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July - August 2020
www.namyco.org
Hello Mycophiles,

I hope you are enjoying some time in the woods, or at least some time out of the house. Despite the sadness and disappointment of our canceled annual foray, we will foray together again! An announcement about next year’s fabulous, fungiful location will be coming soon; we’re finalizing a contract as I write. Coming even sooner will be announcements of some virtual presentations and workshops.

Every time you hear from me, I ask for volunteers and engagement. Many of you attend our annual foray regularly, and many of you hope to attend when possible. You read The Mycophile. The unanswered calls for volunteers tell me that you are happy with this level of activity. There is no real purpose to our lengthy list of committees and regional trustees if people do not want to participate in them. Year after year, these sections of our annual reports, required by law to maintain our status as a non-profit organization, show very little to report and very few new members of committees.

COVID 19 has made a lot of our favorite fungal activities more difficult, if not impossible, so this year the scanty reports may make more sense. To put it more optimistically, we can take this occasion to decide whether to focus more intentionally on forays and The Mycophile and let the rest go. If I’m wrong, speak up and step up now.

As we come out of quarantine, I would also like to know your reflections on the issues of equity and equality that are engulfing the US and Canada and how NAMA and our local clubs can address them. Do you remember your first foray with a mushroom club or your first time to show up at a mushroom club meeting? What made you feel welcome? What might have made you hesitant to take a walk in the woods with relative strangers? How is our current climate different for better or worse? How can we do better? We must do better. Again, it’s time to speak up and step up. Very literally, our shared future depends on it.

COVER PHOTO by Michelle Torres-Grant. Documenting mushrooms in the field with timestamp and GPS location.
FORAYING IN THE TIME OF COVID:
OPTIONS AND IDEAS FOR NAMA-AFFILIATED CLUBS TO KEEP IN TOUCH WITH MEMBERSHIP

Foraying in 2020 is not like years past with the COVID-19 pandemic interrupting many plans. Several states have social distancing rules and group size limits in place, making it nearly impossible for most traditional forays to take place. These new rules have inspired NAMA affiliated clubs to connect with their membership in new and creative ways, using assorted social media and meeting platforms. Upon reaching out to clubs, I was amazed to see the creativity and ideas put in motion to continue the education and entertainment of members. The mycological community is coming together in new ways to interact and make future plans for member engagement. I hope this sharing of successful methods of keeping in touch with club members will inspire more NAMA clubs to bring forth an age of enrichment for both mycological students and presenters, even when things get back to “normal.” I would like to thank all of the club presidents, webmasters, and program directors who answered my call for engagement and who contributed to this inspirational piece.

-Karen Monger, Mycophile Editor

CASCADE MYCOLOGICAL SOCIETY (CMS)
Eugene, Oregon, Sandy Patton, Webmaster

CMS has done two virtual meetings thus far. The first one was via a Zoom Webinar (requires a Zoom webinar license) in conjunction with Trent Blizzard of Modern Forager. For the second one we only had the facilitator (me), Club President, and the speaker on Zoom and live streamed to YouTube. Viewers could ask questions via the YouTube chat feature.

Here are the two that CMS has done:

Oregon Burn Morels with Trent Blizzard - Advertisement on webpage. Video on YouTube
Richer than Gold: Biodiversity vs. Industrial Mining with Dr. Roo Vandegrift - Advertisement on webpage.

FYI, I can envision using Zoom after we are able to meet in person. Chris Melotti (our speaker coordinator) could invite a speaker located anywhere in the country to give a talk. A laptop and projector is always required at our meetings anyway. Just install Zoom and the speaker can be anywhere. Gather for the meeting. Bring up the Zoom meeting with your presenter and display it with the connected projector - most projectors also have built in speakers.

You can also live stream in person meetings to YouTube or Facebook. Or record it and upload to YouTube or the clubs website afterward. We have tried doing some live streaming with cell phones in the past, but the lighting is always bad. With Zoom, you are livestreaming the presentation that is on the computer, so no lighting issues. In this case, a wireless microphone tied into the computer may be needed for the speaker to get higher quality audio.

Some other ideas that I am thinking about, but have not done yet:

A “virtual mushroom foray” for members only. This will require the Pro Zoom license. A Zoom meeting will give members the opportunity to see each other online, while live stream to YouTube meetings are only about seeing the speaker. This would be about sharing pictures of mushroom finds - but will take some effort and cooperation to pull off. I will let you know if I am successful.

Using Zoom to teach online mushroom classes. The only drawback is the students will not be able to feel and touch any real mushrooms. But, an online environment is a “dream” for the teacher because now they can have a script - no forgetting to say that one important detail. It is also a great platform to be able to easily record classes and make them available to other club members at any time.
NORTH IDAHO MYCOLOGICAL ASSOCIATION (aka North Idaho Mushroom Club)
Tim Gerlitz, Educator

I appreciate you reaching out to the clubs. We have remained virtually active during the spring 2020. At any time, we have 150 to 200 members of our club. We meet April, May, June, and September, October, and November every year. Our club meetings are typically held at a local library that can handle our crowds. We have educational programs at our meetings, guided identification outings in our local forests, and several potlucks each year. However, the COVID crisis closed our meeting space and with restrictions in place and of course for safety, we have not met in person this spring.

Instead, we have remained very active on our club Facebook page. Our Facebook page is open not only to our club membership but also to the general public. Several weeks ago, during our regularly scheduled May club meeting, I decided to launch a Facebook Live event and present our spring mushroom PowerPoint program using that technology. To my surprise, over 5,000 people watched the presentation live, a reflection of our 6,500 Facebook page followers.

It appears the program was well received and it remains a viewable video on our Facebook timeline and has continued to rack up 1,500 additional views. Interestingly, our club membership has paid a prorated membership fee this year, but with our Facebook live videos the general public from all over the world who follow our Facebook page has offered to financially support our educational efforts by becoming remote members. This is opening up an interesting avenue for us. Recently we have had several poisonings in North Idaho and for the June meeting, we are presenting information on poisonous mushrooms of the area and emphasizing safe mushroom collecting. We anticipate a large online crowd for that venue also.

If things improve in our country, we may meet in September but will wait until we are closer to make that decision. In any case, using the Facebook platform to communicate with the public and our club members has been very successful and we will likely continue to do this. We have had a number of people who are elders and some who have disabilities who are challenged to make club meetings and they have strongly recommended that we continue to provide Facebook Live streaming for our educational programs so they can attend and enjoy the events as well.

If anyone would like to contact me regarding the software I use for Facebook Live, or our marketing approaches, I would welcome that contact very much. Hope all well, Tim Gerlitz timgerlitz@gmail.com. You can find us on Facebook by searching for the North Idaho Mushroom Club. Let me know if you have questions or would like clarification on any of this. Take care Karen and hope you and your family are doing well during these times.

CONNECTICUT WESTCHESTER MYCOLOGICAL ASSOCIATION (COMA)
Joe Brandt, COMA President

Last week, our club used Zoom for the first time. It was for a presentation by Bill Bakaitis, entitled Morels with Reference to Habitat and Abandoned Apple Orchards, and my observation was that it was nothing short of a “howling success.” The program was hosted by our email bulletin editor, the ever-resourceful Stephanie Scavelli, and it could not have gone more smoothly. We had approximately 50 participants (this was an evening program), and Bill spoke throughout the photo presentation (live image of him appearing in a box at the lower right of everyone’s screen), taking questions at intervals, and culminating with a general “Q&A” session. The entire event took about two hours, and people could come & go as they pleased, without causing interruption. With the success of this under our belts, we have at least two more programs (to be done with Zoom) “in the pipeline.”

As far as outdoor events go, COMA will try resuming (very limited) weekend walks at the end of May, many of which will be on property that is not State or County-owned. We will have health and safety measures in place, and small groupings, as well as “social distancing” within groups, will be strictly enforced. Masks will be mandatory, and gloves will be required for anyone wishing to examine collected specimens. There will be no sharing of food after walks (which is
our usual M.O.), and all events will be “members only,” no guests. We fully expect that we will have to cancel some walks, and members have been advised that all walks listed on our schedule are tentative, and subject to change or cancellation. (Members will be kept updated via our regular email bulletins.) If we find that it is impossible to provide a reasonable degree of safety, as well as maintaining compliance with local and/or State regulations, we will cancel walks “for the duration.” As of this writing (5/25), we have no plans in place to do a “live” foraging walk via Zoom.

SOUTH SOUND MUSHROOM CLUB
Rachel Friedman, President

The South Sound Mushroom Club, located in Olympia, Washington has had great success over the past 2 months with online member meetings using Zoom. All of our presenters have been using powerpoint presentations. Our meetings in April and May have been well attended with attendees actively engaging with the presenters using the chat function. In April, as our season was beginning, Melodie Gates, club Treasurer, gave a presentation on safety in the woods and how to find morels. Lauren Re, from the Evergreen State College, followed with a presentation on how to identify morels and false morels. In May, Mike Zirpoli, also from the Evergreen State College, gave a presentation on morel cultivation. Our meetings were attended not only by our club members, but we had folks from other Washington clubs, as well as from other states. We have been keeping members informed and engaged with a monthly newsletter that we offer to have them send out to spread our word. In addition, our executive committee members have been reaching out to other clubs to collaborate and share knowledge and build ideas. We will be considering continuing to meet via Zoom through the summer and hope to be able to get back together in the fall.

PIKES PEAK MYCOLOGICAL SOCIETY
Colorado Springs, Alyssa Hartson, Secretary

Our club has adapted quite well to the COVID crisis. Our first club meeting on April 22 was broadcast live via Zoom/YouTube. Our club VP, Jennifer Bell, presented “Safety in the Woods” and club President, Ben Kinsley, presented “Mushrooms of Colorado.” It went very well and we had a lot of viewers. We advertised it beforehand on Facebook, and sent out 2 email campaigns to members.

Our next meeting on May 27th will also be broadcast live on YouTube at 6:00 pm MDT. Our club newsletter editor will be presenting.

We will be hosting a field learning/community clean up event on June 6. For this, we are limiting groups to 8 people per board member. Board members will lead their group and talk about the area, the plants, trees and terrain and the kinds of mushrooms that can typically be found with each. It’s been dry as heck here so not much fungi to be found yet this year, but we wanted to do something for our members! A mask will be required and each attendee will adhere to the 6’ rule. We are using signup.com for members to sign up to attend.

We’ve been active on social media and communicate regularly via email with members. We’ve been updating our website with blogs and videos as often as possible to keep people interested and engaged.

We had our board meeting yesterday via Zoom, but will be transitioning to Google Meet soon.

BOSTON MYCOLOGICAL CLUB
Susan Goldhor, BMC President

We have been doing Zoom programs since late April. We purchased a Pro Zoom subscription which allows co-hosts. Our first speaker had her own Zoom subscription; our second one used ours, which worked well. The subscription is not prohibitively expensive. (under $30/month). We paid the first speaker an extra $50 to purchase a temporary increase in audience size, which turned out to be needed (170 members clicked the link, perhaps because the program was on psychedelics); however, for the next speaker it was not needed. We recorded (or the speaker recorded) both talks and they’re on our website for members only. This turned out to be great for those who missed the talk or those who want to
watch it again because they didn’t get it all the first time around. We would not hand it out to other clubs; that’s for the speakers to do, if they wish. It’s also been a boon for members who couldn’t get to our programs at Harvard; at least one older member who lives outside the Boston area and no longer drives at night, was planning to leave the club, but told me that she was staying on because Zoom made it possible for her to attend the talks. In fact, Zoom has been such an addition to the portfolio, that I’m sure we’ll continue to use it even when we can get together; probably a mix of in person and Zoomed programs.

We’ve cancelled live programs (Harvard has closed the building in which we meet, but we would have cancelled anyway) and walks, since we can’t quite figure out how to do a socially distanced walk and ID session. On the other hand, we have lots of members, including new members eager to learn about fungi, so we’re feeling the need to feed that hunger via Zoom. Three of our members are going to try to film a walk where they ID specimens and show habitat. iPhones are making this kind of thing possible. A few of our younger, more social media-conscious members are working on a club Facebook page, which they’ve been eager to try and which will supplement our Google group. The Google group is mostly used as an ID place for newer members to show photos and ask for identification assistance. I’m interested in hearing what other clubs are doing to fill the vacuum created by social distancing.

I use email as a way to keep in touch with members, and I send out chatty missives with URLs of videos, articles, etc. of interest. At least some members really appreciate this and they keep me supplied with what I’ve missed. It’s my way of talking to the membership and especially important during this tough time.

Every year for many years we’ve offered a series of 4 or 5 classes, especially for beginners. These give the basics of how to forage, what to look for, identification, etc. Also, one wider ecosystem talk. There’s always been a fee for these (usually $25 for the series). We plan to offer these to our newer members via Zoom this year, at no charge. Our big concern is that for many members the walks are the draw, and we won’t be able to hold them. So we do want to give our members as much as we can to try to fill in at least part of the gap. We’re really trying!

MYCOLOGICAL ASSOCIATION OF WASHINGTON DC
William Needham, MAWDC President

The cessation of social activities that began in March imposed significant restrictions on all NAMA affiliated clubs, and Mycological Association of Washington DC was no exception. If anything, the situation in the Washington DC area is more dire than most as it is one of the nation’s “hot spots.” Monthly meetings that were in a Montgomery County Maryland public library were not an option for the foreseeable future. After skipping the April meeting, the board met and decided to attempt an on-line meeting using Zoom. It was agreed that a local presenter would be best for the first attempt. The subject was “Edible and Inedible Mushrooms of the Kingdom Fungi” by the club president. It was a resounding success with about 70 participants (out of over 500 members) and no significant technical issues. The imminent June Zoom meeting (I couldn’t help that) will be on marine mycology, fungi in the aqueous environment. Our program chair is working one month at a time to identify speakers who are capable and agree to an on-line presentation in the future. This process continues. We are also discussing options for either virtual forays or social distance forays and have been trying to figure out some form of culinary demonstration sometime in 2020.

NEW YORK MYCOLOGICAL SOCIETY
Ethan Crenson

The New York Mycological Society suspended all in-person events in mid-March. But our Society has moved many of our spring programs to the online meeting platform Zoom. We have hosted three lectures; a lecture by member Sigrid Jakob was entitled “Fascinating World of Psychoactive Fungi” (first presented to the Boston Mycological Club in April), Bill Bakaitis presented a lecture called “Morels: An Illustrated Lecture with
Particular Reference to Habitat and Apple Orchards” and Lawrence Millman brought us "The PsychroWard: Fungi in the Cold" including some opening remarks regarding "Looking for fungi in the context of COVID-19." More lectures are planned including "The Other Bracketology" by Paul Sadowski.

Our membership has also been taking advantage of the public thirst for lock-down enrichment by bringing presentations to organizations outside of our club. Tom Bigelow will be presenting "An Introduction to Polypores" for the Connecticut Valley Mycological Association. For a local not-for-profit gallery, member Ethan Crenson presented a program on Morels which included taxonomic information as well as a “cooking show" in his own kitchen. And Crenson and Jakob will soon present a basic mushroom class called “Zooming In On Mushrooms” for Brooklyn’s Green-Wood Cemetery. All the while, the NYMS continues to host our weekly mushroom ID sessions, a tradition we’ve long called “Foul Weather Friends" meetings. But our ID sessions are now held on Zoom and rely heavily on our membership using the web site iNaturalist to post images and data of collections and “screen-sharing” with the group as we discuss them. Holding a mushroom up to one’s laptop webcam is insufficient for mushroom identification.

MINNESOTA MYCOLOGICAL SOCIETY
Kathy Yerich

Thanks for reaching out to Minnesota Mycological Society to share what our club has been doing in your NAMA Mycophile article! Our club got a bit of a late start, but truthfully, so did our mushroom hunting season.

MMS meets monthly all year, and twice a month in our busiest mushroom months, which are May and September and October. MMS is also a large club, with over 500 members, so we were cautious to host our first meeting. President Tim Clemens, is a student at the University of MN and was able to use his University Zoom account, which allows up to 300 participants.

Our first Zoom meeting was held in May, the subject was Morel Mania. We covered foray basics, followed by tips for finding Morels and Morel and False Morel identification.

Based on the popularity of the first meeting, we hosted a Zoom Happy Hour on Memorial Day, where people could touch base and share their foraging experiences and finds.

About 60 people joined for a one-hour Memorial Day Mushroom show and tell.

For June, we are hosting two more Zoom meetings, each for our Graduate Student Scholarship Winners to present their research:

June 8th
Nick Rajtar will speak about his ongoing research of the fungal associates of emerald ash borer currently devastating Minnesotan ash forests in his presentation titled, “A Closer Look at Fungi Interacting with the Emerald Ash Borer.”

Eduardo Perez-Pazos will speak on the genus Clavulina (coral fungi) in his presentation titled, “Richness and Ecological Traits of Coral Fungi (Clavulina) in Neotropical Forests.”

June 22nd
Lang DeLancey will speak upon the Gadgil Effect in his presentation titled, “The Gadgil Effect: How Competition Between Fungi May Enhance Soil Carbon Storage.”

Let me know if you have any other questions and thank you for writing this article to show us what is happening with mushroom clubs around the country!

MUSHROOM SOCIETY OF UTAH
Ashley Simon, Boardmember, MSU

In a typical summer, our club (Mushroom Society of Utah) would meet on the first Saturday of the month for a group foray in the nearby mountains. For May, another board member suggested we do something virtually due to the pandemic. About a week ahead of time, we posted on our club’s Facebook and to our member email list the
following message: **Join us Saturday May 2nd for a Virtual Foray at 4 p.m. on Zoom.**

We wanted to still hold our May foray, even in light of current events. Here’s the plan:

Photograph any mushroom specimens you would like to show or have help identifying before Saturday, then join the Zoom meeting (information below).

**Photo Tips:** Taking well lit photographs will help our identifiers see more details of what you find. Before you start looking, remember to keep in mind...

**Habitat.** What is this mushroom growing on (wood, soil, live/dead tree)?

**Gills.** The underside of the mushroom (including the whole stalk) is necessary for identification, so try to get pictures of the top as well as the bottom.

**Elevation.** Where were you when you found the specimen?

Submit your photos by Friday night by emailing them to foray@utahmushrooms.org.

We will go in order of submissions, and open it up for live sharing after that, time permitting.

Note: It can still be helpful to collect your specimens for further examination at home, especially if you want to try to ID them using reference books/ websites.

The Zoom call was facilitated by our president Adam Luker, with Don Johnston and Mark Cannon as primary mushroom identifiers. Photo presenters, in order:

1. Ed D’Alessandro
2. Adam Luker
3. Ken Davis
4. Van Edgette
5. Don Johnston
6. Ashley Simon
7. Alison Neville

**PUGET SOUND MYCOLOGICAL SOCIETY**
Marion Richards, Vice President

The virtual opportunities have given us the option to have speakers that may not be able to travel in person speak at our club meetings. Even though there are challenges with time zones and coordination, it has been pretty interesting to have east coast speakers that we may not have had otherwise. We have also been able to reach a larger audience with the meetings being online. The engagement is quite different, but I feel like a lot of interest has been garnered in offering meetings this regard. It is also a nice way to see club members that we have not seen in months.

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**CALL FOR NOMINATIONS**

NAMA is seeking nominations for four vacant positions:

1. Second Vice President
2. Treasurer
3. Regional trustee to represent the Gulf States region
4. Regional trustee to represent the Southwest region

Please, respond by July 10th deadline

If interested, or would like to nominate someone you know, please, contact:

Salma St. John, chair
Nominating Committee
Vicepresident1@namyco.org

Be an active part of the North American Mycological Association and help it to grow!

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**BOOK REVIEWS FOR THE MYCOPHILE**

One of NAMA’s committees that remains little known to probably the bulk of the membership is the Editorial and Literature Committee, the literature function of which is coordinated by Steve Trudell. The committee has several charges in the NAMA Policy Manual but an important one is to provide reviews of books, DVD’s, apps, software programs, and the like for publication in *The Mycophile*. If you learn of a new book (or DVD or whatever) that you feel would be of interest to other NAMA members, or if you would like to write a review, please contact Steve (mycecol@uw.edu) so that he can coordinate acquisition of the items and submission of reviews to the newsletter.
A while ago, I had a chat with Melodie Gates, Mushroom Culinary Arts member and NAMA treasurer, about *The Deerholmes Mushroom Book - from Foraging to Feasting* by Bill Jones. I asked Melodie if she could share one of her favorite recipes in that cookbook. Melodie contributed this Porcini Mushroom Naan recipe.

**INGREDIENTS**

1 pkg instant dry yeast (2¼ tsp)  
1 cup warm water  
¼ cup white sugar  
3 Tbsp milk  
1 egg, beaten  
2 tsp salt  
2 Tbsp porcini powder  
4½ cups flour  
1 Tbsp minced garlic  
¼ cup melted butter

**DIRECTIONS**

In a large bowl, dissolve yeast in warm water. Let stand 10 minutes, until frothy. Stir in sugar, milk, egg, salt, porcini powder, and flour to make a smooth dough. Knead for 6 to 8 minutes on a lightly floured surface, or until smooth. Place dough in a well-oiled bowl, cover with a damp cloth and set aside to rise. Let it rise 1 hour, until the dough has doubled in size. Punch down the dough and knead in the garlic. Pinch off small handfuls of dough about the size of a golf ball. Roll into balls, and place on a tray. Cover with a towel, and let it rise until double in size, about 30 minutes. Roll out the dough into 6 to 8 thin circles. Preheat the grill to high heat.

Lightly oil the grill. Place dough rounds on the grill, in patches, and cook for 2 to 3 minutes, or until puffy and lightly brown. Brush uncooked side with butter and turn over. Brush cooked side with butter and cook until underside is brown and the naan puffs up, about 2 to 3 minutes. Remove from the grill and repeat the process until all the naan has been prepared.

I tried this Naan recipe, which is excellent and easy to make (see photo above). I also tried it with some variations. For example, I used some whole wheat organic flour (15%), and baked it on my pizza stone in the oven, instead of grilling it. Both variations yielded excellent results: tasty, slightly chewy bread with aromatic flair.

Try to freeze the bread as soon as it cools after cooking, once it is reheated in a toaster oven, it has the out-of-the-oven freshness once again.

Enjoy! Salma St. John and Melodie Gates
Have the calls for social distancing in response to COVID-19 left you with cabin fever? Got squirrely kids? Here’s an activity that is timely, safe and fun. The goal is to see how many species of plants, animals and fungi you and your neighbors can record in your neighborhood.

It happens that the COVID-19 struck just as Spring is bursting out in many parts of North America. Outside is a healthy place to be, provided you’re alone … or six feet apart from others. There’s opportunity here. This activity uses the iNaturalist (iNat) app which employs Artificial Intelligence and crowdsourced experience to identify all manner of living organisms.

You may have used iNat to record fungi for the North American Mycoflora Project. iNat does even better for many plants and animals. Using iNat outdoors is a great way to help friends and family get their minds off the pandemic and tune into something that is bigger than humanity: the diversity of life that humans are one small part of. Putting names on organisms opens us to the realization that every distinct life form has a unique set of attributes and ecological requirements which the name allows us to probe.

To start a neighborhood project, one person needs to create a “collection project,” set a start date, and “create a place” that defines the boundaries of your neighborhood. Actually, you might need to find an experienced iNat user first, since in order to create a new place one “must post at least 50 verifiable observations via your account” (iNat doesn’t want a clutter of rarely used places). A collection project is essentially a filter that includes all observations posted within the boundaries of time and place. The person in charge of a project, called the Admin, can also remove silly or inappropriate postings.

Once a project is set up, invite your neighbors to participate. Have them create personal accounts and join the neighborhood project. Then participants go outside and take pictures of any plants, animals or fungi that strike their fancy, and upload photos to their iNat account. You can upload outside if you have a good cell signal and have downloaded the iNat app (iOS or android) on your cell phone. I usually take multiple photos of several things in the field, then select, crop and upload them when I get back home, using wifi.

Any photos with location data within the project boundaries that you upload to your account will be automatically added to the project. The easiest and most reliable way to do that is to take photos with a smart phone camera with GPS turned on. However, any camera will work. You can manually place your images on a map as you upload them to your account in the iNat web site. (You can also move an observation’s location manually if you don’t want your home location becoming public.)

Using iNat on a smartphone (outside or at home) lets you use a really fun feature: iNat’s artificial intelligence. To use
The AI, press the icon “Observe,” either take a photo or select one from your camera, press “Next,” repeat with several more photos if you have them, and press “What did you see?” In response, iNat gives you multiple options and you select the best fit (usually the first). If you’re way off base often other naturalists will suggest a better name. Recently I have been having fun challenging iNat by posting photos of distinctive-looking leaves just coming up, without flowers. I keep following the distinctive leaves until the plant flowers, then it is usually easy to get a solid identification – and see how smart iNat was before there were flowers!

iNat is pretty good at putting names on common things if the photos are clear. But there’s an art to taking good nature photos with a smart phone. Take several photos for each organism of aspects likely to be important for identification; take at least a general shot and a close-up. You can get special apps ($3) and lenses ($20) to do amazing close-up photography, which is usually helpful for small critters like insects. Most photo apps these days also let you crop and otherwise tweak your photos before posting to iNat.

This activity is best for adults and older kids. iNaturalist has a gamified app for younger kids called Seek. Both apps and instructions are covered in this article: Exploring Nature When You’re Stuck at Home.

The good news is that anyone, young or old, can be safe and have fun outdoors doing a virtual social activity with other curious naturalists. What’s more, there’s scientific value in having many eyes in many places at many times recording natural history. In aggregate, the recorded data add to our knowledge of the distribution and phenology of organisms and, over time, their responses to climate change. Such “crowdsourcing” is part of a growing citizen science movement.

Bill Sheehan is a recovering entomologist living in Athens, Georgia. He is president of the North American Mycoflora Project.
CITIZEN SCIENTISTS TO THE RESCUE
THE PAST, PRESENT AND FUTURE OF THE NORTH AMERICAN MYCOFLORA PROJECT

By Bill Sheehan, Joanne Schwartz and Sigrid Jakob

The North American Mycoflora Project (“NAMP”) was launched into the world at the annual meeting of the American Mycological Society at Yale University on July 14, 2012. It was born from an audacious vision: to create a complete ‘funga’ for North America – a comprehensive list of the continent’s fungi, supplemented by maps, images, voucher specimens and sequences for every single species. It would have been a step far beyond the incomplete and often unreliable patchwork of foray lists, monographs and herbarium inventories that currently makes up our understanding of the fungi of North America.

This ambitious enterprise never got out of the starting gate, mainly because it would have required hundreds of mycologists and millions of dollars in funding, dollars that no institution was able to provide.

And so the idea lay dormant, waiting for its moment.

The launch of a movement

By 2017, the world had changed. The “molecular revolution” had transformed mycology: DNA sequencing of fungi shed new light on relationships among genera, revealed their history, and allowed for a more confident identification of specimens beyond the murkiness of morphological characteristics. But even then, this powerful tool was still only available to the very few.

The vision propelling this new incarnation of NAMP as a newly incorporated nonprofit organization was just as bold as its predecessor – but also more realistic and inclusive. Instead of relying on a small cadre of overworked and underfunded mycologists to document the continent’s fungi, it would harness the efforts of the thousands of mushroom enthusiasts who already spend their weekends surveying America’s forests and wetlands, reserves and parks. We believed that, equipped with the right protocols, these citizen scientists could do the collecting and vouchering and we could get their collections sequenced. Together, we could vastly expand the knowledge of our native fungi.

And so, in 2018, the North American Mycoflora Project was reborn thanks to the perseverance and dedication of a few volunteers, coupled with the support of generous sponsors and donors, including the North American Mycological Association. In just two years, over 160 projects have seen the light of day. These projects span a broad geographic range, from Alaska to Puerto Rico, Hawaii all the way to Greenland. Projects range in scale from local and regional to continent-wide, and include forays and taxon-focused projects (such as Cortinarius, Inocybe, Russula, Boletales, Bankeraceae, polypores, crust fungi and others).
While most projects are led by unaffiliated mycophiles, a good percentage are connected to mushroom clubs, civic organizations (such as the Great Plains Nature Center, Potter Valley Tribe), educational institutions (such as Valdosta State University, Glen Urquhart School), government organizations (such as Northwest Territories, Florida Department of Agriculture and Consumer Services) and national parks (such as Boston Harbor Islands, Glacier National Park). There’s even a project that aims to find and sequence mushrooms described by Charles McIlvaine around Philadelphia more than a century ago.

Almost 4,300 specimens have been sequenced to date from the various individual projects, with results posted on MycoMap and some also on MyCoPortal and Genbank. Among these are very rare species like Lachnum halesiae found on Halesia carolina; an undescribed species in the family Hymenogastraceae; an undescribed Callistosporium; and undescribed species in Amanita such as Amanita sp-N68 and in Russula, including Russula sp-IN58 and Russula sp-IN99.

NAMP data has also helped clarify species: for example, Jean Lodge, University of Georgia and NAMP board member, is working with members of two NAMP projects (South Sound, WA and Long Island, NY) to sort out three species of Chromosera formerly thought to be one. These species includes Mycena lilacifolia Peck, which will be resurrected in the genus Chromosera and taken out of synonymy with Chromosera cyanophylla.

Other species that have been taken out of synonymy thanks to NAMP data include Calvatia lilacina (which we now know is not same as C. cyathiformis); Bolbitius variicolor taken out of synonymy with B. titubans; and Amanita pantherinoides, which has been discovered to be a valid American species and not a synonym of A. pantherina.

In addition, two Continental Mycoblitzes – “virtual” forays open to anyone with an iNaturalist account – have resulted in 5,285 observations of 1,165 species, by 220 participants. Almost 600 sequences have been posted so far and more will be processed once the Aime Lab at Purdue University resumes working after the COVID-19 lockdown.

Beyond the numbers, NAMP has made its mark in other ways: it has allowed regular mycophiles and mushroom clubs access to tools previously reserved for scientists. It has inspired them to become better citizen scientists, to learn new skills and come to a deeper understanding of this very special kingdom.

Learning as we go
As was to be expected, the ambitious enterprise of democratizing molecular analysis and engaging hundreds of citizen scientists in the process was not without teething pains: the labs that did our sequencing weren’t always able to accommodate our idiosyncratic workflow, our participants didn’t always follow protocols on how to submit their specimens, and not all sequences are easy to
interpret by nonscientists, to name but a few of our most prevalent issues. By the end of 2019, we had to ask our participants to hold off on sending any more specimen tubes; we were officially on hiatus. This forced break, while frustrating, proved to be a blessing in disguise. While we were busy having conversations and a round of sequence and data-flow tests with a potential sequencing partner, we also did some soul searching. We were proud of what we had achieved in just two years, but we wondered, was there an opportunity to make an even greater impact?

In talking to enthusiastic amateurs, we often heard that they found us intimidating. And we’ll admit that it takes a certain amount of dedication to document a collection, dry the specimen, send it in for sequencing, make sense of the results, and send it to a fungarium. This means our participants are a relatively small but dedicated group, self-selected for their willingness to engage with our protocols. On the other hand, platforms like iNaturalist and Mushroom Observer have demonstrated that there are tens of thousands of people passionate about fungi, people who are willing and able to create records of their finds. We accepted the challenge to make NAMP accessible and inviting to more participants.

**Fungi under attack**

The other question we asked ourselves was about our impact in the world. Participants love that sequencing has the power to resolve thorny ID questions and help put a name to a mysterious find. But to see NAMP purely as a tool for identification is vastly to underestimate its potential.

Today, fungi are under threat like never before. Habitat destruction, pollution and climate change mean that fungi are going extinct or changing distribution faster than humans can document. Underfunded mycology departments and a loss of “alphataxonomists” mean there are fewer individuals with the time and expertise to catalog and map. And, because institutions and the general public don’t understand the critical contribution of fungi to ecosystems, these manifold threats will not change anytime soon.

However, these threats do create an opportunity and an urgent need to put NAMP into the service of conservation as a tool to help document and even protect rare and endangered species, or a way of tracking species that are harbingers of climate change. These data could support plans and policies for land management and habitat restoration, as well as Red List species submissions. We might help connect clubs and individuals with organizations needing fungal surveys for threatened habitats. We could partner with scientists doing research on rare or threatened species or the impact of climate change on the natural world, and supply an army of foot soldiers to collect and document them.

**A new organization for a new world**

It is clear that there is an opportunity for NAMP to engage more people and make a greater impact in the world. But tweaks to our current organization wouldn’t be enough to make this happen. That’s why we took this hiatus, as an opportunity fundamentally to rethink who we are and how we operate – a complete reboot, if you will.

The new NAMP will relaunch in early August 2020.
Our mission will be expansive and inclusive: to equip citizen and professional scientists with the tools to document the diversity and distribution of fungi across North America.

For a start, we’re ditching our name. Having the botanical term “flora” in our name is directly at odds with our desire to be champions of our very own kingdom, Fungi, so it had to go. We’ll reveal our new name on our relaunch day, but suffice to say it reflects our mission.

We have a new sequencing partner in the Barcode of Life Data System (“BOLD”), based at the Center for Biodiversity Genomics at the University of Guelph, Ontario, Canada. BOLD is able to analyze high volumes at low cost with a predictable turnaround time. This partnership will clear the DNA-sequencing bottlenecks and offer other advantages, such as easy GenBank submission.

Come participate!
So if you’re already participating in a NAMP project, welcome back! You’ll be hearing from us soon about all that is new, as well as what to do with your samples.

And if you’re merely curious, and would like to find out more, sign up for our Funga Decoded eNewsletter (https://mycoflora.org/email-list) and Deep Funga Blog (https://mycoflora.org/index.php/resources/blog), and follow us on Facebook at https://www.facebook.com/mycoflora and Instagram at https://www.instagram.com/na_mycoflora/. We have all kinds of exciting announcements to make. We’ll be opening a new round of sequencing grants to help more projects sequence even more specimens.

Participating has never been easier – or more important. We look forward to a world in which citizen scientists of every experience level come together to collect valuable data to increase awareness of the critical role of fungi in the health of our ecosystems, allowing us better to protect them in a world of rapid climate change and habitat loss.

About the authors
**Bill Sheehan** is the President of the North American Mycoflora Project. He’s a recovering entomologist who discovered fungi seven years ago after starting and running national environmental policy nonprofit organizations. He’s leader of the Northeast Georgia Funga NAMP project.

**Joanne Schwartz** is Vice President of the North American Mycoflora Project. As a naturalist who has studied fungi for over 50 years, she leads the Macro Fungi of the Channel Islands (CA) NAMP project.

**Sigrid Jakob** is an amateur mycologist, citizen scientist and NAMP project leader for Fungi of NYC, with a particular interest in coprophilous fungi.
On June 10, Michael Beug, alerted by Paul Kruger, wrote to NAMA’s toxicology consultants, asking us to alert fellow members of Mushroom groups of a recent Listeria outbreak across the nation caused by contaminated commercially grown Enoki mushrooms. [https://foodpoisoningbulletin.com/2020/enoki-mushroom-listeria-outbreak-ends-with-36-sick-4-dead/](https://foodpoisoningbulletin.com/2020/enoki-mushroom-listeria-outbreak-ends-with-36-sick-4-dead/) This alert drew quick response from Debbie Veiss, Rick Van de Poll Dennis Desjardin, Denis Benjamin, Tim Baroni, and others who all agreed that mushrooms, including those obtained from commercial sources must be well cooked to assure safe consumption. I was asked to comment and am including here my response sent originally to the Mid-Hudson Mycological Association on June 11.

Enoki or Enokitake is the Japanese name for *Flammulina velutipes* ("Velvet Foot" #63 in Lincoff’s Audubon Guide, description on p. 759; aka Velvet Footed Collybia, Velvet Shank, Futu, Golden Needle, or Winter Mushroom, elsewhere.) When cultivated without light and with CO2 enrichment, *Flammulina* becomes bleached and elongated in appearance. Since cultivated *Flammulina* are widely-sold in grocery stores, you should ensure that they are fully cooked before eating them.

*Flammulina* is widely considered a choice edible, but as we know from poison control records and NAMA’s registry of cases, it is not at all uncommon for ‘edible’ mushrooms to be associated with toxic effects. In this case, the Listeria outbreak was apparently caused by early contamination of the commercial product in Korea, and probably enhanced by containment in packaging during shipment and storage.

In our area, *Flammulina* is often associated with the death of Elm trees initiated by the Dutch Elm Disease (*Ophiostoma ulmi*). *Flammulina* follows Dutch Elm Disease in the natural progression of fungi which exploit this habitat and favors the sugar-rich layers of the cambium just under the bark. In the Hudson Valley, I have found *Flammulina* fruiting in every month of the year. As it grows here, it often causes the bark to pop off and fall from the tree. During this stage *Flammulina* might be considered to be ‘packaged’ in a way not unlike the commercial packaging – compact,
moist, crowded and subject to contamination by other fungi and bacteria. When collecting this ‘choice’ mushroom for the table, it is prudent to discard any which have signs of rot, decay, or contamination. I know, this sounds like such common sense practice that it shouldn’t need mentioning. Yet I am continually amazed at foragers who bring to me a half rotten mushroom and invariably ask the question: “Is it edible?” Well, if it were a zucchini, would you eat it?


Fortunately, as Paul Kruger states in his letter to Michel Beug, [reproduced below] cooking *Flammulina* solves both problems: it kills Listeria and destroys flammutoxin.

Bill Bakaitis

Paul Kruger’s June 10, 2020 email to Michael Beug describes the concern eloquently:

“Enoki mushrooms from Korea have been of concern to both Canadian federal and British Columbia provincial health authorities because packaging, transportation and shelf-life may compromise the food hygiene of these products. Eating of raw or only lightly cooked Enoki or *Flammulina velutipes* mushrooms could result in microbial-caused illness if they are contaminated. Also *Flammulina velutipes* has a toxic hemolytic protein dubbed flammutoxin which is not heat stable. Good news, both microbial and hemolytic problems seem to be solved by adequate cooking.

“A couple years ago I became concerned about some Enoki mushroom products displayed in markets, and I made inquiries to appropriate individuals in various relevant agencies about health concerns with market mushrooms. My result was a distinct impression that the potential for problems was on the radar, but the mushrooms were still allowed importation because they met requirements for safe packaging. I’ve been bothered by the lack of instruction labels on market mushrooms, perhaps they could have a little sticker stating, “Cook before eating.”

“I recall from conversations that variable packaging was of special concern, with some shrink-wrapped and air-impermeable packaging causing concern of potential botulism. Problems with both the merchants’ and consumers’ unfamiliarity with the product may contribute to problems. I’ve seen with my own eyes some wretched samples of these mushrooms displayed in shops with murky fluid lurking at the bottom, mold at the top and who knows what in between.

I’d guess the best Enoki are freshly picked, locally grown, and cooked well in a delightful dish.”

Paul Kruger
In *Shrek 2*, Shrek, Donkey, and Puss in Boots embark on a quest to fix Shrek and Fiona’s martial problems after her father tries to have Shrek killed. The trio steals a potion entitled “Happily Ever After” with a label saying, “beauty divine.” Shrek hopes that the potion will make him into someone Fiona would have been happier to marry, but before he drinks it, he sneezes a bit of the potion onto a nearby mushroom, and Donkey has a sip. We then see Shrek turn into a man, Donkey turn into a horse, and the mushroom turn into a rose.

Ogres are a mythical creatures, but because Shrek consumes organic material (he eats rats), breathes oxygen (he burps and farts), is able to move (he runs), reproduces sexually (he has children), and grows from a hollow sphere of cells, the blastula, during embryonic development (demonstrated by his children in *Shrek 3*): Shrek falls into the kingdom of Animalia along with Donkey.

Because Shrek turns into a human man and Donkey into a horse, they both transform within the kingdom of Animalia. However the mushroom transcends into Plantae from Fungi which is unexplained. Not only does the fungi not remain within its own kingdom, but it moves into the kingdom that is least genetically similar amongst the three main Eukaryotic kingdoms: Fungi, Plantae, and Animalia. It is entirely nonsensical for the mushroom to become a rose when it is more genetically similar to a bearded dragon, a dodo bird, or even the reader of this article.

These kingdoms branched out from their common ancestral eukaryotic branch at different times. With Fungi and Animalia branching off together under Opisthokonta. Defined in the textbook *Biology 2e* by lobe-like pseudopods or a single flagellum in the rear, making humans and mushrooms much more genetically similar than mushrooms and roses. Plantae belongs to Archaeplastida which only emerged as a branch after the origin of chloroplasts.

The potion’s label claims it creates “beauty divine” in the consumer, so the subsequent species transformations are insulting to the beauty of all donkeys, ogres, and mushrooms. The idea that horses, humans, and roses are inherently more beautiful species is unsupported and offensive.

Also, Shrek clearly sneezes the potion onto the cap of the mushroom, but none of it goes onto the ground. Mushrooms absorb their food (nutrients) through mycelium which exists underground. They do not “eat” through their caps, so the potion would not have been absorbed this way, and in snot form no less. Shrek and Donkey on the other hand had to drink their portions of the potions in order to feel its effects, and according the Shrek Wiki, the potion user is referred to as the “drinker.”

Finally, we see the mushroom transform into a rose in exactly 117 seconds, but Shrek and Donkey transform for 119 seconds, when in reality a large animal takes much longer than to digest liquid. In a human, drinking water takes around five minutes to appear in the bloodstream, and 75-120 minutes to be completely absorbed, according to a study in *Outside* magazine’s *Sweat Science* column.

These inaccuracies teach *Shrek 2* fans incorrect information about biology, leaving them unprepared for the scientific world and the very nature of fungi that our planet relies on for survival. It is this sort of misinformation in the media that makes fungi the most unappreciated eukaryotic branch in the world to this day.

Camryn Sanchez is a freelance writer based in El Cerrito, California who works in print and radio reporting. Her work has appeared in the East Bay Express, the Phoenix, Oakland Magazine, and the East Bay Monthly. Camryn is a student at Sarah Lawrence College, and lives with her two guinea pigs Pierogi and Froot Loop. She believes that fungi might just save the world.
2020 Annual Photo Contest Rules

Eligibility. The Photo contest is open to all mushroomers. NAMA membership is not required to enter. Images that have previously won (including honorable mention) are not eligible. Up to 15 images may be entered per person, with a maximum of 6 in the Pictorial, 6 in the Documentary and 3 in the Judges Option to make a total of up to 15 images. Closing date: All entries must be received by the Contest Director on or before September 1, 2020.

Subject Material. For Pictorial and Documentary, organisms from the Myxomycota (slime molds) and the classes Basidiomycetes and Ascomycetes of the Eumycota (“true fungi”) are eligible. For Judge’s Option, nearly anything goes, so long as the theme relates to fungi, and fungi are a key element of the photograph.

Entry Divisions, Limited or Advanced. If you won first, 2nd or 3rd place 2 or more times before, then you must enter in the Advanced division. If you won fewer than twice before, then you can enter the Limited Division.

Categories

Pictorial. This division is for single photos that illustrate the beauty and variety of fungi in form and color. Mushrooms should not be cut or turned over and look natural. Judging criteria include consideration of both technical (focus, depth of field, exposure, lighting, color, absence of distracting elements) and artistic (composition, color, background, lighting) aspects.

Documentary. For single photographs especially suited as illustrations in a field guide of monograph, or for use in a lecture. Emphasis is placed on portrayal of key morphological characteristics such that the usefulness of the image as an identification aid is maximized. Subjects may be shot in the field, laboratory or studio and the photographer has complete freedom to cut, process, manipulate, or orient the specimen in any desired manner to achieve the goal. Close-ups of single features and photomicrographs are acceptable. Judging criteria will be the same as in the Pictorial category but they will be of secondary importance to the overall mycological utility of the photo. Accurate identification of the subject will be a consideration.

Judge’s Option. For single photos or series which do not fit into the Pictorial and Documentary divisions. Examples include time-lapse series, ecological relationships of fungi (e.g. fairy rings), fungi with animals, people enjoying fungi, humor, etc.

Awards. First, 2nd and 3rd place will be awarded in Pictorial, Documentary and Judges Option. Honorable Mentions will also be noted for some Pictorial and Documentary photos. This year award certificates will be emailed or given to first through 3rd place winners.

Marking, Listing and Submitting Digitals. Let us know if you are entering the limited or advanced division. The digital photos file name can include 3 things, D (for Documentary) JO (for Judges Option) or P (for Pictorial), and you the photographer initials, followed by the Genus and species of the fungi or the title for the Judges Option photo. Digital images may be emailed or mailed on a CD or DVD and will not be returned. Mail images to John Plischke III, 411 Center Avenue, Greensburg, PA 15601, 724-832-0271, Fungi01@aol.com. If emailing in images please include your name, address and phone number. Images can also be submitted using free file mailing programs such as http://www.mailbigfile.com/ or Dropbox, etc.

Reproduction. Entry in the contest constitutes the consent of the photographer to allow NAMA to reproduce copies of each winning image (including Honorable mention etc.) for circulation or use by NAMA Committees, among the membership, NAMA brochures, signs, advertising and affiliated societies. NAMA also reserves the right to post images of the winning images on the NAMA web pages and in The Mycophile and to be used by the marketing committee. All copyrights remain with the photographer.

Photo of You. If possible please include a photo of yourself, so we can use it to introduce the photographers. This is not a requirement and the photo of yourself is not counted as an entry. It has also been requested that we start to collect data on where the mushroom photo was taken. We don’t need GPS coordinates, but it would be helpful to have a city/county/park/state name – something basic to post on the site for future reference.
ANNOUNCEMENTS

NAMA will be offering a monthly program showcasing and sharing the knowledge and skills of members. We will make these presentations available to all NAMA members.

We are seeking proposals from you, NAMA member, for a Zoom-presentation on any mushroom-related topic.

Presentations should be about 45 minutes long so that there is time for some Q&A. If you’re not familiar with making Zoom presentations, we can provide some guidance.

We will pay an honorarium for all presentations; proposals will be chosen by a small committee appointed by NAMA officers.

Submit your proposals by July 30 to Melodie Gates: treasurer@namyco.org

OFFICIAL NOTICE OF ANNUAL MEETING SCHEDULE

Due to COVID-19, NAMA's annual meeting, which traditionally takes place at the annual foray, will be held in 2 segments in Zoom meetings.

July 13, 2020: 7:30–8:30 pm central daylight time. Annual reports from NAMA officers will be presented, the location of the 2021 annual foray will be considered, and the end of fiscal year budget report will be presented. Preliminary fiscal year 2021 budget will be considered.

October 5, 2020: 7:30–8:30 pm central daylight time.

Committee chairs and regional trustees will present their annual reports, officer and regional trustee elections will be held, fiscal year budget planning will conclude.

According to NAMA's policy manual, “each Affiliated Club is entitled to appoint a member of its club, who is a NAMA member, to participate in the annual Trustees Meeting as a full voting member.” Committee chairs, regional trustees, institutional trustees, and elected officers attend this meeting.

I invite any other members who would like to attend to contact executive secretary Bruch Reed for the details: executesecretary@namyco.org