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AMS LEADERSHIP

Board of Directors:

President: Alisha Millican Vice President: Anthoni Goodman Treasurer: Spencer Lowery Secretary: Cassie Pugh

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Baldwin County: Kat Williams, Tammy Kinney Cullman County: Cassie Pugh & Jessica Jackson Tallapoosa County: Becca Mahoney Jefferson County: Spencer Lowery Madison County: Charles Tyler Other: Tim Pfitzer, Jesse Azobek

Newsletter Staff:

Flown Kimmerling $\widehat{\top}$ Cassie Pugh $\widehat{\top}$ Alisha Millican $\widehat{\top}$ Kat Willowtree $\widehat{\top}$ Kit King $\widehat{\top}$ Leigh Maness $\widehat{\top}$ Spencer Lowery $\widehat{\top}$ Kaitlyn Ledbetter $\widehat{\top}$ Becca Mahoney $\widehat{\top}$

Collection Crew:

Alisha Millican \uparrow Becca Mahoney \uparrow Bucky Raeder \uparrow Cassie Pugh \uparrow Charles Tyler \uparrow Erin Braley \uparrow Flown Kimmerling \uparrow Jan Newton \uparrow Jennifer Taylor \uparrow Kelcie Brown \uparrow Kevin Hébert \uparrow Kit King \uparrow Kristi Zoebelein \uparrow Louise Littles \uparrow Tammy Kinney

AMS MISSION:

Our mission is to educate the public about mushrooms, their identification, various uses and scientific, culinary and environmental value, whilst prioritizing safety; and to promote advancement in the science of mycology.

APPLYING THAT MISSION:

The field of mycology is always changing and growing, and we're here to help people catch-up and understand both identification and re-classification of species and genera that grow in our backyard. We have probably hundreds of unidentified species of mushrooms thriving right there in Alabama, and we seek to help create classifications for those mushrooms by working closely with herbariums, botanical gardens, & citizen scientists like you! But more importantly, we have a ton of fun foraging for elusive mushrooms, identifying them together, and eating the best of them!

E: almushroomsoc@gmail.com W: https://alabamamushroomsociety.org/

April Showers...

bring mushrooms & wildflowers! Spring has sprung, and we hope you are making the most of the pleasant weather by getting out and exploring all that Alabama's woods have to offer.

We are excited to announce our speaker for the April meeting is Spencer Lowery! Be sure to check out our events list (on page 2) which includes: upcoming forays, scheduled presentations, meetings, and other events.

HAVEN'T RENEWED YOUR AMS MEMBERSHIP YET?

Now is the perfect time! <u>Benefits include:</u>

- \uparrow free monthly guided forays
- \uparrow members-only events
- $\widehat{\ }$ discounted or waived rates & first-notification of educational lectures
- \uparrow \$5 off a membership to the NAMA
- ↑ access to AMS lending library
- \uparrow access to lender microscopes & supplies
- \uparrow a vote for board-member elections
- $\ensuremath{\widehat{}}$ access to our private online "Members' Lounge"

Ilustration by Kaitlyn Ledbetter

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UPCOMING EVENTS

Click **HERE** for more info or to register for an event!

April 2	AMS Monthly Meeting
April 2	Virtual Journal Night (ANJC)
April 5-7	-Natural Bridge Park BioBlitz
April 6	-Jefferson County Foray CANCELLED
April 13	-Cullman County Foray
April 13	-Baldwin County Foray
April 17	-Virtual Journal Night(ANJC)
April 20	-Elmore County Foray
April 21	-Madison County Foray
April 27	-Nature Journaling Meetup (ANJC)
	April 2 April 2 April 5-7 April 6 April 13 April 13 April 13 April 20 April 21 April 27

MEETING INFORMATION

AMS meetings take place the first Tuesday of the month at 7pm CST via Zoom and are open to the public. Join us April 2nd. After our normal business announcements, Spencer Lowery will be presenting to us on <u>Neurodivergence in Mycology</u>.

LINK TO AMS MEETING

Meeting ID: 856 5414 7095 Passcode: 981571 us02web.zoom.us



Microscope & Book Lending Program for AMS Members

AMS has two compound microscopes with all needed supplies to perform fungal microscopy. This includes slides, immersion oil, cover slips, tweezers, razor blades, mounting chemicals, etc. Members must complete one of our microscopy courses or otherwise demonstrate proficiency in using a compound microscope in order to borrow one.

We also have a lending library! Available books can be viewed HERE! It works just like your public library; you may borrow a book for two weeks and then bring it back.

BioBlitz @ Natural Bridge Park

Join Wild Alabama staff & state scientists to record as many species as possible on the iNaturalist app at Natural Bridge Park.

April 5-7 Scientists on site

April 6, 10am-3:00pm Public Citizen-Science Session with Wild Alabama Staff @wild_alabama



WILD ALABAMA is hosting its first bio blitz at Natural Bridge Park! Come hang out with the scientists with your iNaturalist app! CLICK HERE to sign up!

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2024 SCAVENGER HUNT

Join us on a treasure hunt for fungi! Pick the tier level that corresponds to your skill level and find and document the fungi on that list. From brand new fungiphiles to seasoned experts, we have a list for you! You have all of 2024 to find them, and winners will be announced at our February 2025 AMS Meeting. Have fun finding new and interesting fungi and have the chance to win prizes while you're at it!

Must be a paid AMS member to participate. Full rules and lists of fungi HERE.



1. DOWNLOAD THE INATURALIST APP ON YOUR SMARTPHONE OR ACCESS IT VIA THE WEBSITE, www.inaturalist.org.

2. SIGN UP FOR FREE TO MAKE YOUR ACCOUNT.

3. JOIN THE INATURALIST PROJECT TITLED "AMS 2024 SCAVENGER HUNT" MUST BE A PAID AMS MEMBER TO WIN!

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THE SEQUENCING SCOOP

By Alisha Millican

Since we began doing DNA sequencing in 2021 with our very first FunDiS grant, we have sent out nearly 2000 samples to better understand and document the fungal diversity in Alabama.

Every month, I am going to highlight some of the results that we have gotten back in the preceding month, but you can look at all of the results in the iNaturalist project HERE.

Initially, observations were only added to this project when results came back. When we reached a certain quantity, it was too difficult keeping track and now everything that is sent out for sequencing is added. So, there are some fungi that were sent that have not been added yet, and some added that do not have results back. If an observation doesn't have a DNA Barcode added yet, check back in the coming months!

HUGE thanks to our AMS Collection Committee who put in a ton of work documenting and collecting sequences! All collections get sequenced and vouchered at the University of West Alabama Herbarium. If you are interested in learning to make scientifically valuable collections with us, check out details on our website HERE.

UNDERSTANDING PROVISIONAL NAMES

When you see a species name (or genus name) with a state abbreviation (or providence or other locale) with a number, these are called "provisional names" (abbreviated Nom. Prov.) and should always be in quotation marks.

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Cortinarius hesleri

I had this *Cortinarus section Dermocybe* brought to me by a very excited kid during a foray in Jefferson County. Since it wasn't dug up, the base wasn't attached and the basal mycelium that would help us ID the species wasn't intact. Sequencing was able to tell us that it is *C. hesleri*.





Lentaria byssiseda

Collected by yours truly in Lawrence County. This was fruiting prolifically with huge mycelial mats and the mushroom pushing up through the leaf litter.

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Inocybe "sp-IN86"

I collected this *Inocybe* in Cullman County. Sequencing ID's it as *Inocybe "sp-IN86"* the 86th un-named *Inocybe* to be first sequenced from Indiana. This is a genus that would benefit from wide collection and sequencing!



Panus lecomtei

I was surprised by this sequencing match, due to not matching the typical color or substrate I am used to seeing with *P.I.*

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Tremella "sp-AL01"

This species has been a mystery for me for a couple years now. I've found it several times in Cullman County and never could quite decide what to call it, but had settled on Phaeotremella. Sequencing shows that it is actually a *Tremella* in a clade. After scouring the literature, I'm pretty confident this is an undescribed species.





Harpographium fasciculatum

This unusual fungus erupting from under the bark of a dead *Salix* stem is quite fetching, in my opinion! This is the anamorph of a yet-to-be-discovered teleomorph fungus. It is the type species of the genus *Harpographium*. Collected in Cullman County.

65 - EVENTS A YEAR

50+ FORAYS

Monthly Foray

February <mark>-</mark> October in 5 counties: Baldwin, Cullman, Tallapoosa, Jefferson, Madison

Morel Foray

Jefferson county in the spring. Hosted with Feral Foraging and Magic City Mushrooms.

Chanterelle Foray

June - August central and north Alabama.

Black Light Foray

February - October central and north Alabama.

15 + OTHERS

Monthly Speaker

February - October a new guest speaker each month over zoom.

AMF

Alabama Mushroom Faire is in the fall: forays, talks, vendors, food, and more.

Others

Microscopy, Dyeing with mushrooms, Birds and mushrooms, How to use a field guide, Nature Journaling Mushrooms, and more events.



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MUSHROOM OF THE MONTH

Cedar-Apple Rust (Gymnosporangium juniperi-virginiae) -- by KIT KING



As you're hunting for morels this Spring, give your eyes a break from scanning the forest floor and look up! If there are Eastern Red Cedars, (Juniperus virginianae} nearby, chances are you may find the orange-tendrilled, alien-like fungal galls of Cedar Apple Rust dangling from the leaves. This amazing rust has a two-year lifecycle that travels through two hosts, utilizes 4 unique spore types, and requires both air currents and insects to complete. As an obligate biotroph, Cedar Apple Rust requires living plant hosts to survive, and all species of Gymnosporangium alternate between Juniper (Juniperus) and Rose (Malus) species.

The first signs of Cedar Apple Rust appear in early spring on apple leaves. About two weeks after petal fall, thickened yellow lesions surrounded by reddening halos begin to form on the upper surface of infected leaves. These lesions are

spermatogonia. They produce a spore type called spermatia--which are essentially gametes, germ cells with a single set of chromosomes within their nuclei. Spermatogonia also produce a sticky substance which attracts insects. As they travel from leaf to leaf in search of this tasty exudate, insects inadvertently pick up and transport spermatia (n) between different lesions, facilitating fertilization (n+n). Fertilized spermatia produce mycelium which travels downward through the leaf tissue and erupts in tube like projections called aecia on the bottom surface of the leaf. In summer, aecia produce aeciospores (n+n), which are dispersed by wind currents. If an aeciospore lands on a leaf or bud of its primary or telial host, the Eastern Red Cedar, the lifecycle continues.

At this stage in its development, the fungus has jumped hosts! Aeciospores will overwinter on the terminal buds of Juniper and begin to form small brown, gall-like structures the following spring. The growths continue to develop through the next summer and fall, overwintering again for a second time. When heavy rains arrive during the second spring, the galls, now up to two inches in diameter, sprout gelatinous orange protrusions called telial horns. These horns produce yet another type of spore, two celled teliospores (n+n).

Also known as resting spores, teliospores have thickened cell walls which allow them to survive adverse conditions for up to 2 years! During dry weeks, telial horns will completely desiccate and wither, but the

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resistant teliospores are able to survive, ready to resume their function when conditions are favorable. When the rains arrive again, teliospores undergo karyogamy and germinate to produce diploid basidia. The lifecycle is nearly complete. Cells in the basidia (2n) undergo meiosis to become haploid basidiospores (n) which are ejected into the air and dispersed on wind currents. The basidiospores drift in the air, sometimes up to several miles away from their Cedar host. If conditions are right and moisture is present, spores that land on a nearby apple leaf or branch will germinate, quickly infecting their new host as they penetrate the leaf tissue. The life cycle is complete and within a few weeks the characteristic bright vellow lesions of Cedar Apple rust begin to appear on the foliage of infected trees.

Gymnosporangium juniperi-virginianae is extremely common in Alabama where cedars line the highways and edges of most pastures. Infected trees will sometimes be heavy with galls, which appear as large orange masses in the branches during rainy weather. In fact, it's not unusual to see Cedars infected with more than one species of Gymnosporangium rust at a time.



Although the galls may cause die back of branches and leaves on Cedar trees, Apple hosts are the most negatively affected by Cedar Apple Rust. Infected Apple trees produce less fruit and may even die from the infection. Apple farmers may use a fungicide regimen to combat Cedar Apple Rust, but it can be difficult to control. Rust resistant varieties of Apple trees have a much better chance of survival, and your local county extension can often help you choose a hardy option.

Rusts are all around us! Their life cycles and fruiting bodies are intricate and complex. Keep an eye out for twisted or deformed foliage and plants with patches of discoloration and you will start to realize how common these incredible fungal pathogens really are. If you carry a macro lens or a small jewelers loupe with you on your walks, you can take a closer look at these amazing organisms and their beautiful spore producing structures. You might actually find yourself excitedly looking forward to "Rust Season"!

PHOTO OF THE MONTH

MARCH CONTEST WINNER



Astraeus sp.

Observed in Macon County, March 2, 2024. Submitted by Jason Dattilo. SUBMIT YOUR OWN MUSHROOM PHOTOS TO NEXT MONTH'S CALENDAR CONTEST ON OUR Facebook page

eftefte FUNG-EYE CANDY eftefte notable photos curated by Leigh Maness & AMS staff



Coprinellus micaceus group by Rocky Nadrich



Morchella americana by Brad Lackey



Clitocybaceae by Flown Kimmerling



Phellinus sensu lato by Leigh Maness



Morchella americana by Cassie Pugh



Calocera sp by Bucky Raeder



Flammulina velutipes by Zack Lawrence



Urnula craterium by Becca Mahoney



Helvella queletii by Flown Kimmerling

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BOOK REVIEW: VICTORIA ROMANOFF'S <u>MUSHROOM FORAGING & FEASTING:</u> <u>RECOLLECTIONS FROM A LIFETIME ON THE HUNT</u> by Jason Utley

The first thing you will quickly notice when you crack the cover of Ms. Romanoff's book is the density, richness, and heterogeneity with which she writes. It's not a long narrative--at a modest 120 pages--with recipes, anecdotes, and welcome interruptions scattered throughout. I will admit my bias towards this arrangement, as I like my mushroom stories much like my hunts – frantic and interspersed with variety, but deeply satisfying none-the-less.

She has a flair for condensing vivid imagery in a few sentences with just enough detail to preserve the feelings attached. No time is wasted in the introduction as she simultaneously pulls you into her first mushroom hunt and the history of her world. Her first encounters with foraging occur in the austere setting of a displaced persons camp during the tail end of WWII at the tender age of 4.

Her strategy (once her introduction has firmly convinced you to continue) is to walk you through the seasons as various snapshots of her life, moment by moment and mushroom by mushroom (most species not unfamiliar to even a novice). In



the transition between seasons, she's included various "Outings" which look to be excerpts from a mushrooming journal of sorts. One of the interesting devices in her writing is the contrast of scenarios from intimate local roadsides to scenes from many of her world travels and experiences as a restaurateur. She whisks you seamlessly from foraging roughshod through brambles to timeless locations where you're soon salivating over her heady descriptions of fungal dining throughout New England and the Old World.

I won't spoil the details, but she manages to say all the things needed as her own historian, as a mushroom hunter, as a child discovering a passion, and as an escort to those both familiar and unfamiliar with the mushroom world. She conveys all of this with honesty but also with enough whimsy that you almost forget the setting.

continued on next page...

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Her recipes are simple and direct with modest flourish. From a Bolete custard tart to Slippery Jacks on skewers, they're easy to duplicate- and preserve the essence of their prime ingredient. On a personal note, I took one wink and one exception to her assessment of Slippery Jacks. Firstly, I appreciated their inclusion as they are one of my personal favorites and rarely get any mention in a culinary sense – a very misunderstood shroom indeed. Second, I sharply object to her description of them as lacking a "deep or distinctive flavor". Your mileage may vary but I always dehydrate mine first and find that they have a richness that rivals any other Bolete I've sampled. However, I won't take that slight indiscretion personally.

All in all, it was a thoroughly enjoyable and casual read. Victoria brings forth a uniquely Baltic-Russian-American perspective from her life as a cultured mycophagist. The photography (by Sarah Adams) is measured, and the tones and layout have the campy appeal of an old photo album/cookbook with the freshness of modern sensibility. There is little to nothing scientific going on save a few necessary and common descriptions for the layperson, (technicality is not the point of this book anyhow) and much like a mushroom foray it meanders from hunt to table to basket to field. It held my attention as living nostalgia that I will always indulge whether it was penned by Ms. Romanoff or a non-descript friend stretching out time in the deep Appalachians.





April 2024

ALABAMA MUSHROOM SOCIETY 2024 CALENDAR

Plus an In-Season Guide



Click to purchase a copy from the AMS Etsy shop!

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FUNGI: FACT OR FICTION?

by Cassie Pugh



Scroll to next page for the answer!

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FUNGI: FACT OR FICTION? (ANSWER)

by Cassie Pugh

FACT!

When we contemplate the largest organism on Earth, our minds may wander to the giant Blue Whale (which can weigh up to 400,000lbs) or even the towering Redwood trees (which can grow to heights of over 360ft)—but most people would be surprised to learn that a fungus is actually the largest organism on Earth by a long shot!

Scientists discovered a massive mycelial mat while researching extensive tree deaths within the Malheur National Forest in Oregon. Through DNA sequencing, it was found that this parasitic fungus had spread to trees several kilometers away from sampled trees. This ultimately led to a large survey which mapped out the unbelievable network which the fungus had created.

This "humongous fungus", found in the Blue Mountains of Oregon in 1998, consists of a large mycelial mat of *Armillaria ostoyae* which covers around 10 square kilometers. It is estimated to weigh up to 37,000 tons, giving it the title of the largest living organism on Earth.

So how did this fungus grow to such a **humongous** size? According to Forest Pathologist Mike McWilliams, part of the reason is the long history of fire suppression as a dominant method of forest management. Regular controlled burns could have likely reduced the proportion of highly susceptible hosts, creating a functional, healthy forest.





Armillaria ostoyae on Sitka Spruce (Washington State) - Observation by Drew T. Henderson

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MOREL & REDBUD QUICHE

By Spencer Lowery	
 INGREDIENTS:	QTY:
 Morel Mushroom(s)	2/3 cup
 Peppers (optional)	1⁄2 cup
 Shallots or Onions	1 cup
 Cheese (dry is best)	1-2 cups
 Heavy Cream	1 cup
 RedBud Flowers (or spinach)	1 cup
 Pie Crust	1 ea
 Large Eggs	4 ea
 Garlic Cloves	2 ea
 Olive Oil	1 tbsp
 Salt & Pepper	To taste
 Nutmeg	A pinch

DIRECTIONS:

1. Pre-bake the crust for 10 minutes, then remove from the oven. Set aside to cool slightly.

2. Heat the olive oil in a skillet over medium heat. Add the morels (halved) and cook until they are soft and have released their moisture, about 5-8 minutes. (Morels must be cooked THOROUGHLY to be safe for consumption).

3. Add the shallots and garlic, sautéing until translucent and starting to turn golden, about 5 minutes. Let everything cool close to room temperature. Make sure most of the water; too wet and it won't cook right. (Optional: set aside a few morels and 1/4 cup of cheese to add to the top for decoration).

4. In a medium bowl, whisk together the heavy cream, eggs, grated cheese, pinch of nutmeg, and additional salt and pepper. Stir in the cooled mushroom mixture..

5. Pour the filling into the pre-baked crust. Bake at 375F (190C) for 35-40 minutes—or until the filling is set and the top is golden brown. (Optional: apply the topper at 25 mins).

Prep time: 5 min.

Cook time: ~1 hour

Serves: 4-6

Want more recipes & foraging content? Go check out **Foraging North America** on **PATREON** and **TIKTOK**!

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FunDiS SOUTHEAST RARE FUNGI CHALLENGE

Here are the rare fungi target species for our area! We will be pushing this hard and looking for folks to seek out these potentially rare species. A treasure hunt of the most exciting kind- fungi! Find details HERE!



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AMS CREATIVE CORNER



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AMS CREATIVE CORNER



Hand-crafted / Painted Violet Corts by Joel Pounders

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AMS CREATIVE CORNER



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AMS CREATIVE CORNER



AMS is currently accepting creative submissions for our monthly newsletters! Folks of all ages are encouraged to participate by submitting their own fungi-inspired / fungi-adjacent art!

Acceptable forms of media include poetry, drawings, paintings, nature journal pages, digital art, collages, and (images of) sculpture, diorama, ceramics, etc. We are not accepting Al-generated art at this time--and plagiarism will of course disqualify anyone from being featured. 2 entries per person per month are allowed.

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Attention All Creatives!

Chosen submissions will be featured in the next month's newsletter or a future edition! Please email submissions to almushroomsoc@gmail.com with "Monthly Newsletter Art Submission" in your title!

Illustration by Kaitlyn Ledbetter