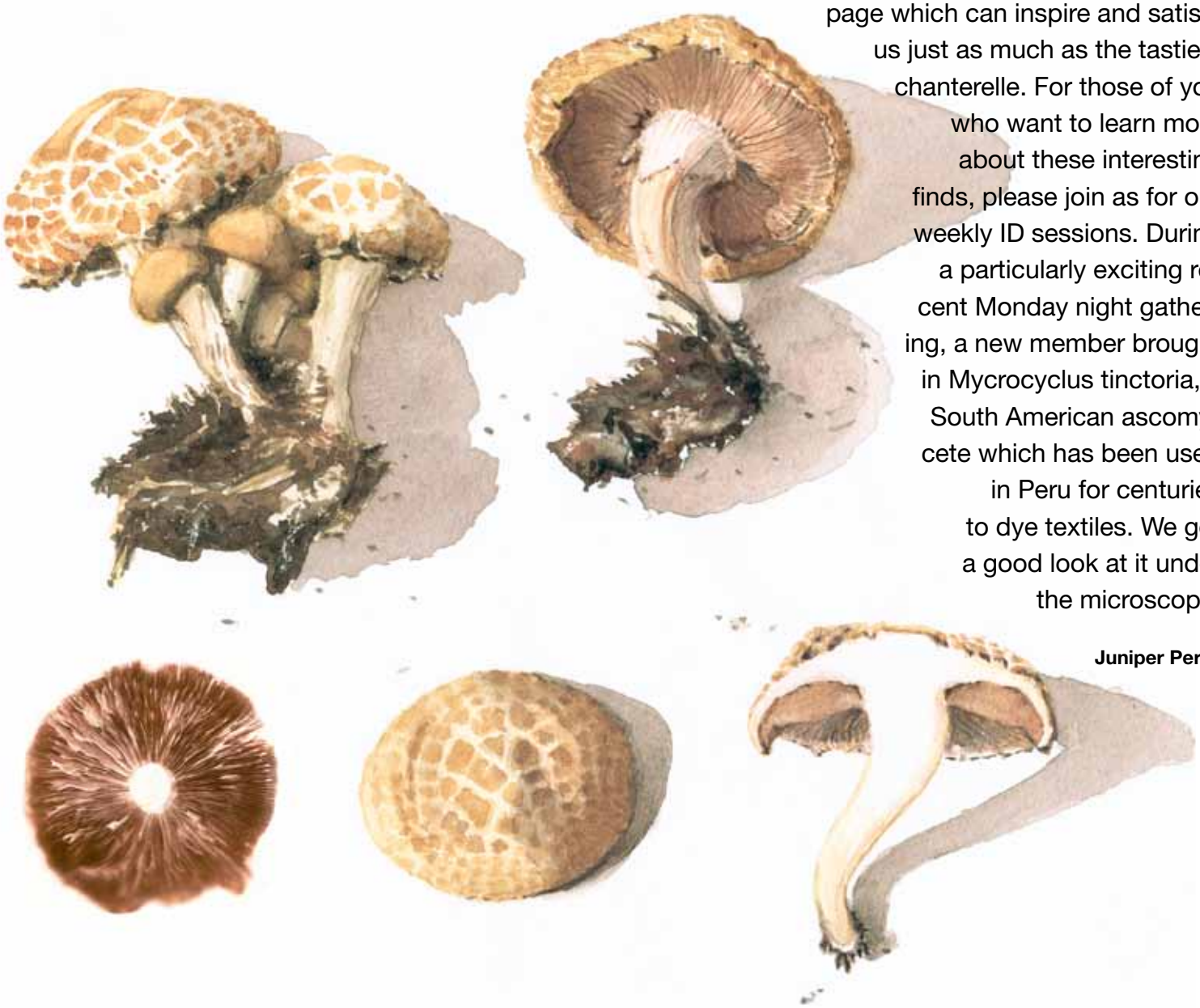
NYMS

New York Mycological Society Newsletter

Summer 2016

It has been a very dry start to the mushroom season so far. Many of the edible mushrooms we are used to seeing at this time haven't come up yet. Very few mycorrhyzal mushrooms like chanterelles, black trumpets or bradleys (Lactarius corrugis, volemus, and hygrophoroides). There have been some sightings of honey mushrooms, though, which we usually see later in the summer. But the last week has brought a lot of rain and I know I am not alone in hoping that our baskets will be full soon! In the meantime, there are many interesting finds on our club walks and/or being posted to the Facebook page which can inspire and satisfy us just as much as the tastiest chanterelle. For those of you who want to learn more about these interesting finds, please join as for our weekly ID sessions. During a particularly exciting recent Monday night gathering, a new member brought in Mycrocyclus tinctoria, a South American ascomycete which has been used in Peru for centuries to dye textiles. We got a good look at it under the microscope.

Juniper Perlis



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UPCOMING EVENTS

NYMS Chanterelle Weekend, Londonderry, VT, July 22nd – 24th
NEMF Sam Ristich Foray, Fitchburg, MA, July 28th – 31st
NYMS/COMA Picnic, Fahnestock State Park, NY, September 10th
COMA Clark Rogerson Foray, Copake, NY, September 22nd – 25th
Peck Foray, Huguenot, NY, September 23rd – 25th (Hosted this year by NYMS)

NYMS Newsletter

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Submissions for the next issue of the NYMS newsletter must reach the editor by September 1, 2016. Various formats are acceptable for manuscripts. Address questions to Juniper Perlis, editor. See above for addresses.

NYMS/COMA Annual Joint Picnic and Walk

NYMS and COMA (Connecticut-Westchester Mycological Association) are having our 21st annual joint picnic and mushroom walk. It will be at Pelton Pond in Fahnestock State Park, Putnam County, NY on Saturday, September 10 starting at 10:30 A.M.. We do an easy mushroom walk around the pond before lunch, gather for a potluck lunch and a mushroom ID session. Please bring any fungi that you want identified or just to show off!

Bring plenty of good food and even something to drink (wine, etc.) to share with everyone. Bring your own serving utensils. Morrs and Bev will provide us with some eating utensils, plates, cups, napkins, table cloths, etc! Pelton Pond has tables, both sheltered and outdoors. Walk leader: Morrs Palmer (718-636-6348 & 914-225-3721). There is no direct public transportation, but Dennis Aita (212-962-6908) will attempt to get people rides from NYC or Westchester. Please call him if you need or can offer a ride as early as possible in order to make his task as easy as possible!

By car, take the Taconic Parkway to route 301 (Fahnestock State Park, Putnam County) and go west towards Cold Spring on route 301 for less than a mile, passing the camping area on the left, entering the parking lot at the picnic area, also on the left where we meet. If you arrive late, catch up with us by walking the yellow blazed trail around the pond in a counterclockwise direction.

Mycophagist Table Update

Participation in the Mycophagist's Table continues to grow. In addition to the wonderful morel tasting in early April, in May, Reema Keswani and Neil Redding created a collaborative dinner experience with Jonathan Wu, executive chef at the celebrated restaurant Fung Tu on the LES.

The concept was to have chef Jonathan cook with mushrooms we had foraged - however we had to postpone this idea until later in the season when we've all had more opportunity to collect choice edibles. The brilliant Mr. Wu created a wonderful six course tasting menu ranging from shaved Trumpet Royale salad to stuffed morels to shiitake-chocolate-peanut butter ganache for dessert, among other deliciously innovative concoctions. And sixteen passionate mycophagists in our club got to know each other well over the course of the cozy, relaxed evening.

We know many of you have secret (and not-so-secret) mycophagy passions - and we want to make it easy for you to share these with fellow club members! As always, please contact me (tmp.neil@gmail.com) with any ideas you have - I will work with you to translate them into mycophagy gatherings that all will enjoy.

— Neil Redding, Mycophagy Chair

Remember!

Stay responsibly in touch with us. If your telephone number, mailing or email address changes, please contact Paul Sadowski, Secretary with your new information. On your membership form, please consider going paperless when it comes to receiving these newsletters. Newsletters sent via email (PDF file format) are in color, have live web links, help us contain costs, and use fewer natural resources!

NYMS walks policy: We meet when public transportation arrives. Check the walks schedule for other transportation notes. Walks last 5-6 hours and are of moderate difficulty except where noted. Bring your lunch, water, knife, a whistle (in case you get lost or injured), and a basket for mushrooms. Please let a walk leader know if you are going to leave early.

Leaders have discretion to cancel walks in case of rain or very dry conditions. Be sure to check your email or contact the walk leader before a walk to see if it has been canceled for some reason. Nonmembers' attendance is $5 for an individual and $10 for a family.

We ask that members refrain from visiting walk sites two weeks prior to the walk.

Warning: Many mushrooms are toxic. Neither the Society nor individual members are responsible for the identification or edibility of any fungus.

Our Springtime Morel Tasting

By Dennis Aita

This past spring we had a morel tasting, comparing some Western morels with our local morels. From the West there were two batches of what we believe were Morchella snyderi, the common burn-site black morel in the West - one collection from Mt. Shasta and the other from Montana. From the East we tasted local morels from New York and New Jersey: M. "esculenta" —one, a recent batch, and the other from 1993. M. esculenta is actually a European species so it will be renamed M. esculentoides or M. americana. We also tried M. angusticeps (our local black morel that grows in natural settings and not on burn sites), and M. diminutiva (those smaller yellow morels in the esculenta clade that are found mostly under tulip poplar, ash, hickory, and sometimes apple).

We tasted them "blind". Tom, Juniper, and I knew the morels that we were tasting, but only I, as the cook, knew exactly in what order. They were all rehydrated overnight in water from their dried state, then stewed in their rehydrating water with butter, salt and pepper, and then finished with a touch of cream. Because the morel batches differed in quantity, I didn't measure the ingredients. It may have influenced some of the outcomes (see below for the Western blacks).

They were all quite tasty yet definitely different. It was debatable whether the Mt. Shasta blacks, with their surprisingly upfront flavors, or our local esculentas (recent batch), with their balanced and complex flavors, were the group's favorite. Most of us greatly preferred the Mt. Shasta blacks over the Montana blacks. Don't know why! The older 1993 esculentas were good, but some declared them to have less flavor than the recent esculentas and some of us detected a little bitterness. (Was this because I had kept them in less than ideal storage conditions in my warm apartment for over 2 decades?) Both the local blacks and the diminutivas were enjoyed by everyone, though their flavors are not quite as strong as the other morels. I was surprised by the tastiness of the diminutivas since I find their smell somewhat unpleasant in the fresh state. Apparently, this doesn't carry over when dried and cooked.

About ten years ago we had another morel tasting. We mostly tasted Western morels that were collected in northern California and southern Oregon. A company from Oregon shipped us 3 batches: black morels from "hot burn-sites", blacks from "burn-sites", and "natural blacks", those not associated with burns. Everyone thought the "hot burn-site" blacks very unpleasant, with a bitter and astringent taste. They were a mixed bag of species (so were the "burn-site" morels; I am not sure about the "naturals"). I was able to identify that some of the "hot burn-site" blacks were clearly what has now been given the name M. tomentosa, the black-foot or fuzzy foot morel. Opinions differed when it came to the other two batches, but they certainly didn't compare with the Mt. Shasta burn-site blacks sampled at our April tasting, which were far more delicious.

There are quite a few species of black morels out West, and most of them are usually collected the year after forest fires. As for taste, it seems to be a question of whether the variability in taste among the Western black morels is due to the inherent nature of the different species, or due to environmental factors – such as the intensity of the burns? Or do both factors contribute to the differences?

Morel Breakfast and Morel Hunts

Many thanks to Howard Goldstein and Mimi Calhoun for once again hosting the Morel Breakfast at their house. They have now done it for over 20 years! At their expense they generously treated us to a tasty breakfast.

As for morels. even though there hadn't been that much rain in late April and early May, some members did find morels (mostly under apple) on both weekends. On the first weekend, we found M. angusticeps, esculentas, punctipes, and diminutivas.

Morel Tasting: Mycophagy Chair Neil Redding & event co-host Dennis Aita

An Evening in Paradise

by Talia Schenkel

Juniper's Chicken Thighs Braised with *Morchella snyderi* from Montana

Once upon a time, there was a faraway place called Land of the Food of the Gods. If you were lucky enough to be blessed by the Mushroom Fairy Godmother, you were instantly transported to this Paradise, where you could be fed as many morels as you could eat—all burnished in butter and cream—until you could hardly eat another.

That is just what the lucky few members of the New York Mycological Society experienced this spring at the opening event of the NYMS mycophagy season, orchestrated and cooked by Dennis Aita, Juniper Perlis, and Tom Bigelow, and generously hosted by Juniper and Tom at their home.

It was an unforgettable experience, one that taught us about the differences in umami among six collections of dried morels from the Eastern and Western United States. Among the six different morels, which we tasted in blind tastings, some of us detected the acridity or smokiness of morels that came from around burn sites on Mount Shasta in California, some the butteriness of those picked locally.

All were cooked the same way—with plenty of butter, a touch of salt and pepper, and a little cream—yet the nuances of each were slightly different, and people's preferences were different. There were as many subtle distinctions in taste as there would be in an oyster or wine tasting. "Terroir" once again played a major role. And finally, as always in such delightful challenges, "De gustibus non est disputandum" (In matters of taste, there can be no disputes).

What a privilege to then be able to savor the morels with farfalle, cooked to al dente perfection by Dennis Aita! The chicken and morels, made by Juniper Perlis, practically fell off the bone and was followed by a salad dressed so perfectly by Tom Bigelow that it took me back to my Junior Year in Paris, when I first discovered how a perfectly made vinaigrette could transform a salad! The lemon cake that signaled the end of the meal proved that even after all the delights that had preceded it, there were still more "Ooo's" and "Mmm's" left within us.

The conversation, as always among us mushroom lovers, was delightful, and before we knew it, we were thrust out of The Garden of Eden and back out into the cold, cruel world where a couple of morels would be considered a huge treat.

We had spent several hours in Paradise and would have those exquisite moments to carry us through the time out in the "real world"—a point of reference that would remind us of what is possible when the best of what nature can bring forth from the earth is transformed through human skill and ingenuity into the best of what humans can create!

Here's looking forward to many more such moments in Paradise together!

Bolete Patrol

Ethan Crenson

If you feel you're spending too much time with your family and not enough time searching for boletes this summer, may I recommend joining the Bolete Patrol®. The idea was proposed by Gary Lincoff to correct the bias in our mushroom lists for summer months when our club is otherwise occupied hunting for delicious fungi outside of the city. Just watch the NYMS Facebook page for announcements of pop-up walks in NYC parks on the weekend-day upon which a scheduled NYMS walk does not take place. (Example: there's a walk Saturday, August 6 at Stony Brook, Rockland County. Then perhaps on Sunday, August 7 there will be a walk in a city park, possibly Prospect Park, possibly led by Dennis Aita, depending on schedules and rain, etc.) You don't have to give up your scheduled out-of-the-city NYMS walks to join the Bolete Patrol. You can do both! Bolete Patrol walks will be free to NYMS members. Non-members will pay a small fee which can be applied to their inevitable club membership. All members should be aware that the Patrol will require that you surrender at least one mature specimen of any mushroom you might find that cannot be positively identified in the field. Bolete Patrol patches will be available, again, for a small fee, so that you can proclaim your membership in this elite club. As a special incentive, a free Bolete Patrol patch will be awarded in November to the member who adds the most new species to our NYC parks list. Please note that Bolete Patrol is not a registered trademark and the symbol used to suggest as much in the first sentence was farcical. The Bolete Patrol, however, is not.

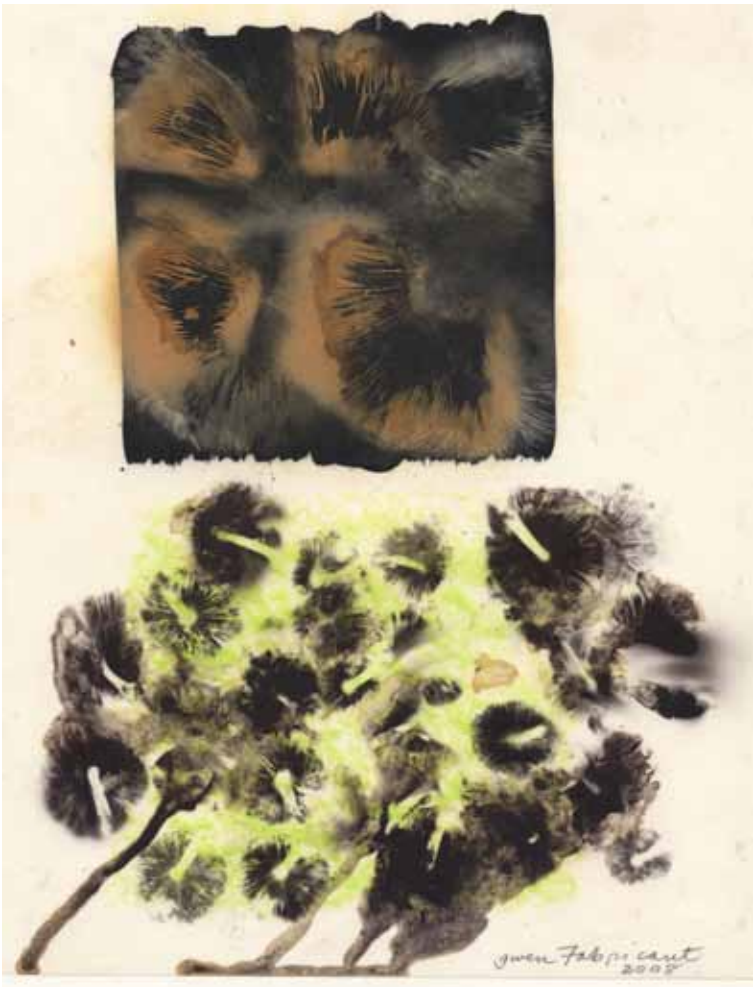
A Conversation with Artist and Member Gwen Fabricant

by Juniper Perlis

Gwen Fabricant is a multimedia artist, educator, and long time member of the New York Mycological Society. Some of her spore print paintings were exhibited at the John Cage centennial exhibition at Cooper Union in September 2012. I had the great pleasure of talking to her about her spore print paintings, four of which are reprinted here.

JP Tell me about the process involved in making these spore print pieces?

GF After collecting the mushrooms, I start working with them as quickly as possible for the best chance to get spores to drop. I usually use mylar, which is a plastic material that doesn't buckle much from the moisture. It's translucent, so I can prepare sheets of it ahead of time with paint (oil, acrylic, gouache) or other media and techniques, wet or dry, applied to either, or both sides of the mylar. That way, I can combine color and texture with the muted, subtle tones of the spores.



I cut off the stems, lay the caps, gill or pore surface downward on the work. I work on many pieces in each session — adding to each of them over a period of time, sometimes years, until they seem finished, storing them in glassine folders, after spraying them with fixative.

Many variations are possible: I can use fragments of caps; incorporate the stems (for white lines); leave the caps down for shorter or longer periods; cover the caps for sharpness, or leave them uncovered for moving air to blur the image; instead of mylar, I can use heavy, black archival paper for white-spored mushrooms; layer the spores many times; let them deliquesce to run and stick to the surface... I could do this work forever without getting to the end of it. But, I do run out of mushrooms — I never seem to have enough of them to work with.

The first time I used spores in my artwork was in a piece titled "MEMORY" — where I laid the mushrooms down on an entirely completed oil painting on linen — over a period of months.

JP You say it frequently takes many years to make a spore print painting?

GF It almost always does, because of the luck, or lack of luck of the hunt. I really should go live amidst the mushrooms, like "the old man of the woods" (Strobi-

lomyces floccopus), which makes one of my favorite spore-prints.

JP Does it also take this long to make your other works of art?

GF Most of my work does take shape slowly — I work on the oil paintings one at a time, over a period of months, but I work on a number of spore-prints over many seasons. Their final shape isn't in my mind until they're finished. They grow like a plant, gradually, into what they are finally meant to be.

JP Do you think of the mushrooms as your collaborators?

GF Yes, it surely is a partnership, but I'm really at their mercy - I can't control how many, or what kind I have to work with. I feel that they should sign the work.

JP How do you know when the spore print paintings are done?

GF When the composition feels resolved - or is satisfying as it is.

JP Are there certain mushrooms that you get more excited about than others?

GF The rare pinkish, greenish or pale yellow ones are exciting, but I also love the range of browns and blacks... and of course a perfect white big Amanita, wow! And the breezes

blowing under a mass of chanterelles or oysters make an image full of motion. I appreciate the generous blackness of inkies. I like the delicacy of the small, fragile Mycena and Marasmius. I'm crazy about anything with spores.

Searching intently for mushrooms, taking them back to the studio, and turning them into art-work, is my way of physically connecting with the cycle of life, which everything in nature, including humans, is part of. The NYMS is very important to me... it's fantastic to have company in this love of mushrooms!

All images © Gwen Fabricant

Opposite page

upper-right: 2008.01 2008 13-½ × 11 in. spores and acrylic paint on mylar

bottom-left: "Black and Blue" 2016, 13-¾ × 11 in., plant material collage and print on paper.

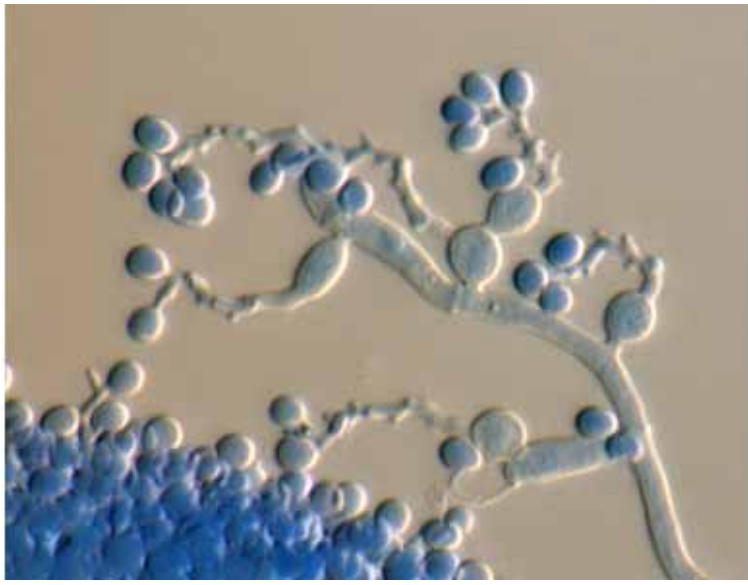
This page

bottom-left: 2009.02 2009 14 × 11 in. spores on black paper

above: "Memory" 1997, 49 × 39 in., oil and mushroom spores on linen.

The following is a modified version of a paper written for a microbiology class in fall of 2015.

Fungi as a Public Health Ally: Malaria Vector Control with Entomopathogenic Fungi



by Matt Gardner

One of the great breakthroughs leading to the development of modern medicine can trace roots, or shall we say hyphae, to the world of fungi. A central concept in medicine, known as The Germ Theory of Disease, states that specific microorganisms are the cause of specific diseases. In 1834, after years of study, Agostino Bassi showed that the Italian and French silkworm industries were being decimated by an insect-parasitic fungus rather than by the spontaneous generation of disease in silkworms. Bassi's findings were later built upon by Louis Pasteur and finally proven by Robert Koch (Porter).

Entomopathogenic (insect-parasitic) fungi now have the potential to make another great impact in the field of medicine. This time, they could prove to be a powerful tool in the public health arsenal. Common soil fungi, such as Metarhizium anisopliae and Beauveria bassiana (named after Bassi), show great promise as a vector (mosquito) control method in the global fight against malaria. In 2013, there were approximately 198 million cases of malaria worldwide, resulting in an estimated 584,000 deaths (World Malaria Report 2014).

Current malaria vector control methods have been fairly effective up until now, but resistance pressures are building with ever-increasing usage of chemical insecticides. Insects have demonstrated the ability to develop resistance to all chemical pesticides over time. However, among entomopathogenic fungi currently in use for agricultural pest control, there has been no evidence of any resistance development over time (McNeil). As resistance to current methods of mosquito control builds, alternatives must be developed to continue this necessary fight.

Chemical insecticides, such as the ubiquitous pyrethroids, have a rapid knockdown (death) rate that eliminates very young mosquitos. This approach results in high selection pressure on the vector population, and greatly favors those insects with insecticide resistance. Contrary to the speed of this method, the malaria parasite (Plasmodium) typically requires two weeks of maturation in a mosquito before transmission to humans may occur. There is an evolutionary benefit to eliminating only older adult mosquitos by utilizing the slower knockdown rate associated with certain entomopathogenic fungi. Mosquitos infected with these fungi are able to reproduce and this keeps selection pressure low; however, they are still likely to succumb to the fungal infection before malaria becomes transmissible to humans. The malaria parasite incubation period gives fungal vector control an advantage over traditional methods through a sort of evolution-proof control tactic (Knols, Bukhari, & Farenhorst).

In a study examining the lethality of these fungi to mosquitos, researchers found a number of fungal isolates that demonstrated a high rate of vector mortality (>80%) over the course of 14 days, corresponding to the length of time typically required for the malaria parasite to develop into its infective form (Blanford et al, 2005). Furthermore, different strains of these fungi provide high vector mortality rates ranging from several days to several weeks based on the virulence on the isolate. Fungal strains with very high levels of virulence may be ideal in the short-term, but if mosquitos are killed too quickly, then insecticide resistance will build as with chemical insecticides. On the other hand, if an isolate with low virulence is chosen, then malaria transmission will not be sufficiently reduced. Through careful selection of fungal isolates, this delayed-action vector control method has the potential to both minimize insecticide resistance and maximize mortality of infectious mosquitos (Valero-Jimenez et al).

While this method of vector control is still in the developmental phase, fungal insecticides would likely be used in the same way as current chemical insecticides. Fungal isolates reflecting the optimal combination of insect mortality and fungal persistence would be applied in an oil-based spray to surfaces such as dwelling walls, bed nets, baits, and other areas mosquitos are likely to rest after a blood meal (Scholte et al). From a safety standpoint, the Environmental Protection Agency found human exposure to these fungi to be completely harmless in an agricultural context (McNeil); however, further research should be conducted for use in a domestic context.

Opposite, top: Beauveria bassiana, here having attacked a cicada. Photo credit: Tom Bigelow

At this point in time, entomopathogenic fungi's use in the fight against malaria is constrained by limited vector contact and fungal viability over time. Through the application of past, current, and future research, the method of delivery and selection of isolate(s) should allow these hurdles to be overcome. One study found that B. bassiana spore solution applied to typical domestic surfaces including clay, cement, and wood, exhibited varying levels of persistence over time. The spores on clay maintained an adequate mortality rate, comparable to common chemical insecticides, while those spores applied to the cement and wooden surfaces underperformed their mud counterpart (Blanford et al, 2012).

Researchers have explored the effects of different indoor fungal delivery surfaces on vector mortality and discovered that M. anisopliae on clay panels was more effective than fungi applied to black cotton cloth or polyester mesh (bed netting). In tests with B. bassiana, the clay panels and black cloth both outperformed the polyester mesh (Mnyone et al). Tests examining the use of outdoor odor-bait stations using M. anisopliae have shown comparable levels of vector mortality to indoor tests. These stations could act as a complement and/or alternative to indoor fungal spraying, as they allow for higher levels of exposure to outdoor mosquito populations (Lwetoijera et al). Additionally, chemical insecticides can have a strong repellent effect on mosquitoes resulting in limited instances of lethal exposure. On the contrary, research has shown that common malaria vector species are not repelled by the presence of M. anisopliae or B. bassinia (Lynch et al).

Lastly, genetic engineering has the potential to develop far more effective strains of these fungi. It may be possible to develop fungal isolates that interfere with plasmodium development but leave the mosquito unharmed, resulting in a near elimination of resistance development (Knols, Bukhari, & Farenhorst). In another study, a genetically modified Metarhizium strain engineered to produce antimalarial peptides has been shown to significantly (>95%) hinder the transmission of the disease in mosquitos with advanced infections of 14-17 days (Fang et al). While genetic modification is frequently viewed as suspect in our culture and globally, a tool that has the potential to save millions of lives should be seriously considered and weighed against any potential drawbacks.

Entomopathogenic fungi as a vector control method still needs additional research and refinement before it can be rolled out on a large scale, but there is great potential in the use of these organisms. Entomologists, mycologists, medical professionals, and sociologists could develop a real game-changer if adequate fund-

ing and willpower persists (Takken & Knols). Malaria is a scourge to humanity, but with ingenuity, determination, and some help from nature, it does not need to remain that way.

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Mycommentary

By Ethan Crenson

On a recent Sunday at the Dana Center in Central Park, Dr. Roz Lowen conducted a workshop to familiarize participants in techniques for examining microscopic features of ascomycetes. The fourteen participants prepared slides from a variety of specimens collected for the event. Among the procedures discussed was the use of chemical reagents and stains that aid in examining tissues under the microscope. But Dr. Lowen gave a simple piece of advice which I did not fully assimilate until I put it into practice. She instructed us: Start with water.

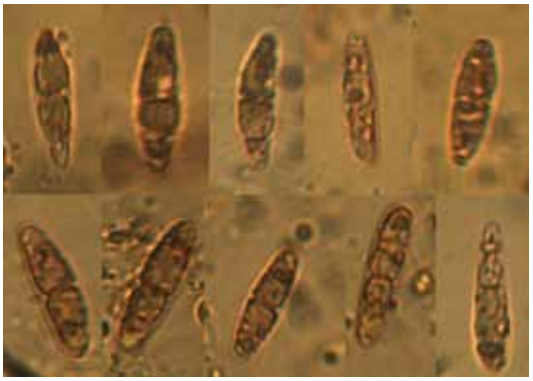
I have been interested in the ascomycetes of late. When studying this class of fungi under the microscope, it is important to assess the reaction of the tip of the ascus in an iodine solution (either Meltzer's reagent, or Lugol's solution). My habit had been to prepare my specimens in an iodine solution, locate asci, spores, paraphyses, and other microscopic features and draw or describe them in my notebook. Then I would measure as many of them as possible.

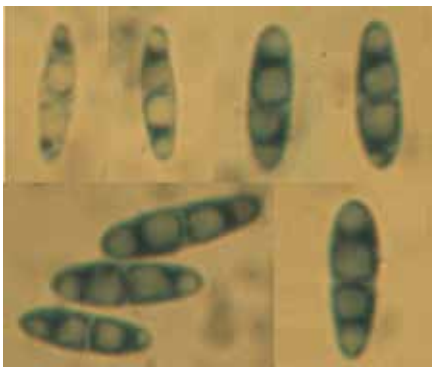
But by starting in iodine solution, the inherent natural features of these microscopic bodies can potentially be modified, or even destroyed by the chemical. By way of illustration, take a look at the images below. They show the spores of a species of ascomycete (probably a Diaporthe) mounted in three slides. In the first photo the spores are mounted in water. Notice that the spores appear cinched at the center by a single septation and they each appear to have multiple oil droplets.

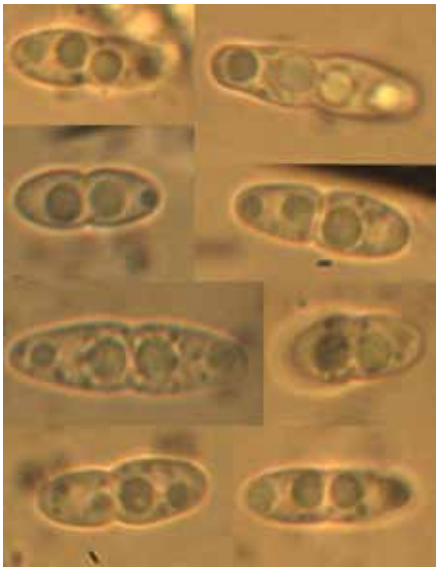
In the second photo the spores are mounted in Lactophenol Cotton Blue. Notice how the oil droplets are no longer visible, but that each spore now has the appearance of 3 septations. The cinch at the waist also appears less defined.

In the third and final photo the spores are mounted in Lugol's solution (an iodine solution). Notice that that the spores now look like they've had a bad night. Where the surface had been smooth and almost featureless in water and cotton blue, the surface in Lugol's appears bumpy or warty and the septations less distinct.

Chemical reagents and stains can be a crucial tool in our understanding of fungi. But you would be wise to heed the advice that I took home from Dr. Lowen that Sunday... start with water.







top left: in lugols
left: in blue
above: in water

The Seduction of Taxonomy

A Personal Review of the Roz Lowen Ascomycete and Microscopy Workshop

By Vivien (Vicky) Tartter

Three years ago, in Gary Lincoff's beginner fall mushroom course at The New York Botanical Garden, I was overwhelmed – struggling to match vocabulary (gills, pores, boletes, cups, basidiomycetes, ascomycetes) to well defined, but not exclusive categories. I also was hooked: foraging, finding, and when fortunate, feeding, on weekly pop-up walks that I started as "homework". This focused a latent but apparently lifelong interest in ecosystems. Under the patient tutelage of club members, my categorizing clarified, and the sometimes nuanced and changing borders catalyzed a drive to deeper understanding. I could never have anticipated asking for a dissecting scope for my birthday, but not only is the science of classification itself rewarding, each new name and bit of knowledge increases sensitivity to finds in the field, thence positive feedback for more names and features.

On May 1, a small group of members met with Dr. Roz Lowen for the ascomycete microscopy workshop on an upper floor in the Dana Center in Central Park. It was a chilly, misty day with occasional rain—great karma for facts fungal. We began with about an hour lecture. Dr. Lowen was framed by a magnificent windowed view of early spring green impressionistic tree crowns: the eye could feast on the incredible images of micrographs, and the wonder of the misty spring day.

As a relative newbie, I was impressed by the images of "operculate" and "amyloid" – the pictures were worth the thousand times I'd heard those words in the field, not knowing what they meant. Pezizas are both, I learned. Peziza sucosa can be identified by a yellow secretion when it breaks. Peziza fimeti grows in cattle dung. To scope a cup, take a pinch with the forceps of both the outside and inside of the cup. The trick with microscopy is to take very little, and then use a small cover slip so it is not too hard to find the sample when looking through the lens. For the pezizas there will be oil drops in the spores. For the eyelash cup, a field favorite, there are several species; to determine which, count the "roots" at the base of the hairs under the cup.

Another exciting lecture note: the powdery mildew (which plagues my peonies by midsummer), cleistothecium has a closed fruiting body, dark brown where the spores are, opposite to the powdery side. When one puts the cover on a slide prepared with powdery mildew, the fruiting body explodes releasing the spores. Who would think that I am now eagerly awaiting the blooming of the peonies to pass so I can collect some of the powdery mildew? And then there were the shared references to Tom Volk's fungus of the month pages and the photos on http://www.messiah.edu/Oakes/fungi_on_wood/index.htm

After the lecture, we moved to the laboratory portion, the bulk of the afternoon. There were about 10 microscopes (both dissecting and compound) brought by participants, some specimens to work on, and some snacks to share. I prepared my first slide of a piece of morel under the tutelage of Don Recklies, with his compound microscope, dissecting tools, and stains. It was akin to how I felt seeing Saturn through a telescope – it really has rings!!! as though that was in doubt – in this case, there really IS an ascus and look at the spores! Too involved in developing my own skill set, which like identifying macro features seems to be two steps forward and one step back, I did not see much of what others were working on, but did circulate occasionally, as did we all. There was a lot of sharing, a lot of advice by Roz, and a lot of fun. There was also a clamor for another similar workshop, now scheduled with Eric Boehm, a specialist in dothideomycetes for July 16.

The field finds, especially the new and strange, inspire lab work. The lab crystallizes concepts, raises new questions, and inspires more field time for more discovery. We are so lucky to have a club that fosters this loop.

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