NJMA NEWS

THE OFFICIAL NEWSLETTER OF THE NEW JERSEY MYCOLOGICAL ASSOCIATION

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NJMA EVENTS HOTLINE

908-227-0872 for information on NJMA events or cancellations due to bad weather. *It is NOT for general inquiries or to contact officers!*

WHAT'S INSIDE:

PRESIDENT'S MESSAGE

NJMA stands for New Jersey Mycological Association. So why not say NJ Mushroom Association? Well Dave Wasilewski used the term "citizen scientist" a few years ago. His comment made me think: A scientist is someone who wants to increase the knowledge of the natural world. A mycological association is about knowledge, which includes and goes beyond just finding a few edible mushrooms. The spirit of the club has been to seek knowledge in a helpful, sharing and generous way.

"The Best of 2019" (a review of the best finds of the previous year) was the topic of the January 26th 2020 meeting. This is a perfect example of how the club strives to promote knowledge. All the work John Burghardt does to maintain the NJMA Foray Species List makes him a citizen scientist. I want to thank him and also thank our other speakers (and citizen scientists) Luke Smithson, Maricel Patino, Igor Safonov and Dorothy Smullen. The diversity of fungi presented also explains why we are the NJ Mycological Association and not just a mushroom club.

In regard to my last newsletter message, the Executive Committee voted down the request for higher dues to provide stipends for certain club positions. While non-profits can provide stipends, the club's philosophical concept was to have the club remain a completely volunteer organization. However, expenses do get reimbursed.

– Frank Marra

EDITOR'S NOTES

It is intriguing how, sometimes things come together, mycologically speaking. We just had our Mycophagy program (write-up in the next issue) and our March speaker is Tina Ellor, from Phillips Mushroom Farms, who donated the mushrooms for the event.

In April, we have Christian Schwarz talking on community involvement with fungi. In this issue, on ***page 5***, we have Dave Wasilewski's review of T*he Field Guide to Citizen Science* from Timber Press.

Back to Mycophagy: For contrast, the week before our cooking demonstration, I attended another mushroom cooking class at a location that will remain nameless. The mushrooms, grown in New Jersey, were spectacular. A lot of attention was paid to the fact that the recipes were vegan, and the ingredients were all detailed as to their beneficial values. The only problem was that the food was tasteless. Cooks have to get back to realizing that with food, the most important thing is *taste!* Which brings me to the Culinary Group's Mushroom Sampler on Saturday, April 11th. Space is still available, see the details in the ***Calendar*** and on ***page 9***.

I am hoping that by the next newsletter, we will be getting reports (and photos! Lots of photos!) of great early mushroom finds. You can do your duty as a Citizen Scientist and enjoy your early finds as a mycophagist and support NJMA by contributing to your newsletter.

– Jim Richards

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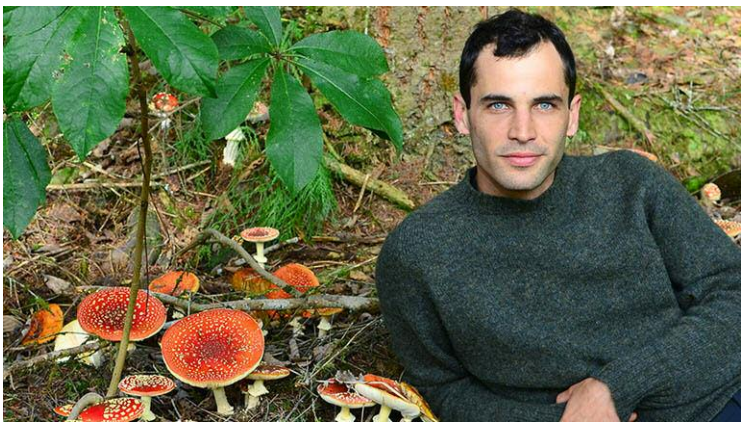
facebook

http://tinyurl.com/jjualgz

WELCOME TO THE ONLINE EDITION OF NJMA NEWS

For the great majority of you who are viewing the online PDF of this newsletter, please note that **most web links and email addresses are clickable.** Clicking on a ***blue*** web or email address will launch your web browser and take you to the specified page or open your email software so you can send an instant email. Just look for the "click finger" when you hover your mouse over these items.



AT OUR MEETING ON SUNDAY, APRIL 19TH

CHRISTIAN SCHWARZ

"BOTTOMS UP! COMMUNITY SCIENCE AND THE NORTH AMERICAN MYCOFLORA PROJECT"

What do we know about where mushrooms live, their diversity, and how to identify them? What don't we know? Why does it matter at all? What is a citizen scientist? We'll discuss these questions and more in hopes of leaving you feeling empowered to contribute your experiences to the book we are all writing together – The Field Guide to Life on Earth.

Christian Schwarz is a naturalist currently living in Santa Cruz, the land of milk (caps) and honey (mushrooms). He studied Ecology and Evolution at UCSC, and now spends his time photographing, researching, collecting, and teaching about macrofungi. He is coauthor of *Mushrooms of the Redwood Coast*. Fungi satisfy his curiosity with their seemingly endless forms – from the grotesque to the bizarre, to the sublimely beautiful. Besides dabbling in mushroom taxonomy, he loves fish, plants, nudibranchs, moths, and dragonflies. He is passionate about citizen science, especially *iNaturalist*.

Our meeting will be held at the Frelinghuysen Arboretum in Morristown on April 19th from 1:30 to 4:00pm.

SANG PARK LECTURE SERIES, SUNDAY, MAY 17TH

ROBERT BLANCHETTE

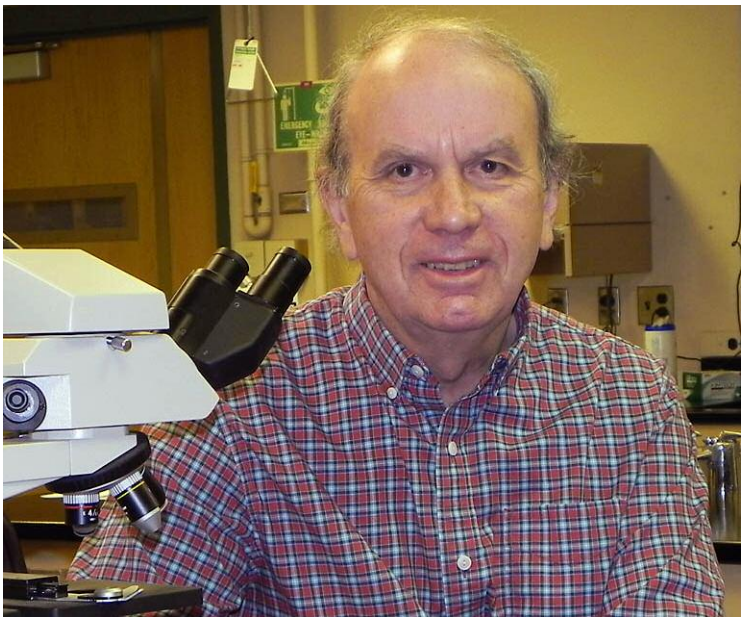
A SPECIAL MEETING AT THE FRELINGHUYSEN ARBORETUM

On Sunday, May 17th, our Sang Park Lecture Series continues with Robert Blanchette, who is a professor at the University of Minnesota in the Department of Plant Pathology. The title of his talk will be "Historic Uses of Forest Fungi: Shaman, Emperors and Supernatural Mushrooms".

Over the past 3+ decades, he has taught classes and carried out research in mycology, forest pathology and wood microbiology. His research includes studies to better understand the biology and ecology of fungi that grow on wood and recent studies include the *Ganoderma lucidum* complex in North and South America, mechanisms fungi use to decay wood, subterranean fungi in mines and caves, fungal diversity in the Arctic and Antarctic, ethnomycology and others. He has worked closely with curators and conservators to identify fungi in museum collections and has assembled information on the extraordinary historic uses of forest fungi.

The presentation will provide information on how indigenous peoples from different regions of the world utilize fungi including several fungi used by shaman that were thought to have supernatural powers. His research in Asia has revealed information on how Ganoderma and other fungi were used, including their imperial use by Chinese Emperors. Many of the fungi that will be discussed are polypores or bracket fungi that grow on trees. Since they grow in many areas of the northern United States, including New York and New Jersey, photos of these fungi will be shown and their characteristics discussed so you can become more familiar with identifying them.

This is a special meeting which falls outside of our winter meeting dates. It is part of the Sang Park Lecture Series, which is made possible through the estate of the late Sang Park, one of our most dedicated veteran members.



IN MEMORIAM

DOUGLAS E. EVELEIGH

DECEMBER 6, 1933 - DECEMBER 30, 2019

*(excerpted from the **New York Times** obituary)*

It is with great sadness that we report that Douglas E. Eveleigh, an emeritus Distinguished Professor at Rutgers University, died on Dec. 30, 2019 of complications of a glioblastoma. Prof. Eveleigh served on the Rutgers faculty for forty-five years, where he was known as an exceptionally fine teacher and scholar. Professor Eveleigh's interests ranged broadly from applied microbiology (fermentation and degradation) to the history of science. Students loved his infectious humor and his skill at enlivening the study of microbiology on topics that ranged from alcoholic fermentation to the generation of swamp gas.

in June 1970, Doug accepted a job (hired by Jim Macmillan to teach David Pramer's General Microbiology course) at Rutgers, The State University of New Jersey, in what is now the Department of Biochemistry and Microbiology, where he remained for the rest of his career and rose to the rank of Distinguished Professor.

Prof. Eveleigh's research program focused on the metabolic capabilities of filamentous fungi. In particular, he studied the ability of certain common soil fungi to make enzymes that degrade cellulose, and his group pioneered the use of fungal enzymes to turn plant wastes into biofuels. His research on enzymes from the soil fungus Trichoderma is a cornerstone of several contemporary commercial ventures in bioenergy and his fungal strains continue to be used in industrial fermentation around the world. Moreover, some of the mutant strains he isolated for the Army while at Natick produced enzymes used to this day to "eat away" at cotton in denim fabrics, giving them the distressed, worn-out look desired by the fashion industry. He had numerous other research interests, ranging from the nitrogen-fixing bacterial symbionts of bayberry to the diversity of lichens on gravestones.

In addition to his laboratory research, Prof. Eveleigh had a passion for microbiological history. He excelled at scholarship and teaching at all levels, as an instructor of undergraduate and graduate students, as a mentor to post-doctoral and visiting scholars, and as an educator of the broader community through his extensive outreach activities. Several of his students have said that he literally had rescued them! Through all aspects of his life, Doug was a bottomless pit of enthusiasm. His energy was particularly infectious (appropriate for a microbiologist). He knew how to combine teaching, research, and the study of microbes into what he always called "sheer fun."

During his lifetime, Professor Eveleigh received many honors and awards.

On hearing of Doug's illness, his colleague Dr. Elio Schaechter, described him as founding a whole new field of Microbiology "Humanistic Microbiology," acknowledging Doug's focus on the human aspects of the profession, a "humicrobiologist." On hearing of his death, Elio wrote again to say: "To know him was to like him." These words serve as an appropriate epitaph.

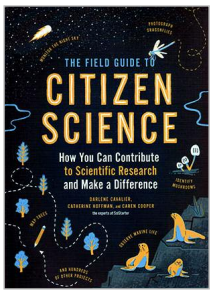
Memorial service details will be communicated at a later date, with a current target of end of March, 2020.

The members of NJMA would like to express their condolences for Doug's family.

BOOK REVIEW

THE FIELD GUIDE TO CITIZEN SCIENCE

a review by Dave Wasilewski



The Field Guide To Citizen Science
by Darlene Cavalier, Catherine Hoffman, and Caren Cooper

Timber Press (February 4, 2020)
188 pages

ISBN-10: 1604698470
ISBN-13: 978-1604698473

After over 25 years of avidly hunting wild mushrooms – mainly for the purpose of collecting edible types – my involvement in this hobby underwent a sea change. I had made two seminal discoveries. First came the internet, which provided the opportunity to discuss wild mushrooms with people from across the globe. Then there was my first digital camera, which made it possible to easily record and share lots of good photos of mushrooms. My interest rapidly segued from pothunter to a much more broadly-based appreciation for mycology. I was on my way to becoming part of a trend spurred on by the digital revolution.

During the same time period, scientists working in many different fields began to realize the immense potential of involving the general public in their research via the internet. Of course, there are problems to iron out when amateurs interact with professionals who are required to hold themselves to appropriate rigor. Clearly, there is a need to establish official projects replete with carefully crafted protocol to keep us amateurs in line with the demands of science. Thus has evolved the concept of Citizen Scientist, and the associated projects in which novices and amateurs team up with professionals to produce data that advances the state of science.

An excellent introduction to the concept of the Citizen Scientist may be found in *The Field Guide To Citizen Science* by Darlene Cavalier, Catherine Hoffman, and Caren Cooper. The authors provide stimulating examples of how collaborative projects are conducted using the contributions of individual people, schools, libraries, and museums. Within the opening 45 pages, there's a lot of motivation for people to participate, as well as an overview of the variable levels of commitment one would expect to encounter if they join a CS project. The remainder of the book mainly consists of brief outlines of specific projects, the diversity of which is impressive.

CS represents a golden opportunity for families and schools to convert young people's preoccupation with the internet into fascination with the natural world that surrounds them, and to perhaps make a contribution to the advancement of science. *The Field Guide To Citizen Science* should be on the shelf of every school library at every level of education.

My mushroom dehydrator now routinely gets filled with as many specimens earmarked for study as with edibles to store inside jars in my pantry. I have made contributions to multiple mycological studies, and occasionally my efforts are noted within a study. During 2018, I directed my local mushroom club's participation in the North American Mycoflora Project, and hope to stay involved in the future. (Interestingly, T*he Field Guide To Citizen Science* does not mention NAMP.) There is no longer any great disappointment if I fail to fill a bag full of *Boletus edulis* while out looking for mushrooms (although it never hurts to do so!). For, now I almost never return home empty-handed. There's always something of interest to photograph, examine, and discuss with others. The realm of Citizen Science offers a variety of opportunities for anyone to similarly observe and delight in the world that surrounds them in forest, field, lake or river, along an ocean beach, on the ground bordering a city street or up in the night sky, or even by recording details while watching a video.

BYTES, BITS, & BITES

TASTY LITTLE TIDBITS FROM OUR MEMBERS

Have you read something interesting concerning mushrooms or foraging? Send it to ***njmabbb@gmail.com*** *and share with the rest of our members!*

from Judy Glattstein:

NYBG Event May 20, 2020: Healing Power of Mushrooms:

https://tinyurl.com/v4kautz

(Note: NJMA does not endorse any commercial products)

from Sue McClary:

London exhibit: Mushrooms: Art, Design and the Future of Fungi":

https://tinyurl.com/skyps35

from the Editor:

La Cave des Roches (Mushroom Caves)

https://tinyurl.com/u8l5vup

from Sue McClary:

Snow bank fungi threatened:

https://tinyurl.com/rgfn9h3

from Judy Glattstein:

Edible mushroom guide from Missouri government:

https://tinyurl.com/w9elvjg

(continues on next page)

MY OUTREACH EXPERIENCE

by Sue McClary

I was reluctant to volunteer for outreach when I was first asked. In fact, I declined straight away. What if someone actually asked me a question? Would I be an embarrassment to the club if I could not answer it? But, last year, I decided to overcome that initial fear. I can now speak from experience: All of you have knowledge to share with the general public regardless of why you initially joined the club. If you do an outreach, you will get to know other members and broaden your knowledge of mushrooms.

So what is Outreach? Have you ever been to a local street fair? There you will have seen tables sponsored by banks with their free pens, local service organizations like EMS looking for volunteers and, of course, the various craft and food stalls selling their wares. It can be like that, or it could be an event at a county park or a garden club. Sometimes indoor, sometimes outdoor with a canopy for sun or rain protection.

I thought my outreach assignment would simply be sitting at a table watching the people walk past.

But that was not the case. Despite our NJMA booth not giving away any free stuff, not being high tech or commercially dazzling, it is still very popular with adults and kids. It has a collection of items on display for people to see. First, there is the large trifold poster showing some of the mushroom groups. Even those who are too shy to actually walk up and talk to anyone, will walk away knowing a bit more about fungal diversity. Our outreach display has examples of mushroom arts and crafts including dyed yarn, polypore jewelry, and mushroom paper. There is a dried Morel in a jar to help start the conversation about the pleasures of mushroom consumption or cultivation that can expand someone's palate beyond the white button mushroom.

Do you think you would be at a loss for words with someone looking to make that initial contact with NJMA? Start the conversation with "Did you know ..." and read one of the Fungi Fun Facts from one of the table top display papers. There will be actual mushrooms, such as Artist's Conk, which you can encourage kids to pick up and examine. Bring some fresh mushrooms from your neighborhood to display and let the public see and compare them with the dried polypores. At my first outreach, one of our booth volunteers brought some wood ears. Kids found touching them to be really cool.

OK! Now the hard part of outreach! Someone inevitably will want to show you a mushroom picture they have on their smartphone. The picture may be a really clear one, but information on season, habitat, and underside appearance will be lacking. We recommend that you refer them to the club's ***Facebook page***, ***Mushroom-observer.org***, ***iNaturalist.org***, ***Mushroomexpert.com***, etc., so they will have the tools for their next mushroom encounter. If you know a little about identification, and you have a couple of minutes, you can talk about how to go about identifying a mushroom, a good field guide, or just tell them they have a picture of a bolete, hen of the woods, or chicken of the woods, and they will be very happy.

So if you can volunteer to spend a few hours this year at an NJMA outreach event in your area, you can help the club fulfill its educational mission. Some people won't want to wait to go home and go online to become a member; they want to fill out an application right then and there. Fungi are fascinating. Do share, and who knows, you might just help prevent someone from eating *Chlorophyllum molybdites* from their front lawn

BYTES, BITS, & BITES *(continued from previous page)*

from Sue McClary:

Wishi *(Grifola frondosa)* the secret of Cherokee Health:
https://tinyurl.com/yy8ofr82

from Judy Glattstein:

Video: I planted shitake mushrooms in the mountains:
https://tinyurl.com/v9tod9r

from Judy Glattstein:

Video: Matsutake foraging to consuming chinese:
https://tinyurl.com/wzk93sx

from Sue McClary:

Foraging is part of the Swedish identity:
https://tinyurl.com/y4m2eadk

from Judy Glattstein:

BBC video: Is commercial foraging damaging the enviri-onment:
https://tinyurl.com/tpn5hte

from Sue McClary and Judy Glattstein:

Myco-architecture off planets - growing Martian houses:
https://tinyurl.com/sg6lp2c

from Judy Glattstein:

A food library opens in the UK:
https://tinyurl.com/wfqogq3

[From the Editor: Our NJMA library has more British fungi books than they do!]

*from **The New York Times**:*

A chef and her black trumpet tea
https://tinyurl.com/t62ysko

(continues on page 9)

CALENDAR OF UPCOMING EVENTS

Sunday, March 22
10:00am - 1:00pm

NJMA EDUCATION CLASS: FIELD IDENTIFICATION OF MUSHROOMS
Frelinghuysen Arboretum, Morristown
Beginners: Join Jim Barg to learn how to identify fungi through field characteristics. A skilled photographer, chef and identifier, Jim will teach you how to go about collecting mushrooms safely without flipping through field guides in hope of finding a picture that resembles your specimen. Registration required! ***$10.00 fee includes handouts. Limited to 15 participants.*** Register at ***www.njmyco.org/education.html***.

Sunday, March 22
1:30pm

MEETING & LECTURE
Frelinghuysen Arboretum, Morristown
Our guest speaker will be Tina Ellor, Technical Director of Phillips Mushroom Farms. Topic: "The Mushroom Mashup" with some medicinal info, some cultivation info, and some history of mushroom growing in the US.

Saturday, April 11
6:00pm

NJMA CULINARY GROUP DINNER – A MUSHROOM SAMPLER
Unitarian Center, Tices Lane, East Brunswick
This is a members-only event. NJMA food lovers are planning a potpourri of mushroom dishes for a fascinating taste-fest. To register for the dinner, contact Marja Van Ouwerkerk (***pamarjavo@gmail.com***) For more information about the group,contact Jim Richards (***jimrich17@icloud.com***). *IMPORTANT: This is NOT a pot-luck event.* Participants will receive copies of all recipes served.

Sunday, April 19
12:00pm - 1:30pm

NJMA EDUCATION CLASS: INTRODUCTION TO MUSHROOMS
Frelinghuysen Arboretum, Morristown
For the new member or enthusiastic beginner who wants to learn more about structure, life cycle and ecology of mushrooms. Presented by John Burghardt, data recorder ***Limited to 15 participants.*** Register at ***www.njmyco.org/education.html***.

Sunday, April 19
1:30pm

MEETING & LECTURE
Frelinghuysen Arboretum, Morristown
Guest speaker: **Christian Schwarz**.
Topic: "Bottoms Up: Community Science and the North American Mycoflora Project"
Details on ***page 3.***

Sunday, May 3
10:00am

FIRST FORAY OF THE YEAR
Princeton Institute Woods

Sunday, May 17
1:00pm

SANG PARK LECTURE SERIES
Frelinghuysen Arboretum, Morristown
Special guest speaker: **Robert Blanchette**
"Historic Uses of Forest Fungi: Shaman, Emperors, and Supernatural Mushrooms"
Details on ***page 3***.

Friday - Sunday
June 26 - 28

NJMA'S VICTOR GAMBINO WEEKEND FORAY
Kirkwood Retreat Center, Bangor, PA
Guest mycologist: **Dr. Roy Halling**, Curator Emeritus, Mycology, NY Botanical Garden
Come expand your knowledge of the world of fungi and join fellow mycophiles for a great time. Room and board for the weekend will run $235.00. Register online at ***www.njmyco.org/membereventreg.html*** using PayPal. Sign up early, as room is limited to about 20 participants. Contact Liz Broderick at ***medhead72@gmail.com*** with any questions.

WHO'S IN A NAME?
Trychophyton schoenleinii
by John Dawson (seventy-seventh in a series)

Trychophyton schoenleinii is a fungal pathogen that causes the human scalp disease *favus*, a severe and chronic form of ringworm that can lead to permanent hair loss. It was the first human fungal pathogen to be recognized as such, by the German physician commemorated in its specific epithet: Johann Lukas Schönlein.

Schönlein was born in Bamberg, Germany, on 30 November 1793 and died there on 23 January 1864. His father, Thomas Schönlein, was a wealthy ropemaker, but with his mother Margarethe's support young Johannes[1] chose not to follow his father's profession but to pursue his interests in natural history. At the Gymnasium in Bamberg, a teacher encouraged him to collect a wide variety of geological, botanical and zoological specimens (an activity he pursued throughout the rest of his life),[2] and after his graduation in 1811 he enrolled at the University of Landshut to earn a degree in natural science.

Johann Lukas Schönlein

Though Bamberg at that time was "a cradle of German hospital medicine,"[3] it was only after his arrival in Landshut that Schönlein redirected his studies toward a medical degree. He found comparative anatomy to be of particular interest and, in 1813, transferred to the University of Würzburg to study with Ignaz Döllinger, under whom, in 1816, he wrote his doctoral dissertation on the developmental metamorphosis of the brain.

Nevertheless, Schönlein did not intend to pursue a clinical career. Instead he sought unsuccessfully to join the Dutch East India Company to study natural history in the Far East. Failing that, he spent the year 1816 first as a physician at the Allgemeines Krankenhaus (general hospital) in Bamberg, followed by studies in Göttingen and Jena, and then a brief stint at the Allgemeines Krankenhaus in Munich.

The following year Schönlein earned his Habilitation (higher doctorate) at Würzburg, which qualified him to teach pathological anatomy there as a *Privatdozent* (unpaid lecturer).[4] Shortly afterward, Nicolaus Anton Friedreich, the professor of special pathology and therapy and head of the medical clinic at Würzburg, became ill and asked Schönlein to take over his duties for him. So, in 1819, Schönlein, just 26 years old, became provisional director of the hospital. The next year, he was appointed assistant professor of special pathology and therapy, and when health issues forced Friedreich to resign in 1824, Schönlein was promoted to full professor and director of the hospital.

Under Schönlein's direction, the clinic at Würzburg became one of the most famous in Germany, attracting students from throughout Europe. But in 1832, despite having been made an honorary citizen of Würzburg, Schönlein was fired because of his liberal political opinions and moved to Frankfurt, where he briefly established a medical practice before fleeing with his wife and young daughter[5] to Switzerland after an attempted assassination in Frankfurt led him to fear he might be arrested.

In 1833, he was appointed professor of medicine at the newly founded *Hochschule* in Zurich, and there, in 1839, he published two very short papers — his only publications apart from his dissertation. In the second of those he described his observation of fungal tissue in the lesions of favus, and in so doing became one of the founders of the field of medical mycology. In that paper he noted that he was motivated to search for fungal pathogens of humans by the work of Agostino Bassi[6] on muscardine and that of the botanist Franz Unger on fungal parasites of plants.

Unfortunately, political circumstances once again caused Schönlein to seek a position elsewhere (in particular, because he was Catholic, he was not granted citizenship in Zurich). So, in 1840, he returned to Germany and became professor of medicine in Berlin, as well as

(continues on next page)

[1] His given name at birth, according to the biographical sketch of him in the dictionary of medical eponyms *Whonamedit?* (***http://www.whonamedit.com/doctor.cfm/353.html***). He added the middle name Lukas later.

[2] According to the entry on Schönlein by Gloria Robinson in the *Dictionary of Scientific Biography*.

[3] Quoted from the entry in *Whonamedit?* cited above in footnote 1.

[4] *Ibid.*

[5] In 1827, Schönlein had married Therese Heffner, who bore him a son and two daughters (according to the genealogy accompanying the entry on Schönlein by Werner E. Gerabek in *Deutsche Biographie*, at ***https://www.deutsche-biographie.de/sfz79016.html#ndbcontent***).

[6] Profiled in installment 68 of this series.

director of the clinic at the Charité hospital there.[7]

Schönlein today is regarded as one of the foremost pioneers in introducing the methods of modern medicine into German clinical practice. In particular, he introduced the techniques of percussion and auscultation developed earlier by French physicians, employed microscopic and chemical analyses of blood and urine as aids to diagnoses, and taught his students to observe patients at their bedsides. Among his most eminent disciples at Berlin were Theodore Billroth, the father of modern abdominal surgery, and the pathologist Rudolf Virchow.

Schönlein's wife died in 1846 and his son in 1858. The following year he moved with his daughters back to Bamberg, where he spent the remaining years of his life.[8]

[7] Gloria Robinson , *op.cit.*

[8] The portrait of Schönlein reproduced here, taken from the *Wikipedia* entry about him, is in the public domain.

A CULINARY GROUP "REVIVAL"
NEW DATE! SATURDAY, APRIL 11TH, 6:00PM
UNITARIAN CENTER, EAST BRUNSWICK, NJ

by Jim Richards, Culinary Group Chairperson

What is the Culinary Group and where did it go? The NJMA Culinary Group was started in 1983 as a way for members to get together and enjoy a planned meal.

While NJMA has a number of potluck events where food is shared, the Culinary Group differs in offering set menus – usually based on the foods of a particular cuisine. Mushroom dishes are a significant part of most of the menus. We have had Mushroom Pates at some of the French dinners, Mushroom Ceviche at an Argentinian Cookout and *Lactarius corrugis* Pizzas at a Locavore Picnic. The dinners offer members a chance to enjoy great food in a relaxed setting and to get to know their fellow members over a glass or two of wine, beer or tea and coffee.

In the past, a few members have done the work of planning the theme, finding the recipes and assigning them, setting up the tables, etc., and cleaning up afterwards. Ideally, we would do three dinners a year: one in the Spring, another in the Fall, and a cook-out in Summer. If you are interested, I will be glad to send you a list of the dinners and the menus.

Each cook submits a copy of their expenses for the ingredients used in preparing their dish. The costs are added together and divided by the number of attendees. The average price for these multi-course feasts has been about $18.00 per person.

After the meal, the participants are sent copies of all the recipes along with any comments by the preparers.

We are looking for people that are willing to help revive the group. There is a small group of members that have been helping with set-up, clean up, and so on, but they need a "leader".

If you are interested in helping the Culinary Group get started again, please contact me (Jim Richards) at ***jimrich17@icloud.com*** and we can plan on getting together. We can always talk at the winter meetings, as well.

To sign up for a mushroom-themed dinner at the Unitarian Center in East Brunswick at 6:00 pm, Saturday, April 11th, contact Marja Van Ouwerkerk (***pamarjavo@gmail.com***) to register.

BYTES, BITS, & BITES *(continued from page 6)*

from Sue McClary:

Campus food: Mushroom blends:
https://tinyurl.com/roxg6y4

from Sue McClary:

The Use of Mushrooms in Skincare
https://tinyurl.com/wue5u34
(NJMA does not endorse commercial products):

from Sue McClary:

The Benefits of Adding Snow Mushroom to Your Skin-Care Routine:
https://tinyurl.com/qtpd8ju

from Sue McClary:

Mushroom Cosmetics: Present and Future:
https://tinyurl.com/uqdbowe

from Sue McClary:

Mary Banning and The Fungi of Maryland:
https://tinyurl.com/yxc5mh5o

from Sue McClary:

John Cage: a story of mushrooms and music:
https://tinyurl.com/y46gnjpo

FROM THE MICROSOFT LIFESTYLE BLOG:
FOODS NEVER TO EAT RAW

Mushrooms contain a host of beneficial properties including antioxidants, B vitamins, and potassium, according to Healthline. Some doctors note, however, that heat is required to release some of these nutrients and benefits. Plus, raw mushrooms are known for being hard to digest, and they are among the most concentrated sources of a naturally occurring toxin, agaritine. Various studies and research found in some rat studies that agaritine has a carcinogenic effect. That said, cooking destroys these compounds so you can still safely eat the cooked variety.

2020 NJMA FORAY SCHEDULE

Driving directions to forays are on our website, www.njmyco.org/directions.html

Forays begin at 10:00 AM and identification activities usually last for several hours after the foray walk ends. Don't forget to bring lunch!

All forays will be held rain or shine!

We are pleased to announce the NJMA forays for 2020.

Many of our foray locations require a permit to collect fungi for scientific purposes, to educate the public about fungi and identify what we find. Our permits do not allow us to pick for eating, so please do not put our ability to collect in these areas into jeopardy.

Also, people with cameras, take note: If you're taking group shots and someone asks you not to take their photo, please give them the courtesy of respecting their wishes. Also, we *do* appreciate "people pictures" for our newsletter, but please get names and permission of the people in your photo(s) before submitting to our newsletter.

One other note: Some of the state parks charge admission from Memorial Day to Labor Day. Your NJMA Membership Card allows you to get in free of charge on our foray dates. Keep it in your wallet or glove compartment!

DATE	LOCATION
May 3 (Sunday)	**Princeton Institute Woods**
June 14 (Sunday)	**Deer Path Park** (Readington) **Bob Peabody Wild Foods Foray and Picnic** A walk through the park to find edible wild plants, followed by a potluck picnic. Bring a dish for the picnic, which is open to **members only**. *Foray itself is open to all.*
July 11 (Saturday)	**Stephens State Park** (Hackettstown)
July 19 (Sunday)	**Teetertown Ravine Nature Preserve and Crystal Springs** (Lebanon Township)
July 26 (Sunday)	**Thompson/Helmetta County Park** (Jamesburg)
August 2 (Sunday)	**Crystal Lake Park** (Mansfield Township, Burlington County)
August 8 (Saturday)	**Schiff Nature Preserve** (Mendham)
August 16 (Sunday)	**Long Pond Ironworks State Park - Green Turtle Pond** (Ringwood) *(some rough walking, no bathrooms, limited parking)*
August 23 (Sunday)	**To Be Announced** *(watch this newsletter)*
August 30 (Sunday)	**Stokes State Forest, Kittle Field – Grete Turchick Foray & Picnic**(Branchville) *The foray is open to the public, but the picnic is for* **members only**.
September 20 (Sunday)	**Wawayanda State Park** (Hewitt)
October 4 (Sunday)	**Chestnut Branch Park** (Mantua)
October 11 (Sunday)	**Estell Manor Park** (Estell Manor)
October 17 (Saturday)	**NJ Forest Resource Education Center** (Jackson)
October 25 (Sunday)	**Wells Mills County Park** (Waretown)
November 1 (Sunday)	**Belleplain State Park** (Woodbine)

Before attending any NJMA foray, READ and UNDERSTAND our foray guidelines!

WELCOME TO ALL OF OUR NEW NJMA MEMBERS!

We'd like to extend a warm welcome to the following members who joined us between January 12, 2020 and March 3, 2020. We look forward to seeing you at lectures, forays, and other NJMA events.

Happy 'shrooming!

Andrew Allison	Jersey City, NJ
Lillian Azar	Tinton Fall, NJ
Rita Berson	Melrose Park, PA
Kristina Bonatakis	Red Bank, NJ
Annmarie Burzachiello	Newton, PA
Laura Campbell	West Orange, NJ
Janic Castagner	Pennsauken, NJ
Anthony Conte	Belleville, NJ
Gina Conti	Toms River, NJ
Signe Cruz-Lindbloom	Hillsborough, NJ
Rachel DeFlumery	Blairstown, NJ
Etan Goldberg	Metuchen, NJ
Michael Heffler	Lambertville, NJ
Karen Khalaf	Summit, NJ
Marek Malinowski	Somerset, NJ
Stefanie Markowski	Glen Gardner, NJ
Melinda McEvoy (Bare)	Morganville, NJ
Jessica Medina	New Brunswick, NJ
Debra Murawski	Point Pleasant, NJ
Igor Nachevnik	Millburn, NJ
Ofra Natif	Weehawken, NJ
Jenna Neckonchuk	Pennsauken, NJ
Michael Newton	Avon, NJ
Robert Ott	Perkasie, PA
Leslie Peterson-Cohen	Glen Rock, NJ
Christopher Proniewski	Ewing, NJ
Leslie Raff	Morristown, NJ
Thomas & Kathleen Sateary	Hillsborough, NJ
Lina Sinishtaj	Keyport, NJ
Ryan Stromberg	Bradley Beach, NJ
Bernard Sypniewski	Woodbine, NJ
Karen Vaccaro	Doylestown, PA
Mark Vandermass	Rahway, NJ
Jaime Velasquez-Perez	Wharton, NJ
Vincent Vinci	Laurence Harbor, NJ
Owen Zecca	Glen Gardner, NJ

TOMENTELLA SPECIES

Description and photos by Maricel Patino

These three photos belong to the genus Tomentella. I did the micro of 30 species during 2019. Spores are echinulate (ornamented with spikes). I don't know the species. It is a hard genus because you have to study the micro features well and there are about 200 species world wide. Some of them have septa on the basidia or clamps at base and some don't. Tomentella species are beautiful; they come in a variety of colors: green, ocher, purplish, tan, brown, rusty, yellowish and all sort of in between colors. They could look cottony, smooth or warty and some may have cordons (rhyzomorphs). It is also important to note reactions with KOH for the purpose of identifying some to species.

FERMENTING MUSHROOMS

by Nicholas Repenning
*(reprinted from **Mainely Mushrooms**, newsletter of the Maine Mycological Society, Vol. 35, No. 2, April - June, 2019)*

I am totally engulfed in both fermentation and mushrooms. However, the two usually do not directly cross paths. Fermentation is a technique for enhancing flavors and making nutrients more bioavailable but, historically, it is a means of food preservation. There are loads of fungi that take place in fermenting – in things such as beer, bread, cheese, and even soy sauce. While all of these ferments involve some kind of fungi, not many directly involve mushrooms. I have searched for folk recipes and have asked around about fermenting mushrooms, but have found little on this subject. Mostly, I've stumbled through some vinegar-based pickles and a little on lacto-fermenting, which I plan to experiment with more this year.

What did spark my interest enough to share is *The Noma Guide to Fermentation*. This book has some in-depth instructions for making koji (fungi-cultured grains) and some shoyu-like sauces using mushrooms. In particular, I was intrigued by a Dryad's Saddle Shoyu. Here is the recipe in time for spring (and one of our first wild edible mushrooms):

Dryad's Saddle Shoyu

2kg fresh *Cerioporus (Polyporus) squamosus*
400 grams Pearl Barley Koji (rice koji works as well)
600 grams water
150 grams non-iodized salt

Clean mushrooms, wiping off any debris. Chop into pieces that will fit easily into food processor. Pulse into a coarse meal. If desired, koji may also be broken up in food processor. Thoroughly mix ingredients and place in a non-reactive fermentation vessel. Place plastic wrap directly on the surface and weight down to ensure coverage. Ferment for 3-4 weeks at room temperature, stirring with a clean spoon once a week. To harvest, strain liquid using cider press or by squeezing pulp through a clean towel. Strain again through a cheese-cloth and refrigerate or freeze for longer storage.

This shoyu can be used for roasting and/or sauteing meats or vegetables, or simply as an earthy base for stocks. Since this book came out in the fall, I haven't had the chance to make this one, but have altered the recipe using previously frozen matsutake, *Tricholoma magnivelare*. My variation is over-poweringly matsutake with intensely concentrated flavor. Not quite finished at the time of writing this, I'm looking forward to cooking with this. A little will go a long way with this one.

A few notes: When varying mushrooms such as I did, blanching or freezing may be necessary to help break down cell walls. Please note that not all mushrooms are built the same. Some may be toxic raw and, therefore, must either be cooked first or left for other dishes. I'm also very interested in learning if any of you have any experience with fermenting mushrooms. Please share if you do. I'd like to hear about how you do it.

Thelephora terrestris

"All things are difficult before they are easy"
– John Norley

MUSHROOM EVOLUTION FROM CRUSTS TO CAPS

*from "Megaphylogeny resolves global patterns of mushroom evolution", T. Varga et al. **Nature, Ecology & Evolution,** 3, 668-78, 18 March 2019., via **Spore Print**, newsletter of the Long Island Mycological Society, Summer 2019*

An international project of over 70 taxonomists and phylogeneticists utilized sequence data from 5,284 species of mushroom-forming fungi (Agaricomycetes) to construct a phylogenetic tree which was used to infer ages and broad patterns of speciation and morphological change. The class Agaricomycetes started a rapid radiation in the Jurassic period, about 200 MA. during a warming climate and spreading coniferous forests. Only crust-like fungi were believed to be present at the beginning of the Jurassic, with more complex forms such as Cantharallales, Auricullariales, and Phallomycetidae arising in the middle of the period. Diversification increased during the Cretaceous and Paleogene (50 to 150 MA) with the development of pileate-stipitate (cap, stalk and gills) morphology, which offers sporal protection and enhanced dissemination. This famihar mushroom form now dominates agaricomycete diversity, with over 21,000 described species. Interestingly, the Russulales, which have a separate line of descent, arose earlier than the Agaricales. The Inocybaceae appear to be the most modern family of gilled fungi.