



NJMA NEWS

THE OFFICIAL NEWSLETTER OF THE NEW JERSEY MYCOLOGICAL ASSOCIATION

Volume 35-6 November - December 2005



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Vice-President – Nina Burghardt
Secretary – Ania Boyd
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Send ONLY newsletter submissions to the editor. All other correspondence should be sent to the secretary:

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NEW MEETING PLACES!

Don't forget that our Holiday Party, January 2006, and February 2006 meetings will be held at the **Unitarian Society** on Tices Lane in East Brunswick.

Our March and April 2006 meetings will be held at the **Frelinghuysen Arboretum** in Morristown (off Routes 24 and 287)

CALENDAR OF UPCOMING EVENTS

Saturday, November 5 10:00 am **FORAY – Brendan T. Byrne State Forest** (formerly Lebanon State Forest) (led by Susan Hopkins)
With special guest mycologist, Jim Trappe

Sunday, November 6 2:00 pm **Meeting & Lecture at SCEEC**
Our first regular meeting of the season will feature a talk by **Dr. Jim Trappe**
“Trees, Truffles, and Beasts: How Forests Function”

Sunday, November 6 **NJMA Photo Contest Deadline** (see last issue)

Saturday, November 12 7:00 pm **NJMA Culinary Group Soup Supper**
at the Long Hill Rescue Squad, Gillette, NJ

Sunday, December 4 2:00 pm **NJMA HOLIDAY PARTY, Photo Contest, Meeting, and Election of Officers** at the Unitarian Society, Tices Lane, East Brunswick, NJ.
Registration required – see page 13 for details and directions

Sunday, January 8 2:00 pm **Meeting and Lecture** at the Unitarian Society, Tices Lane, East Brunswick, NJ.
John Dighton, Guest speaker

Sunday, February 12 2:00 pm **Meeting (Mycophagy)** at the Unitarian Society, Tices Lane, East Brunswick, NJ. (Format TBA)

Sunday, March 5 2:00 pm **Meeting and Lecture** at the Frelinghuysen Arboretum, Morristown, NJ
Speaker to be announced

Sunday, April 2 2:00 pm **Meeting and Lecture** at the Frelinghuysen Arboretum, Morristown, NJ
Walt Sturgeon, guest mycologist, will present
“Just For The Smell of It”

Directions to SCEEC (Somerset County Environmental Education Center) – (908) 766-2489

Route 287 to Exit 30A (North Maple Avenue/Basking Ridge). Follow North Maple Avenue as it heads left and becomes South Maple Avenue in town. Follow South Maple Avenue past Lord Stirling Stables. Go left on Lord Stirling Road. SCEEC is about a mile in on the left. Park in the lot, NOT in front of the building. Meetings start at 2:00 pm. Beverages are provided. Please volunteer once in a while to provide snacks (home baked preferred).



PRESIDENT'S MESSAGE

I would like to start off by welcoming Nina Burghardt as our new Vice President. Nina has shown unmatched dedication to NJMA in so many areas of club interest, most notably for her excellent work in handling arrangements for last June's PEEC Weekend. Let's all welcome Nina to our club leadership – I'm sure she'll be a fine addition during this period of change.

Speaking of change: After meeting at the Somerset County Environmental Education Center for many years (almost since the club's inception), we, the NJMA Executive Committee, have decided to move our regular meeting for the December 2005 and all future meetings to two new venues: The Unitarian Society on Tices Lane in East Brunswick, and the Frelinghuysen Arboretum in Morristown. Our November 6th meeting (with special guest Jim Trappe...see additional article for info) will be the final meeting we hold at SCEEC. Our December 2005, January 2006, and February 2006 meetings will be held at the Unitarian Society, and the March 2006 and April 2006 meetings will be held at the Frelinghuysen Arboretum. Also, Fungus Fest will be held at Frelinghuysen for the next several years. All of us on the executive committee are excited about the change, and once we've held meetings at both new venues, we want to hear from you as to which you prefer. (And, I can't go without giving mega-thanks to Ania Boyd, Gene Varney, Susan Hopkins, and Dorothy Smullen for helping to make this transition as smooth as possible.)

Why the change? Well, to be frank, over the years we've spent at SCEEC, the costs for renting the room and holding Fungus Fest there have gone beyond our budget, to the point where we actually are losing money to meet and to hold Fungus Fest there. Secondly, I have felt that it would be beneficial to move some of our meetings to a more central location to help us attract our South Jersey members to regular meetings. Thirdly, parking has always been a problem at our present location (especially for Fungus Fest). And lastly, we can't help but be excited by the little "boost" we'll get for holding Fungus Fest at Frelinghuysen. In addition to our own promotional efforts for Fungus Fest, the Friends of the Frelinghuysen Arboretum will provide parallel promotion for it in their newsletter, which goes out to thousands of their members and friends.

I'm sure all of us have a little trepidation about moving away from our traditional "home", but in the long run, I truly feel that this is a wonderful change toward growth for the NJMA. We must remember that we are a state-wide organization, and holding a few meetings closer to where members from all over the state will find it convenient to attend meetings and events is a very posi-

tive step. In addition, moving Fungus Fest to Frelinghuysen opens a new vista of possibilities, since Frelinghuysen has such glorious facilities and grounds for an event such as this. The promise of being able to conduct walks through their pine forests, deciduous forests, meadows, lawn areas, and groomed gardens will offer our visitors and members a variety of mushrooming experiences, and the large open auditorium will give us room to spread out and to, perhaps, add to or revamp the entire presentation of the event.

I look forward to meeting each and every one of you at any of our meetings in our "new homes", and as always, I *want* to hear from you with your ideas and suggestions to keep improving the NJMA experience! My ears are open... feel free to call me at 908-362-7101, or email me at jim barg@bssmedia.com.

Happy winter! And let's hope the drought that plagued us this past summer is history that is not to be repeated!

– Jim Barg

FUNGI TO FIGHT MALARIA?

The August 15, 2005 issue of *Science News* had an article about using fungi to kill the malaria mosquito.

This article summarized several studies on the subject. The fungi mentioned in the research were *Metarhizium anisopliae* and *Beauveria bassiana*.

These fungi killed 90% of the mosquitoes in 14 days.

The mosquitoes that survived had a marked reduction in their capacity to spread malaria. Fourteen days is important because it takes that long for the malaria parasite to reach maturity so it can spread to humans.

Both of these fungi have previously been used in agriculture and are less dangerous to humans than chemicals. The drawback is that the fungi only remain alive for three weeks. The fungus-based insecticide should be ready in three to five years.

If you want to read more about this, look up *Science News*, vol. 168.

ON FUNGUS FEST, AND...

by Alex Adams

To all who made life at Fungus Fest for me a bit short of fatal, my gratitude. I will go whole hog for best result on whatever tasks I take on there, and some of you helped me do well and also avoid some awshits.

Specifically, I can remember through the fatigue and haze of sleep deprivation, the following incomplete list:

Mike Mudrak for his steady helpfulness at the log workshops, even to the point that I think he could do all the teaching (and enjoy it) if I lost my voice. And for remembering that getting started was what got 'em swarming last year. You could say "duh!"; but I was too far into the trees to see that forest.

Glenn (Freeman), Susan, and Ania for helping with the mycology end of the trail setup.

Ania Boyd and Phil Layton (of Terri) for relieving me, Glenn, and Susan of the hammer work so we could even beat our harsh taskmaster Glenn Boyd's deadline for setup ... and no matter that the first walk got put off to 11:45, we beat the deadline.

Glenn Boyd for sending an extravagant six of us out to do trail setup... who'da thunk it, that might be the perfect crew size, it all seemed to click perfectly and, in my humble opinion, should be repeated next time if still need speed on that task.

Nancy Haslam for steady help and nurture of Alex the Weary so I made it through the day in one piece. And for her tireless work and helpful reminders. And that damned fine pizza.

I do well at projects with defined goals (have said I can stand the world on its head with the right resources) and not well at org tending, so am glad to leave those jobs to them what are OK with doing that and they also get my thanx. NJMA is one of a very few orgs I know with so many people assets. One other is the FolkProject.org, and if you like any sort of music that can remotely be called folkish, give it a try. No, you haven't heard of the vast majority of them; for they are a class of very talented but little-noticed musical performers who also give much for little \$\$ reward, mostly for love of what they're doing. Sounding familiar somehow? Whatever it is, you can count on this: It's high quality. Maybe not your cup o' tea, but fine musicianship. And so you aren't local to Morristown? From their website, look up other venues and find one in yer own bailiwick. Avoid getting sucked into the TV, it's tubular and only two-dimensional. Go into the woods. And when it gets dark, go to music. Or whatever winds your clock.

Likewise at NJMA, we get and do and are a mixed bag, but just the presence of all those smart people doing good and having fun is draw enough. So many of the 'old hands' are still patient for the novice's question and each encounter is novel. Yay for NJMA.

NOVEMBER FORAY AND MEETING WITH DR. JIM TRAPPE

by Susan Hopkins

World renown truffle and hypogeous fungi expert Dr. Jim Trappe will be visiting us here in New Jersey on November 5 and 6. He will be joining us on our foray to Brendan T. Byrne State Forest (formerly Lebanon State Forest) in the New Jersey Pine Barrens on Saturday November 5. We will meet as usual at 10:00 am at the Pakim Pond picnic area parking lot. Around noon, we will return to the picnic area for lunch and to look at and identify what we have found. After the foray, at about 1:30, those who are interested may drive with us over to Medford Leas Retirement Village for a more in-depth look at our finds with the help of some microscopes and Dr. Trappe's expertise. Jane Bourquin, a resident of Medford Leas and NJMA member, has reserved a room for us to work in. If you plan to join us at Medford Leas, please bring the following if you have them: a regular microscope, a dissecting scope, hand lens, and a copy of "How to Know the Non-gilled Mushrooms" by Alexander Smith, Helen Smith and Nancy Smith Weber. We are hoping to find several species of hypogeous fungi including the genus *Rhizopogon*, which has been collected at Pakim Pond in previous years. At the Rancocas foray on October 2, several fruitbodies of two species of *Rhizopogon* were found when four of us went back to where Terri Layton and Marc Grobman had found the original two. These have been dried and kept for the workshop in case we do not find any more – but after the recent rains we should find fresh ones to look at.

On Sunday November 6, at the Somerset County Environmental Education Center, Dr. Trappe will lecture and show us about his current work studying the truffles and hypogeous fungi of Australia and the Pacific Northwest Cascade Range of Oregon where he lives.

ALEX'S SHIITAKE WORKSHOP

For all who might have pined away at Fungus Fest to drill, fill, and chill with your own Shiitake log, the November meeting at SCEEC will be the time to do it. For a measly \$10 (4 dozen decent eggs) to cover his expenses, Alex Adams will provide all the materials, tools, and logs (plus music and wry commentary) you'll need.

Make your reservation now by sending a check for \$10 (payable to Alex Adams) to: **Alex Adams, 19 Oak Avenue, Denville, NJ 07834.**

The plan is to do logs from 12:30 to 2:00 pm, then meet and talk truffles with Jim Trappe. The number of drillers is limited to eight, unless we do something like work in twilight or later at his house.



EDITOR'S MESSAGE

I thought it might be of some interest for you to get some idea of what goes on behind the scenes and what is necessary to get the newsletter that you are reading to you.

As editor, my job is to select the material that will appear in each issue. For each issue there are precedents as to what needs to be included: the Calendar of Upcoming Events, a message from the President (and usually one from the editor), reports on NJMA activities of the past two months, pre-foray reports during the collecting season to prepare the members as to what to expect at the foray site (flora, topography, special features, and typical fungi of the area – to give the avid forayer a chance to research further and be one step ahead of the group in identifying the mushrooms that are collected), the list of members, the Foray finds for the year, etc., etc., etc.

Once these items are taken care of, there is the new material to be added. Hopefully, this will be made up from articles from members. For instance, the Rod Tulloss article in this issue, past articles by Ania Boyd, Terri Layton's tongue-in-cheek foray reports, and promised future articles by Marc Grobman on collecting (which will be featured in NJMAnews 36-1, 36-2, and 36-3). And since there is a lot of great material in other club newsletters, we add them as space allows.

As the material accumulates, I forward copies of emails or material that I have scanned, to Jim Barg (the Art Director of this publication, as well as president of NJMA) and he puts all into order for printing (the biggest job in this whole process, and the reason that the newsletter looks so much better now than it ever has...nothing like using a professional to get the job done right). After some exchanges of emails between Jim and I and Dorothy Smullen (who proofreads the articles to make sure technical terms are correct and scientific names are italicized, etc.), we finally decide that all necessary corrections have been made (yes I know - we sometimes miss one! And sometimes we have to make a judgment call as to how much editing to do without changing the "voice" of the writer) the final copy is sent as a PDF on a CD-ROM to Susan Hopkins who gets it to Peter the Printer, who prints it, and then it goes back to Susan who then applies the address labels and stamps to the finished product and gets them to you.

That is a very brief summary of what happens.

As you can see, it is a time-consuming process, which is why we are sometimes later than we would like to be in getting the current issue to you. But, there is always a "safety-net". We let you know at the beginning of the

collecting season where and when all forays will take place so you can put them on your calendar. We always let you know two months ahead when lectures are scheduled and who will be speaking so you can pencil them in as well. And, we try to get your newsletter to you at least one week ahead of the first scheduled event on that issue's Calendar.

To speed things up, please send all submissions for the newsletter to me either by email to jimrich17@netzero.com (no dash) or by snail mail to Jim Richards, 211 Washington Street, Hackettstown, NJ 07840-2145, by the deadline (the 10th of even-numbered months.)

If you have any suggestions as what you would like to see in NJMAnews to make it work better for you, please send them to either of these addresses.

And thanks to everyone who has sent articles or photos - without your contributions we would not have become one of the most respected mushroom club newsletters. (I get feedback from other editors, and it's all good!)

– Jim Richards

ARE YOU A MYCOHOLIC? TAKE THIS TEST AND FIND OUT!

by Scott Stoleson

Reprinted with permission from *The Kansas Mycologist* via NAMA's *The Mycophile*, July/August 2005

Most of our members are "social shroomers." They come to several forays each year to pick edibles and increase their knowledge, but mainly just to get out into the woods on summer and fall days and socialize.

But there are some among us to whom mushrooms are no longer just a casual interest or an enjoyable warm-weather hobby, but rather a compulsion, an obsession. Such people will be out picking on sweltering August days and in freezing December weather. During peak season, they will be shrooming not just on scheduled forays, but two, three, or more times a week. These people are mycoholics!

Mycoholism is a serious problem that is spreading its mycelia throughout our society. It isn't a problem confined to the poor and underprivileged or to recent immigrants from Eastern Europe. Mycoholics come from all walks of life: lawyers, production managers, doctors, antique dealers, garden-clubbers, physiologists, chemists, students, farmers, housewives – anyone can become a mycophilic.

There are a few clues that differentiate a mycophilic from a casual collector. For example, in their cars they have a six-month supply of waxed paper bags in the back seat and dried up *Tricholomas* in the ash tray. They wear little or no jewelry except a hand lens around the neck. While these traits do not automatically condemn someone as a mycophilic, they are among the warning signs to watch for.

(continues on next page)

Are you a mycoholic? Not sure? Then you'd better review some of the following warning signs. (Score 1 point for each "yes" answer.)

- Do you pray for rain?
- Does your heart beat faster when you see a stump?
- Do you salivate upon hearing "morel"?
- Do you abandon guests, family, or business, just 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*?
- Is your temporal framework modified?
- Do you no longer think of the seasons as spring and fall but as "morel" and "honey"?
- Do you find yourself used to eating or even expecting to eat such items as dirt, 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 one. Do you mind if I take it home to study?"
- Is your idea of eroticism a *Phallus ravenelii* (Ravenel's Stinkhorn)?

Here's an interpretation of your scores:

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

Just what are the dangers of mycoholism? Besides the obvious deleterious effects on the social, home and business life, this disease has very real consequences as well. Mycologists, in addition to their tendency to have a sore head from walking into things because they always look down instead of head-up, frequently suffer from a number of physical infirmities that are a direct result of their habit of stooping, bending, kneeling, tugging, lugging, and picking. These include *Entoloma* elbow, *Dentinum* disk, *Naematoloma* neck, *Trich* knee and, with some, a *Gymnopilus* glaze in the eyes.

There are some mycoholics whose all-too-frequent Bolete binges have reduced them to physical wrecks. These people keep coming to forays, often dragging pillows on which they can ease their aching frames after a frantic fungal frolic.

So, what can be done for a 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.

CULINARY GROUP: NOVEMBER 12 SOUP SUPPER

On Saturday, November 12, the NJMA Culinary Group is planning a return to a very popular dinner theme. Several times in the past, we have had Soup Suppers which were always very popular. Since we have not had one in a long while, and since every response to an email asking for suggestions for the theme of the next dinner listed Soups as either their first or second choice, we felt that it was a good time to revisit an old favorite.

We will have appetizers to begin with, then an array of soups and breads, and then we'll finish with desserts.

If you have any favorite soup recipes that you would like to share with the group – now is the time! So far we have the following soups being prepared by attendees: Krupnik (a mushroom-barley soup), a Stilton and Cheddar soup, Miso soup with Morels, Madrai Tomato Soup, and a Bean and Sausage Soup. We still have room for a couple more soups, and we need appetizers, breads and desserts (an Apple Crisp is already on the menu.)

There are still a few spaces left, so contact us quickly. You don't want to miss this one!

The NJMA Culinary Group meets several times during the year to enjoy good food and great company. These are not potluck events, but are based on planned menus. The cost of ingredients is split equally by the participants. Diners should bring their own dinnerware, utensils, beverages (except coffee and tea which are supplied), as well as whatever is needed to serve their prepared dish(es). Each culinary group event is limited to 30 people.

To register for the dinner or for more information please contact John Horvath (732-249-4257) email: johnterryh@worldnet.att.com, or Jim Richards (908-852-1674) email: jimrich17@netzero.com





FORAYERS' JOURNALS

BRENDAN BYRNE STATE FOREST – SEPTEMBER FORAY REPORT

by Nina Burghardt

On September 10, NJMA went to Brendan Byrne State Forest (formerly known as Lebanon State Park.)

Bill Olson, the foray leader, had already checked out Pakim Pond and had not seen a sign of a fungus. We then got into our cars and drove down the road to a cedar-sphagnum area. These are not the 'cedars' we have in our backyards, which are small, prickly juniper trees. These are the tall, graceful Atlantic White Cedar, which were abundant on the east coast until they were cut down for charcoal. The sphagnum was moist and springy with quite a few unusual fungi. These proved hard to identify. We opened every book, smelled, poked, and prodded until we came up with a few names. The unidentified fungi were bagged up and taken to Cheesequake the next day for further identification.

Except for the chiggers, we had a great time.

"PEBBLES" AT RANCOCAS FORAY

by Terri Layton

No significant rainfall for the last two months has really taken a toll on the poor trees, plants and, in fact, all of us. Nevertheless, nine diehard mushroomers showed up at Rancocas in Mount Holly to see what we could find on a dry, sunny, hot day. Alas, we ended up with 27+ genus-es! Included were some cute little tiny fleshy fungi and amanitoids. Some found *Laetiporus sulphureus* (Chicken mushroom) and *Armillaria tabescens* (Ringless Honey Mushroom). Of course, there were lots of polypores, which most of us pass by when there are plenty of gilled mushrooms. Rancocas is a small Audubon natural preserve with nice easy trails and couple of ponds, so even during a drought you can find mushrooms. There is also a small hemlock forest, which may be good for *Boletus edulis* given the right conditions.

The big find of the day was a little somewhat round smooth thing that looks like a pebble ranging .5 cm to 3 cm across. They look similar to puffballs in shape, color, and size, and grow in shady/moist/mossy areas on poor soil. Can you guess what it is? OK, three more hints:

1. Susan Hopkins gets REALLY, REALLY excited.
2. Not a dyeing (coloring) mushroom.
3. Somehow/somewhat related to truffles.

Give up? It's the genus *Rhizopogon*! (see photo on back page)

If you didn't guess right, you haven't spent enough time with Sue lately. Ever since I've known Sue (three years now), she's been asking us to look out for *Rhizopogons*.

I might also add that Sue never fails to mention truffles in the same breath, which gets everyone's attention. I don't think *Rhizopogons* are edible, let alone taste like truffles, so I am not sure where or if there is a similarity. Sue: if you're reading this – we are on to you! (Editor's note: *Rhizopogons* are not really truffles since they are basidiomycetes – truffles are ascomycetes.)

Anyway, I think genus *Rhizopogon* means "bearded root" in Greek. I did notice few hairy roots, but not an excessive amount. Sue, of course, was very excited about Marc's (a relatively a young member, but not young) and my (much younger than Marc) find. So after the identification session, the four musketeers (Bob Peabody, Sue, Marc, and I) backtracked to get few more specimens and to check out the habitat. Needless to say, Sue was much excited and bent my ear about the life cycle, species, evolution, and functions of *Rhizopogons* all the way to the site. In fact, my fingers started to cramp up from trying to write them all down, and I almost went down face first on a dirt path few times while walking and writing simultaneously. Thankfully, I ran out of paper before anything ugly happened to me.

Here is a short, non-technical version of what I learned from Sue: Apparently there is a retired professor out in Oregon who has received a grant from the federal government to study these pebble-like things to figure out an existence/nature of a relationship between spotted owls and these pebbles. What? Spotted Owls? It goes like this: These pebbles are eaten by certain pebble-eating rodents who are then eaten by the Spotted Owls (sounds like something out of old Kung-Fu TV series – Grasshopper who must snatch pebbles, etc.) Some of you are probably horrified by my technical descriptions or lack thereof, but I don't claim to be a brainy mycologist/biologist (you know who you are) so I deserve a little slack.

If you insist on a technical version, lucky for all of us, this professor, Dr. Jim Trappe, is coming out to NJMA in November to tell us all about it. Apparently Sue's been trying to him out here for the last two years and he finally agreed. Sue is happy that we have one more site and more specimens to show him to make his trip worthwhile. Don't miss the lecture!

I confess that sometimes I tend to stay away from certain forays when a foray coincides with dry spells. The last thing on my mind as I drove to Rancocas was that I might help (?) Spotted Owls and make Sue happy. If there had been enough rain and consequently/hopefully enough mushrooms, surely I would not have cluttered my basket with these not so attractive pebbles so I would have room for more beautiful, interesting, head-turning, or edible fungi. It goes to show you, you never know. The moral of the story is: **Do show up and make a difference!**

P.S. Sue, Thank you for your enthusiasm. It's contagious.

AMANITA – BEAUTY, DANGER, AND DIVERSITY – ALMOST EVERYWHERE

by Rodham E. Tulloss

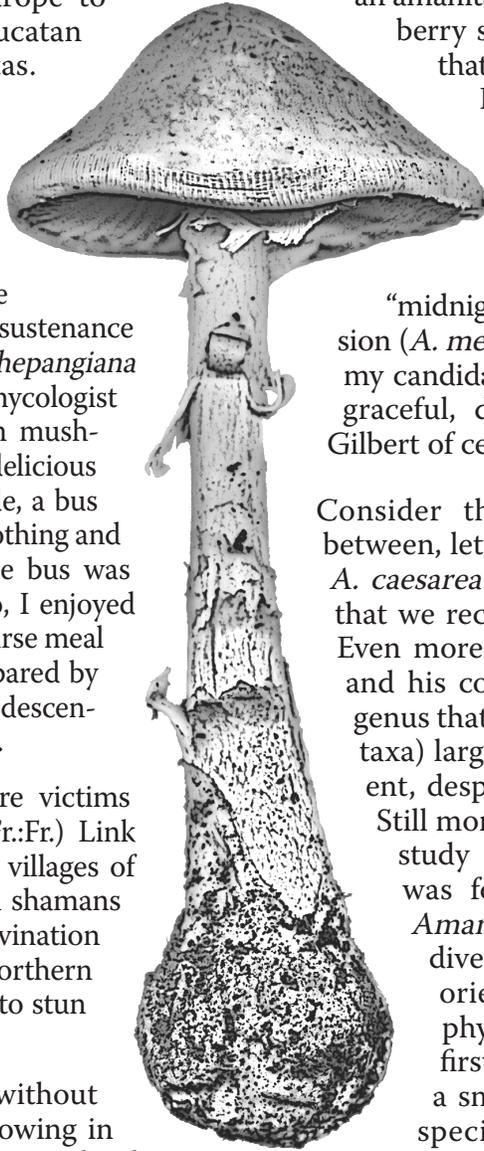
From the most northern regions supporting miniature willow and birch to Tierra del Fuego, off the southern tip of South America, there are amanitas. From the North American western high altitude desert to the Argentine Pampas to the highest places where ground-hugging willow grows in Europe to sand dunes on the coast of the Yucatan Peninsula of Mexico, there are amanitas.

In market places there are amanitas. Species of *Amanita* Pers. form a significant component in wild mushroom commerce in many countries around the world. There are amanitas on which whole populations of the Chepang people of Nepal depend for sustenance during certain periods of the year (*A. chepangiana* Tulloss & Bhandary). The American mycologist David Arora has told me of an African mushroom (*A. loosii* Beeli) considered so delicious that, seeing them for sale by the roadside, a bus full of people made containers of their clothing and filled them with the delicacy before the bus was allowed to proceed. In Tlaxcala, Mexico, I enjoyed amanitas in several dishes of a fifteen course meal with wild mushrooms in every dish prepared by Nahuatl-speaking indigenous people — descendants of the Aztec's next door neighbors.

In hospital emergency rooms there are victims seriously poisoned by *A. phalloides* (Fr.:Fr.) Link and *A. bisporigera* G.F. Atk. In remote villages of the Kamchatka Peninsula, there are still shamans who use *A. muscaria* (L.:Fr.) Pers. for divination and curing illness; and, around the Northern Hemisphere, similar taxa are employed to stun or kill flies in human habitations.

There are amanitas in grasslands without woody plants. There are amanitas growing in ancient oak forests under branches weighted down by epiphytes. There are amanitas growing with legumes and eucalyptus. There are easily exportable amanitas (e.g., *A. muscaria* and *A. phalloides*). There are amanitas restricted to very specific environments (e.g., *A. friabilis* (Karst.) Bas). There are “gasteromycetous” amanitas that have given up on actively dispersing their spores — the few species of the genus *Torrentia* Bres. There are amanitas with normal spore dispersal, but which may grow almost entirely buried in sand (e.g., *A. cylindrispora* Beardslee). There are very small amanitas

with very large spores (e.g., *A. pachysperma* G.F. Atk.); and there are large, elegant amanitas with two annuli (*A. cokeri* (E.J. Gilbert & Kühner) E.J. Gilbert). There are amanitas with spores that are nearly round (e.g., *A. ceciliae* (Berk. & Broome) Bas) and amanitas with spores that are more than four times as long as they are wide (e.g., *A. roanokensis* Coker). There are amanitas with the odor of anise (e.g., *A. mutabilis* Beardslee), garlic (*A. alliacea* (Murrill) Murrill), and bread dough (*A. cinereopannosa* Bas); and there are amanitas with disgusting, penetrating odors (e.g., *A. nauseosa* (Wakef.) D.A. Reid). There is an amanita that stains the color of American raspberry sherbet (*A. mutabilis*), and there is one that stains a deep blue-green (*A. pelioma* Bas). There is a species in the Appalachian mountains, still an area very little explored for *Amanita*, that is a narrow-spored member of *Amanita* sect. *Phalloideae* (Fr.) Quél. that has been reported to have a “midnight blue” pileus in early stages of expansion (*A. mediinox* Tulloss *nom. prov.*). And there is my candidate for the most beautiful *Amanita*, the graceful, delicately pink *A. pudica* (Beeli) E.J. Gilbert of central Africa.



Consider the great difference in morphology between, let us say, *A. vittadinii* (Moretti) Vitt. and *A. caesarea* (Scop.:Fr.) Pers. Is it not remarkable that we recognize them as all part of one genus? Even more remarkable, perhaps, is that Persoon and his contemporaries saw them as forming a genus that has (with the exclusion of pink-spored taxa) largely remained unaltered up to the present, despite some disassembly and reassembly. Still more remarkable is the fact that, when the study of micromorphology came of age, it was found that all the diverse species in *Amanita* shared the unique combination of divergent lamella trama and longitudinally oriented, elongate, inflated cells (acrophysalides) in the stipe tissue. Today, the first indications from DNA sequencing of a small part of the genus indicate that its species indeed may have had a single common ancestor.

The genus *Amanita* occurs on all continents except Antarctica (and probably occurred there, too, along with dinosaurs and mycorrhizal trees like *Nothofagus*, during the Cretaceous). Excluding Antarctica, only South America is thought to lack any of the six sections of the genus; and, there, only one — *Amanita* sect. *Amidella* (E.J. Gilbert) Konrad & Maubl. — is apparently missing. All six sections are found in lands that were part of the great southern continent, Gondwana. All six

sections are likewise found in lands that were part of the great northern continent, Laurasia. *Amanita*, its two subgenera, and its six sections may all have a very long history. I don't remember seeing a recognizable *Amanita* in any of the recent films about dinosaurs. For the sake of accuracy, should the viewers have seen a tyrannosaur brutally stepping on an amanita? It is entertaining to speculate especially when one finds morphologically similar species in New Zealand and in Colombia, which also harbor morphologically similar "sibling" species in the Cortinariaceae and other groups.

Whatever their ancient history, the species of *Amanita* now are many and widespread. Perhaps, as was speculated in a recent email exchange between Dr. Bas and myself, there are as many as 1,000 species in the world. According to a count of published names taking known synonymy into account, Dr. Bas and I have come up with about 600 provisionally accepted, currently described taxa in *Amanita*; nearly 500 of these had species rank. Beyond these, certain species rich areas are insufficiently explored (e.g., south-central Asia, eastern Asia, the southeastern United States, and Mexico). In southeastern Canada and the northeastern United States, I have a growing list that includes approximately 200 probable taxa. About half are undescribed. In my home state of New Jersey, I have a list of over 100 species; and, again, half are undescribed. After working for a short time on amanitas from the southwestern U.S.A., Costa Rica, and Mexico, I have dozens of species in my notebooks that are very likely new to science and quite different from the more northern new taxa.

Among the sections of *Amanita* the one with the broadest distribution is *Amanita* sect. *Vaginatae* (Fr.) Quél. Several members of this section are found in the far north (e.g., *A. arctica* Bas, Knudsen & Borgen and *A. groenlandica* Bas ex Knudsen & Borgen). A probably undescribed member of the *Vaginatae* was found on Tierra del Fuego.

For a decade, I have been carrying out type studies in sect. *Vaginatae* and seeking the most reliable literature in an attempt to distinguish morphological groupings within the section. I recently traced on a map the geographic areas represented by some of the groupings that have been tentatively identified. Because I am not yet convinced that enough taxa have had their DNA sequenced in order to definitively justify segregation of *Amanita* sect. *Caesareae* Singer from the *Vaginatae*, I included the *Caesareae* in my experiment. The results were very interesting; many of the morphologically defined groups have clearly delimited geographic distribution.

For example, exannulate taxa with a pileipellis having an upper layer consisting of colored hyphae embedded in a colorless gelatinized zone have a strictly tropical

distribution: *A. crebresulcata* Bas (Amazonian Brazil), *A. dunicola* Guzmán (State of Yucatán, Mexico), *A. flammeola* Pegler & Pearce (east central Africa), and *A. sampajensis* Sathe & Kulkarni (southwest India).

A very beautiful group comprises the annulate species with umbonate pileus and robust volval sac—the "slender Caesar's mushrooms." I have called this group "stirps *Hemibapha*" because it includes *A. hemibapha* (Berk. & Broome) Sacc. There is a profusion of very similar taxa in this group in southeast Asia, Oceania, and Australia (*A. chepangiana*, *A. caesareoides* Lyu. N. Vass., *A. egregia* D. A. Reid, *A. hemibapha*) and a smaller cluster in eastern North America (e.g., *A. arkansana* Rosen and *A. jacksonii* Pomerleau) and Central America. The group is distinguished from *A. caesarea* (Scop.:Fr.) Pers. microscopically by having a subhymenium including one or two layers of cells instead of three or more such layers.

So far as is known, the "stirps" including *A. vaginata sensu auct. eur.* (excluding its varieties) is strictly Eurasian. The "stirps" including *A. mairei* Foley and another including *A. crocea* (Quél.) Singer and *A. flavescens* (E.J. Gilbert & Lundell) Contu are also Eurasian groupings.

Some taxa in the *Vaginatae* appear to have circumpolar distribution (e.g., *A. groenlandica*).

There are a few provisional groupings that have members in eastern North America and Europe. One of these might be called "stirps *Submembranacea*" which I propose would include *A. castaneogrisea* Contu nom. inval., *A. mortenii* Knudsen & Borgen, *A. sinicoflava* Tulloss, and *A. submembranacea* (Bon) Gröger. Another "trans-Atlantic" group is represented by *A. caesarea* in the Mediterranean region and a very similar taxon (*A. basii* Guzmán & Ramírez-Guillén) in eastern Mexico.

The Gulf of Mexico-Mediterranean connection is also seen in other sections of *Amanita*. In sect. *Phalloideae*, the European *A. gilbertii* Beauseigneur is strikingly similar to *A. cylindrispora* known from the Atlantic coastal plain of the U.S. from New Jersey to Texas; and both are well-adapted to semitropical, sandy environments. There is an undescribed species of section *Amidella* in eastern Mexico that is strikingly similar to the Mediterranean region's *A. ponderosa* Malenç. & R. Heim in Malenç.

As noted above, taxa from northern Australia (e.g., *A. egregia*) are often similar to taxa from southeast Asia or Oceania (e.g., *A. chepangiana*) very probably because of the relatively recent connection of the regions by a land bridge. On the other hand, some Australian taxa that do not have an obvious southeast Asian connection seem

(text continues on page 11, color photos on next page)

isolated within the genus (e.g., *A. illudens* Sacc., *A. murinoflammeum* Tulloss, Young & Wood, *A. punctata* (Clel. & Cheel) D. A. Reid).

In fact, in the current state of knowledge of the Vaginatae, only the slender Caesar's mushrooms seem to form a large, closely related group. Despite macroscopic appearances, *Amanita vaginata* and *Amanita fulva* (to take a European example) do not appear to be very closely related. If the current picture is unchanged by future research, *Amanita* section *Vaginatae*, which has seemed to comprise a set of taxa so closely related that they are difficult to separate, may be seen to derive from ancient lineage and be only a set of twigs distributed sparsely over long separated branches of a very large evolutionary tree.

In his thesis, Dr. Bas proposed trends in character states in *Amanita* evolution. Based on this schema, sect. *Vaginatae* would be a "young" section. If it is "young," imagine the antiquity of *Amanita* sect. *Lepidella* (E.J. Gilbert) Vesel? emend. Corner & Bas and, especially, its subsection *Vittadiniae* Bas, which Dr. Bas hypothesized as the most ancient extant branch of the genus. My naive speculation wanders deeper into the past and becomes lost in time.

Amanita subsection *Vittadiniae* is indeed a fascinating group.

Taxa in this subsection are known from very dry regions (e.g., high altitude plains of western North America) and very humid regions (e.g., the coast of the Gulf of Mexico). Many grow in regions where there are only herbaceous plants (e.g., the Argentine Pampas) or no obvious plants at all (e.g., desert in eastern Oregon and Idaho, U.S.A.). Apparently, some only occur after monsoon-like rains and in areas where there are few human observers. Perhaps, for these reasons, such taxa are thought to be rare.

In the North American literature, there are few mentions of collecting *A. prairiicola* Peck more recently than in the 1920's. But in the rainy season of the western Plains, I have had the good fortune to see this species and some of its relatives several times. The accompanying map (fig. 12) shows the states (light green) in which the species has been found and, within those states, the counties (orange) where collections were made. The habitat ranges from high grass prairie to high altitude desert to a street corner in Denver, Colorado. A single collection of this species from a planted area in Buenos Aires is probably a case of exportation by humans.

Amanita singeri Bas, a member of the *Vittadiniae* which was originally described from Argentina, is known from Argentina only by means of the two collections cited in the original description; however, the species has proven to be rather common in southern France and Italy. The holotype

apparently comes from a landscaped environment. The possibility that *A. singeri* is an Old World species that was exported to Argentina should be considered.

Before closing, I want to shift from distribution of groups and species to one example of how segregation of taxa might occur based on geology and climate change.

The affects of glaciation may have contributed to evolution of some taxa in *Amanita*. An example for which there is plentiful taxonomic and distribution data is that of *A. flavoconia* G. F. Atk. It has two named varieties. At present, the type variety is known from eastern North America north of the Mexican deserts and the vegetated area along the coast of the Gulf of Mexico that, at present, lacks appropriate ectomycorrhizal symbionts. *Amanita flavoconia* var. *inquinata* Tulloss, Ovrebo & Halling is known from Mexico south of the Mexican desert to Andean Colombia. The two taxa differ in color and spore shape.

In the map of fig. 13, the geographic separation of the ranges of the two taxa is striking. The dark green indicates states and provinces from which *A. flavoconia* vouchers could be located. The yellow-colored states include some appropriate habitat and may harbor the species, although no voucher has yet been identified. The habitat of the species (having mycorrhizal associates in the *Pinaceae* and *Fagaceae*) was repeatedly pushed south by glaciation — as though forests were rain periodically pushed from the windshield of a car by a windshield wiper. During at least some of the periods of maximum glaciation, there were corridors of suitable vegetation extending across the eastern end of the Mexican desert region; and species migration between the two, now separated regions, could have occurred. In the present interglacial period, the two varieties are apparently isolated from each other. Apparently there has been enough time in isolation from one another that the small differences have evolved.

The study of *Amanita* taxonomy is replete with problems and frustrations, but also bears rewards. The complexity of *Amanita* morphology is daunting, but full of possibilities for improving understanding and classification. The importance of the genus to humans — for food and commerce, for forest health, for traditional uses by indigenous peoples, for human health and safety, for mycotourism — is a spur to improving our knowledge. The beauty of *Amanita* species in their natural settings is an enticing and entrancing reason for studying them. The diversity and widespread distribution is fascinating. Because of an initial, naive interest in the genus more than twenty-five years ago, I searched out Dr. Bas' thesis and found an enduring model of excellence in monographic style and substance that inspired me to attempt research in mycology. It also happened that I met the author who, as mentor, intellectual companion, and friend, has so enriched my life.

What a wonderful genus!

WANTED

Amanita phalloides

THE DEATH-CAP MUSHROOM



DESCRIPTION: Cap is yellow-green/olive, may be yellow-white with olive hue, typically with innate darker streaks, 3.5-15 cm wide; free cream-colored gills; pendulous annulus; thin white membranous sac-like volva. Deadly poisonous. Further descriptions may be found at www.mykoweb.com or in David Arora's *Mushrooms Demystified*.

IF FOUND: Collect mushrooms and air dry or dry in a mushroom dryer at low heat. Record a detailed description of where, when, and under which tree species you found the sample. Include contact info.

SEND TO*: Benjamin Wolfe
Pringle Lab - Harvard University
16 Divinity Ave. - Biolabs 3100
Cambridge, MA 02138

The Pringle Lab is conducting a biogeographical survey of *Amanita phalloides* to determine whether this species has been introduced to parts of North America from Europe and the potential consequences of an introduction. For more info, please see our website:

www.oeb.harvard.edu/faculty/pringle

*Postage will be reimbursed.

OR email bewolfe@fas.harvard.edu or pringle@oeb.harvard.edu.



Holiday Dinner 2005

The NJMA requests the pleasure of your company at our annual Holiday Dinner, Photo Contest, and Election of Officers to be held at the Unitarian Society in East Brunswick on December 4, 2005 at 2:00 p.m. Please note this is a new location and **not** at SCEEC or the USET!

Please bring a favorite dish (sufficient to serve 8 to 10 people) for the buffet table. If you plan to bring a dish containing wild mushrooms you must get clearance for the dish from Bob Hosh, who is coordinating the buffet menu. You may contact him via e-mail at: **gombasz@blast.net** or by phone at **(908) 892-6962**. Dishes should be labeled to show ingredients and should arrive ready for the buffet table with serving utensils. All questions concerning the buffet menu should be directed to Bob. The club will provide beverages.

Please note that a donation of \$10.00 per person is required to help offset some of the buffet costs. In order that we may cater the party properly, please respond by November 28, 2005!

Directions to the Unitarian Society:

The Unitarian Society is near the corner of Tices Lane and Ryder Lane in East Brunswick.

From New Brunswick via Route 18: Take U.S. Highway 1 south, exit at Ryders Lane to East Brunswick, continue to the second light, and turn left onto Tices Lane. The Unitarian Society is the 2nd drive on the right before you go under the NJ Turnpike.

From the south via the Garden State Parkway: Take Route 18 north toward New Brunswick to Tices Lane exit (take jughandle from right lane of 18 across to Tices Lane). Follow Tices Lane until you pass under the Turnpike. The entrance is in the woods on the left just after you leave the underpass.

From the NJ Turnpike: take Exit 9 to Route 18. Take Rt 18 South to East Brunswick. On 18, turn right onto Tices Lane at the third traffic light. Follow Tices Lane until you pass under the Turnpike. The entrance is in the woods on the left just after you leave the underpass.

NJMA HOLIDAY DINNER REGISTRATION FORM

fill out this form, make your check payable to **NJMA**, and mail both, *before November 28*, to:

Bob Hosh, 24 2nd Street, Frenchtown, NJ 08825

Questions? Cell phone: **908-892-6962** E-mail: **gombasz@blast.net**

NAME(S): _____

TELEPHONE: _____ E-MAIL: _____

NUMBER OF PEOPLE ATTENDING _____

x \$10.00 each = \$ _____ (Don't forget to enclose your check for this amount)

I will bring sufficient to serve 8 to 10 people (please specify what you'll be bringing):

_____	Hors d'Oeuvres	_____	Meat casserole
_____	Vegetable casserole	_____	Green salad
_____	Potato or pasta salad	_____	Dessert

I will help with: _____ **Setup** _____ **Serving** _____ **Cleanup**

(Detach and mail)

NJMA NEWS

c/o Susan Hopkins

P.O. Box 291

Oldwick, New Jersey 08858

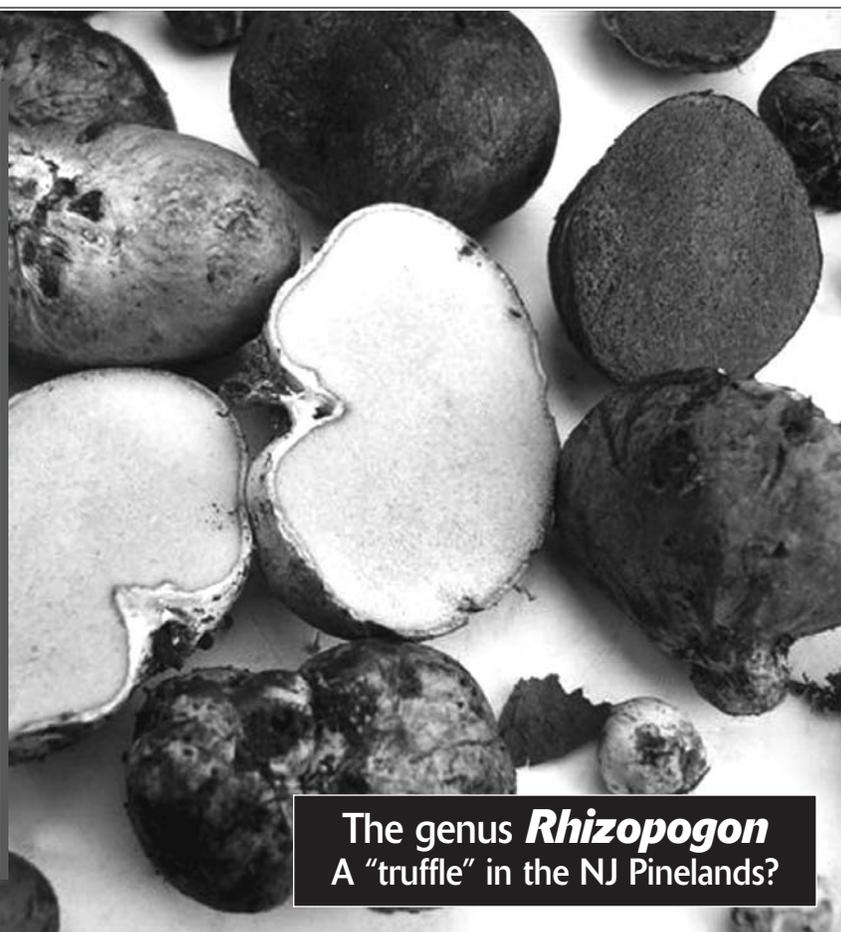
FIRST CLASS MAIL

In this issue:

- **AMANITAS**
- **JIM TRAPPE FORAY/LECTURE**
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- **BRENDAN BYRNE FORAYS**
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- **WANTED!**
- **NEW MEETING LOCATIONS**
- **SOUP'S ON!**
- **FUNGI AGAINST MALARIA**
- **TEST FOR MYCOHOLISM**

...plus much more!

PHOTO BY SUSAN HOPKINS



The genus ***Rhizopogon***
A "truffle" in the NJ Pinelands?