally called "fungus fairs"). At the show you will see hundreds of species of fungi on display along with exhibits on ecology, mycophagy, toxicology, and cultivation. Bring your collections to our identification table for a free ID! The Fair will be held at the Oakland Museum, Natural History Section, 10th & Oak Streets, Oakland, CA. For additional details, see the MSSF website.

Great news . . .

Welcome Back, Tom Volk! And finally, it was great to see Tom Volk at a recent fall foray sponsored by my home club, the Wisconsin Mycological Society. In spite of the waterlogged conditions, Tom was climbing hills with renewed energy—thanks to his new heart—in a way reminiscent of a teen-ager. I know I speak for all of us when I say that I'm looking forward to seeing more of him at future forays.

And sad news . . .

Elsie Louise Knighton, 88, passed away Oct. 21, 2006 in Portsmouth, Ohio. A native of Portsmouth, she was born April 2, 1918 to the late Joseph Webb and Frances Mae Hudson Webb. Elsie was preceded in death by her husband Harry S. Knighton on May 26, 1999.

Harry, founder of NAMA, and Elsie were very active members of NAMA and organized many of the annual Forays. Elsie was secretary of NAMA for many years.

Canada Foray, cont. from page 1

from University of Alberta (president of the Edmonton Society) and Leonard Hutchison of Lakehead University in Ontario. The fungi were so numerous that many knowledgeable attendees also pitched in to help identify and record the specimens. Hope Miller was in attendance, to the delight of all, and helped with the recordings.

Hope brought along a large stack of Dr. Miller's and her newest book and held a signing. There was a rush to purchase the available copies for her signature.

Martin Osis, our Edmonton coordinator. Photo by Maggie Rogers.

The programs and seminars offered the usual wide range of topics, this time with special emphasis on northern boreal and high elevation habitats.

I think a lot of the audience was surprised by the tenacity and abundance of fungi in some rather austere habitats—above treeline, near glaciers, and other very non-fungal appearing habitats. The lead-off program Thursday night was about a local Model Forest Project and study by a multitude of resource users, investigating how resources can be extracted without harming the wildlife or upsetting nature's balances. Methinks that information should be widely distributed *and implemented* by the parallel agencies in this country.

The Trustees' Meeting was enlightening. Three new affiliated clubs were recognized and welcomed: Kenai Peninsula Mycological Society of Soldatna; Bay Area Mycological Society of Oakland;, and Myco Aficionados of Mexico in Tlaxcala. All the groups had had interactions with NAMA beforehand but are now truly affiliated. Welcome!

Allein Stanley. Photo by Maggie Rogers.

We shared a moment of silence remembering the lives of Dr. Bill Cibula and Dr. Orson K. Miller, Jr.

The Mushroom Dyers committee expressed a need for a wider variety of new supplies of dye mushrooms. They would like to ask all those who find some of these special fungi to collect and ship

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FUNGI IN THE NEWS

The big news, of course, is the recent NAMA Annual Foray in Alberta. It was a lot of fun, and the food was probably the best I've enjoyed at any foray. The scenery was incredible, the mushrooms abundant and diverse, the wildlife amazing (while there or on the road, my family saw every major large mammal species in North America, including mountain lions), and as Martin promised, there were no bugs! I could go on and on, but other space within this issue is devoted to reviews of the foray. However, I would like to personally thank all the members of the Edmonton Club for the hospitality, and especially to those members who were camping with my family at Cache Percot. Thanks for the great stories around the campfire. And thanks for tolerating the late night antics of some of us—you know who you are!

From the *Daily Telegraph* in England comes one more reason to disdain those pathogenic Oomycetes. In England horse chestnut trees are being attacked by what could be the severest threat to an arboreal species since Dutch elm disease. Many trees in southern England that were already suffering from the effects of European leaf miner moths, which attack horse chestnut leaves, now face a more serious problem: a new form of bleeding canker that causes lesions on the bark and can destroy the tree. As many as 10% of Britain's 500,000 horse chestnuts have been infected; an estimated 3,000 have died. Canker, which is caused by two fungi akin to potato blight, was long thought to be under control, with only four or five cases a year. However, as the new millennium began, the number started to soar, and it became clear that a new form of the disease had arisen. Although the pathogen is not specifically named in the article, my guess is that it is *Phytophthora ramorum.* This oomycete "fungus" was recently described in North America, where it was shown to cause of Sudden Oak Death (SOD), and it is now recognized as a serious threat to a wide variety of trees. A different strain of this pathogen is found in Europe. Investigations are ongoing, and the biology of the pathogen is still being worked out.

In the latest issue of the journal *Mycologia* (98[3]: 365–73) a team of researchers led by Paul Tooley, of the USDA at Fort Detrick in Maryland, has published the results of one such study. The paper, "Growth and sporulation of *Phytophthora ramorum in vitro* in response to temperature and light," sheds light on fundamental growth habits of this economically important oomycete. *Phytophthora ramorum,* recently found in the U.S., is causing concern for hardwood forests and the nursery industry. In an effort to identify some of the environmental limitations to growth and sporulation, the researchers conducted a laboratory study of four U.S. and three European isolates. On V8 media, isolates grew when incubated at a wide range of temperature and UV light conditions. *P. ramorum* tolerated a broad range of temperature and light conditions, which suggests why it is capable of establishment in a wide geographic area and is so adaptable—and such an invasive threat.

More news from the United Kingdom, this time from the *Daily Mail:* An exotic mushroom dubbed "the elixir of long life" could be the latest weapon in the fight against cancer. A group of scientists has found that extracts of the medicinal fungi *Phellinus linteus* can help in treating prostate cancer. Previous studies also have suggested that the mushroom extracts found on wild mulberry trees can be effective in treating liver, stomach, and lung cancer as well as other serious conditions. The rare mushroom, known as "Song gen" in China and "Meshimakobu" in Japan, has long been known for its medicinal properties. Sometimes marketed as "the elixir of long life," it has been used in Oriental medicine since ancient times.

Speaking of eating mushrooms . . . Be careful what you pick and ***where*** you pick them. An article by L. Cocchi *et al.* in the latest issue of the journal *Food Chemistry* (98[2]: 277–84), entitled "Heavy metals in edible mushrooms in Italy," warns of eating mushrooms contaminated with toxic compounds. In this study the distribution of arsenic, cadmium, lead, mercury, and selenium was investigated in 1194 samples of 60 species of common, edible mushrooms collected mainly in the province of Reggio Emilia, Italy. The quantitative determination of heavy metals (mg/kg dry weight) was carried out by spectrophotometry, with the exception of mercury, which was determined by atomic absorption spectroscopy. The amount of arsenic accumulated in the samples studied was generally modest. *Sarcosphaera eximia,* on the other hand, may contain arsenic concentrations reaching 1000 mg/kg dry weight. Within the *Agaricus* subgenus *Flavoagaricus,* only *Agaricus nivescens* contains amounts of cadmium inferior to the allowed maximum level. The cadmium levels in samples of *Amanita caesarea, Boletus edulis,* and *Boletus pinophilus* exceeded the maximum amount allowed. (Bad news for Italians—you know how fond they are of the porcini!) The content of cadmium in *Agaricus macrosporus* is roughly 50 times the maximum weekly dose recommended by the World Health Organization. The average amount of lead present in all samples was, in general, below the maximum allowed concentration. *Agaricus bitorquis, Agaricus*

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BOOK REVIEW

Common Edible and Poisonous Mushrooms of New York, by Alan E. and Arleen R. Bessette. 2006; Syracuse University Press. ISBN 0-8156-0848-9 (paper); 108 pp. $24.95.

The latest offering from NAMA members and prolific book-producers Alan and Arleen Bessette is a slim but attractive guidebook offering advice for those interested in eating the wild mushrooms of New York state while staying out of the emergency room.

A brief five pages of introductory material include mushroom basics, how to collect mushrooms for the table, how to make a spore print, and how to identify mushrooms using this book. This section is followed by a picture "key" to ten main morphological groups of mushrooms: boletes, chanterelles, corals, false morels, gilled fungi, giant puffballs, *Hypomyces,* morels, polypores, and toothed fungi. For each group, a one-sentence description is provided along with two example photographs and page references to the species treatments in the main text.

The bulk of the book comprises the species descriptions, separated into edible and inedible/poisonous ones. Typically, the treatments appear on a two-page spread and include a generously sized photograph. As we've come to expect from the Bessettes, the photos are uniformly excellent, showing the essential features in an attractive fashion. The text includes the scientific and common names, a list of key ID features, fruit body description, time and place of fruiting, edibility, and brief comments. Twenty species are featured in the edibles section and ten in the inedibles section. Additionally, 11 edible species are mentioned in comments and illustrated in the picture key at the front of the book. Two more edible species are mentioned in comments but not illustrated. Most of the species range well beyond New York state.

The book concludes with guidelines for preparing and eating wild mushrooms, a selection of seven illustrated recipes, glossary, list of recommended readings (of the ten, nine are by the Bessettes), and separate indexes to common and scientific names.

The strength of the book is its quality of presentation; it is well illustrated, attractive, informative, clearly written, and free of misspellings and typographical errors. However, it doesn't deliver enough to justify its price—only a bit over 100 pages (many of them half white space) and about 40 species covered, nearly all of which you would find in many existing guides. If you're an eastern mushroomer with at least a few books—for instance the Audubon guide and the Bessettes' *Mushrooms of Northeastern North America*—this volume will be largely superfluous. It will be most attractive to hikers and park visitors with a casual interest in mushrooms, or novice pot-hunters, perhaps as a gift for that friend of yours interested in joining you in your hobby.

—Steve Trudell
Seattle, Washington

Fungi in the News, cont. from page 4

arvensis, Agaricus essettei, Agaricus albertii, B. pinophilus, Clitocybe geotropa, and *Macrolepiota rachodes* had high contents of mercury that were within the range 5–10 mg/kg dry weight. Mushrooms in general, but species in the *B. edulis* group in particular, were rich in selenium. So it's not simply what you eat, but it's also where you pick it!

From the latest issue of *Mycological Research* (110[7]: 811–20) comes a paper by Marc Stadler *et al.* of Germany that looks at "Changes in secondary metabolism during stromatal ontogeny of *Hypoxylon fragiforme.*" Of course, *Hypoxylon fragiforme* is that ubiquitous crusty little pustule that occurs by the thousands on fallen trees and is likely one of the most common fungal fruitbodies found in the forest. Stromata of *Hypoxylon fragiforme* were studied during the vegetation period, and a number of chemical compounds were extracted and analyzed. Specifically, extracts were assayed for their nematicidal effects against the roundworm *Caenorhabditis elegans* and their antimicrobial activities against the bacteria *Bacillus subtilis, Yarrowia lipolytica,* and various filamentous fungi. The results confirmed data in the literature on broad-spectrum non-selective activities of secondary metabolites in biological systems. Most interestingly, laboratory cultures of *Hypoxylon* mainly produced dihydroisocoumarin derivatives, of possible interest to the pharmaceutical industry. The authors discuss the possible biological functions of secondary metabolites in the family *Hypoxyloideae.*

It's great to see *Mushroom the Journal* getting back on schedule. The summer issue was a treasure trove, as always. Especially noteworthy were articles on "Mushrooming around the World" (a lengthy tour of Tibet in search of the elusive caterpillar fungus), an "Existential Mushroom" (you'll never guess which one!), a photo essay entitled "Napolean as a Mushroom" and a great story by Bob Sommer on fairy

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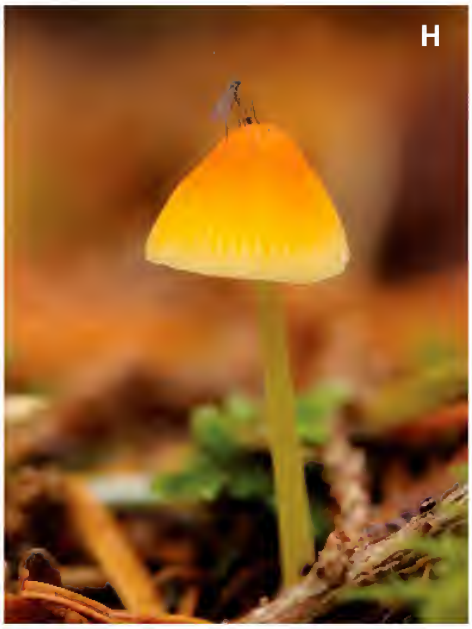
Digital Photo Contest Winners for 2006



On the Internet:
To view all the digital photos that won awards or honorable mention, go to http://photos.yahoo.com/namphocon and select the Photo Album entitled ***06 Awards.***

Documentary Awards

First Place:
Crucibulum laeve by David C. Work ..... A
Second Place:
Lepiota rachodes by Charles Fonaas ..... B
Third Place:
Phaeolus schweinitzii by Rich Mably C

Honorable Mention: *Craterellus fallax* by Noah M. Siegel; *Ascocoryne sarcoides* by Rich Mably; *Cantharellus cibarius* by Noah M. Siegel; *Calocybe carnea* by Noah M. Siegel; *Coprinopsis lagopus* by Donald F. Bryant; *Laccaria laccata* by Noah M. Siegel; *Lysurus periphragmoides* by Ron J. Meyers; *Agaricus* by Charles Fonaas; *Cortinarius* by Noah M. Siegel; *Spinellus fusiger* on *Mycena leptocephela* by Donald F. Bryant

Pictorial Awards

First Place:
Cortinarius vanduzerensis by Noah M. Siegel (see p. 1) ..... D
Second Place:
Amanita jacksonii by Noah M. Siegel ..... E
Third Place:
Young Polypore by David C. Work ..... F

Honorable Mention: *Clavulinopsis fusiformis* by Noah M. Siegel; *Marasmius siccus* by David C. Work; Reflections in a Mushroom by Robert L. Kaplan; *Amanita muscaria* pileus by Donald F. Bryant; *Flammulina velutipes* by David C. Work; Slime Taking Over the World by Noah M. Siegel; Spring Beauties *Morchella elata* and *Claytonia caroliniana* by Noah M. Siegel; *Trichaptum biformis* by David C. Work

Judges' Option Commendations

Leaf Impression in a Toothed Fungus by Robert L. Kaplan ..... G
Gnat on *Mycena aurantiodiscus* by Rich Mably ..... H
Siamese Twins by Ronald J. Meyers ..... J

Canada Foray, continued from page 3

Cathy Cripps of Montana State U with her husband, Don Bachman

them to the Chairs, Viola and Melanie Spock. Some regions of the country have more than others, and they would appreciate any that can be sent their way.

The Mycophagy Committee, headed by Ursula Pohl, also asked that members send her good dried specimens for the cooking session or bring with them to the forays. It is very difficult to collect enough in her area for such large groups, and her once abundant supply is depleted.

The Photographic Committee announced that, with the popularity of digital cameras and demise of film/slides, there is now only one category for slides, while the digital section is being expanded. Watch for a formal announcement and contest entry rules in January.

It was decided that previous years' MYCOPHILES will be available online at the www.namyco.org website.

Many other topics were discussed and will be published when the actual minutes are published.

At the general meeting on Saturday night, the recipients of the NAMA Awards were announced:

Contributions to Amateur Mycology

Dr. Michael Beug, Toxicology Chair, longtime member, professor (retired), mentor, and all-around great guy.

Knighton Award

Richard "Dick" Dougall of the Western Pennsylvania Mycological Society, for his teaching, identifying, and promoting the society in his region.

President's Award

Ann Bornstein, Membership Secretary, for her many years of service.

The official invitation to next year's Annual Foray was given. I hope to see all of you in 2007 at Pipestem, West Virginia. As for 2008? . . . Oddsmakers are betting on McCall, Idaho—Dr. Orson Miller's own stomping grounds! Watch for more information as plans develop.

—Judy Roger

Fungi in the News, continued from page 4

ring mushrooms. In Bob's article we learn the origin of the name *Marasmius oreades* and, more amazingly, we find out that there is downhill skiing in Kansas! Of course, there are also crosswords, word puzzles, Maggie Rogers, and numerous other reasons to pick up your own copy!

Minnesota Mushroom Poisoning—A tragic case of mushroom poisoning occurred recently in Minnesota. The state Health Department there reports that seven members of a Hmong community in the Twin Cities were hospitalized September 9 after eating poisonous mushrooms they picked in St. Paul's Keller-Phalen Regional Park. A 10-year-old girl died on September 15; two others were still hospitalized in intensive care as this issue went to press. All the other members of the family were recovering. Minnesota Mycological Society experts Ron Spinosa and Anna Gerenday were called to the hospital to identify a specimen that was brought in with the patients. The mushrooms were confirmed to have been that of the Eastern American Destroying Angel (*Amanita bisporigera*), which can easily be mistaken for nonpoisonous mushrooms, especially the paddy straw mushroom, *Volvariella volvacea*, popular in Southeast Asian cuisine. Anna recently told me that this case has kept her very busy, and she recently gave a presentation at a poison control center to help educate the public on identification of poisonous mushrooms.

GULF STATES MYCOLOGICAL SOCIETY WINTER FORAY
"In the Footsteps of Audubon"
NAMA REGIONAL FORAY December 1–3, 2006, in St. Francisville, Louisiana

Located on a bluff above the Mississippi River floodplain, St. Francisville has a long and colorful history. Once a burial ground for Spanish monks and later a major port between New Orleans and Natchez, it is now known for its history, close proximity to the Tunica Hills, and elegant antebellum homes. We plan to foray in the Hills and on the grounds of some of the homes.

John James Aububon spent 23 months in the area as a tutor and painted 80 of his North America bird folios here. The Oakley House, where he tutored, is the centerpiece of the Audubon State Historic Site. Geologically, St. Francisville lies on loess soil bluffs, which were created by powerful dust storms during the Glacier Period. It is botanically diverse and is the most southern location of morels along the Gulf Coast.

Foray headquarters will be the Best Western–St. Francis Hotel on the Lake, U.S. Hwy. 61 at LA Hwy. 10. Guest mycologists will be Drs. Patrick Leacock and Kentaro Hosaka, both with the Field Museum of Natural History in Chicago. Pat's specialty is the genus *Lactarius,* and Kentaro is an expert on the Hysterangiales, which include the stinkhorns, *Gomphus,* and various groups of false truffles. Both mycologists will give presentations and assist with mushroom identification

St. Francisville is located on Hwy. 61, about 60 miles south of Natchez, MS, and about 40 miles north of Baton Rouge. RV camping is available. The nearest airports are in Baton Rouge and New Orleans, LA, and Jackson, MS; major carriers serve them.

Registration is limited to 50 people and/or 35 rooms. Cost of the foray is $230 for a single or $155 per person for a double (total $310). These prices include registration, lodging, and meals except Saturday lunch. ***You must be a NAMA or GSMS member to attend.***

REGISTRATION FORM

Deadline for Registration November 22, 2006, or when rooms are filled.

Name(s) _____

Address _____

_____

City, State, Zip _____

Phone: (____) _____ E-mail: _____

Single ☐ Double ☐ Couple ☐ NAMA member ☐ GSMS member ☐

Name of preferred roommate(s) _____ Please find me a roommate ☐

Registration Fees

Single occupancy: $230 ..... $ _____

Double occupancy: $310 ($155 per person) ..... $ _____

I prefer King bed ☐ Two double beds ☐ Total ..... $ _____

Make checks or money orders payable to **Gulf States Mycological Society (GSMS)**.

Mail to **Patricia Lewis, RR 2 Box 194 L, Newton, TX 75966**. Questions? Call Pat at **(409) 423-3776 or e-mail <plewis@jas.net>**.

We will be traveling frequently until October 23, so expect late responses. Also, sorry in advance for not getting this into The Mycophile sooner.

The Production of Ink from the Spores of Fungi

by Rolf Singer

Many mushrooms produce spores with dark pigments that may be used for producing ink for calligraphy and printing. Species so employed are found in the genera *Lycoperdon, Bovista, Pisolithus, Polysaccum,* and *Scleroderma* among the Gastromycetes; also species of the Ustilaginea [rusts], Elaphomycetales [truffles], and even Myxomycetes [slime molds]. But until now no experiments have been carried out to study the serviceability and usefulness of such inks.

More than 100 years ago the French mycologist [Jean Baptiste François] Buillard [1752–93] recommended the dung-loving species of *Coprinus* [Inky Caps] for producing ink. Herein is reported the satisfactory results obtained using inks prepared from *Coprinus atramentarius* [the Alcohol Inky Cap] and *Coprinus comatus* [the Shaggy Mane or Lawyer's Wig], which are commonly found in gardens and other rich places.

In the Soviet Union many mushrooms with a cap possess interesting possibilities. *Coprinus* species have gills that are very close together and the edges of which are not perpendicular to the stem even upon maturity, and because of that the spores do not fall downward to be spread by the wind. Instead, the gills deliquesce or dissolve and become smeared upon passing animals, which spread the spores.

C. atramentarius and *C. comatus* are the largest inky cap species common in Europe and Asia. As an edible mushroom, *C. comatus* is good but it does not make as black an ink as *C. atramentarius*. Thus, this report will limit discussion to the latter.

C. atramentarius has a cap that is gray-brown, furry, with central flakes or scales upon the surface. The cap is striate and shaped like an egg or a bell 5–10 cm in diameter. The gills are at first white, then brown, and finally black and melted together. The entire cap becomes an inky liquid. The spores are ellipsoid 7.5–11 x 4.5–6.5 microns; the stem white and hollow; the inferior ring or annulus about the stem soon disappears. The trama or flesh of the mushroom is white to gray brown and without odor. It fruits in dense clusters from May to November. [This description abridges the technical diagnosis in the original].

With regard to making ink it is important to collect the mushroom before it is fully deliquescent and thus too old. On the other hand, if the harvested material is not developed enough, then the quality of the ink will be bad. One must filter the fungal liquid through thick mesh cheesecloth and then decant and discard the top clear layer of liquid above the dark residue of the spores. This separates the unpigmented material from the spores.

The inky deposit is quite gritty, and therefore one should add gum arabic to promote adhesion. [Historically, gum arabic— a water soluble gum obtained from several species of the acacia tree—was used to increase the viscosity of ink or to make it flow well, to prevent it from feathering, and to suspend the coloring matter.]

The native ink has two features: (1) it has an unpleasant smell, and (2) it tends to separate and form a hard precipitate. Therefore, in addition to gum arabic, a perfume such as clove oil is incorporated, which also helps preserve the ink. Before using a pen with a nib, shake the ink in the bottle.

Spore ink produces a pleasant black-brown color similar to Chinese inks. The ink may be saved for as long as eight years. As a natural science exercise, students could prepare ink for themselves for use in school.

Herbarium slides of spore prints are very stable, and the spore ink is permanent. The shape of the spores in the ink is constant, and it is easy to look at the paper with a microscope to confirm that a signature on an important document agrees with the original ink. Oxalic acid from sorrel does not destroy or bleach the pigment of the spores, and therefore spore ink ensures protection against forgeries employing detergents or acids to erase the writing. Indeed, inks produced from different mushrooms could be used as "fingerprints" to uniquely identify different writings.

Priroda [Nature] *No. 1 January 1938, pp 121–23. Translated from the Russian by Elena Sivan-Loukianova. Transcribed by Dean Abel (from* Symbiosis, *newsletter of the Prairie State Mushroom Club, and reprinted here with permission of the auth*or).

Ike's Message, cont. from page 2

Membership continues to be a concern; it stayed fairly level during the past year. I encourage each of you to talk about NAMA to your fungal friends and other members of your clubs. The more people involved in NAMA, the more we can grow and continue to promote programs and literature for the advancement of mycology in North America, not to mention that we'll just have more fun the more of us there are. —*Ike*

The Sommers in Costa Rica, cont. from page 2

with white flecks on the cap, a ring on the stipe, and a raggedy annulus. No need for a spore print. Our first response was a mixture of surprise that mushrooms like this existed in local woods (we had not seen them before) and satisfaction from making the correct identification.

Coming early in our mushrooming careers, our first foreign fungus foray to Costa Rica set a high standard. The trip was organized in 1986 by Manny Salzman of *Fungophile* with logistical support from the Organization for Tropical Studies. Experts were the *crème de la crème* of professional mycology—Rolf Singer, Greg Mueller, and Jean Love—plus faculty from the local university and major figures in amateur mycology—Gary Lincoff and David Arora. Also in the group was Sara Freedman, author of *Celebrating the Wild Mushroom;* mushroom historian Steven Thomas; one professional forager; two retired army colonels, three M.D.s; and a gaggle of Ph.Ds. As they say in New York City, everyone was there, and you should have been there, too.

Costa Rica promotes ecotourism, with more of its land in national parks and reserves than any other country in the world. At the conjoining of the Northern and Southern Hemispheres, Costa Rica contains fauna and flora from both. We encountered naturalists from fields we didn't know existed (when you met a young person carrying a notebook, you asked, "What's your critter?") and learned about tropical snakes, frogs, leaf-cutter ants, monkeys, and bats. David Arora and Steve Thomas led an after-dark expedition with flashlights and headlamps in search of nocturnal insects.

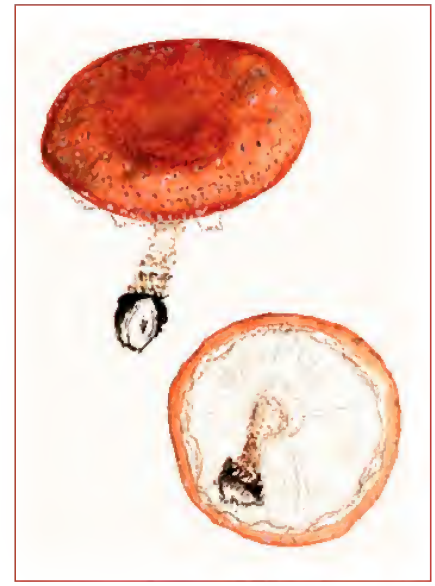
Best of all, from the standpoint of mushrooming, was that picking was legal, both in national parks and on private land. We stopped the bus alongside grassy fields, clambered over fences without fear of being shot, and gamboled through cow paddies in search of *Psilocybe cubensis.* We collected in dry tropical lowlands, in soggy rain-soaked woods, and in high cloud forests, ever respectful of habitat.

Memorable moments

• Discovering several new species and having the technical expertise in our group to make a preliminary determination.

• Observing interactions between experts by training (professional mycologists), experts by experience (noted authors of field guides), and advanced amateurs with expertise in other fields. Each had something to contribute to the ongoing dialog.

• Realizing that experts weren't the best mushroom finders. Lost in discussions of nomenclature and structure, they were more interested in one another than in nearby fungi, and name-dropping became a potlatch ceremony ("Here is my gift to you; what can you give me in return?").



Was this the first North American forest sighting of a Shiitake?

• Observing how professional mycologists used dehydrators to prepare herbarium specimens. Bob [Sommer], who painted watercolors of unusual mushrooms, had to rescue several models from the gas chambers. He painted a rare *Veloporphyrellus pantoleucus* he had collected [see page 2]; meanwhile, Rolf Singer impatiently paced outside the room demanding he surrender his model to science. Art was clearly a lesser activity.

• On the tree-studded lower slopes of the Poás volcano, Barbara's discovering what appeared to be a Shiitake (*Lentinula edodes*), possibly the first wild sighting in the Western Hemisphere of this choice edible.

• Meeting a young woman who drew blood from bats. Humankind was taking revenge! We saw her sweeping the forest floor with a broom at dusk. She repeated this ritual at dawn, each time counting the number of seeds within a defined grid. Her goal was to compare nightly seed dispersion by bats with daytime dispersion by birds.

• Seeing how easily a false rumor can spread in the mycology world. Nine years after the foray (!) a critical article appeared in a mushroom periodical purporting to describe habitat destruction by our group. The article was written by a person who had not been on the tour, and it was based on his discussion with another person who had not been on the tour.

• Exchanging photographs, sketches, collection lists, and recollections with other participants after we returned home. We have gone on other foreign forays since then, but Costa Rica remains the most salient because it came first. The trip greatly strengthened our interest in mushrooming. We never travel anywhere without David or Gary in the boot.

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Newsletter of the North American Mycological Association
THE MYCOPHILE

Mushroom of the Month

The Provincial mushroom for Alberta, *Leccinum boreale.* For details on the 2006 Summer Foray, dig into this issue. Photo courtesy of Ron Meyers.