

NJMA NEWS

THE OFFICIAL NEWSLETTER OF THE NEW JERSEY MYCOLOGICAL ASSOCIATION
VOLUME 50-4 AUGUST-SEPTEMBER-OCTOBER 2020

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DUES

Payable for calendar year
Individual: \$10.00 (online newsletter)
\$35.00 (hardcopy newsletter)
Family: \$15.00 (online newsletter)
\$40.00 (hardcopy newsletter)
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Hard-copy printing:

Castle Printing, Ledgewood, NJ

Deadline for submissions:

10th of even-numbered months.

Send newsletter submissions ONLY
to the Editor.

All other correspondence should be
sent to the Secretary:

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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!

Laccaria laccata



A common fall mushroom, found in many places, often late into the season, especially in the NJ Pine Barrens. It is pictured here with its own spore print. It tends to grow singly or in small attached groups in areas of persistent moisture, and is considered edible, but somewhat mediocre.

PHOTO BY MARICEL PATINO

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PRESIDENT'S MESSAGE

The mushrooms are still growing. We can still collect and identify carefully.

There are 13 forays scheduled thanks to Nina Burghardt. We will be taking extra precautions with our forays, including a members-only policy and a requirement to register ahead of time. DO NOT just "show up" for forays!

Education Chair, Luke Smithson, has created a Zoom fungus ID session every Tuesday from 7pm to 9pm. Bring several photos of your mushroom finds for identification or sharing with the group. In the last newsletter (May, June, July 2020), there is a great article on how to photograph mushrooms "Capturing Fungi: Photography Tips for Great Identifications".

If you have not heard, Fungus Fest is cancelled this year. The Frelinghuysen Arboretum Education Center will be closed for the rest of 2020. NEMF was also cancelled; it will be at the same location in Quebec, now scheduled for 2021.

The good news is that activities are returning closer to normal. Let's hang in there and see you on a foray or Zoom.

– Frank Marra



EDITOR'S NOTES

As might be expected, I have not been receiving many contributions for *NJMA News*. But that has been true, COVID-19 or not. Maricel Patino did send an interesting article on nomenclature and a couple of photos. And I have had the volunteers who have been reviewing the latest additions to the library. If you would like to review books for *NJMA News*, please let me know what subjects are of most interest to you: cookbooks, wild foods, nature-in-general, field guides. You can get an idea of the range of books that we receive by taking a look at our Robert H. Peabody Library Catalog on Library Cat (<https://www.librarycat.org/lib/njmabooks>).

I would also like to receive some new recipes for the mushrooms you have been cooking up this summer. A photo of the finished dish(es) would be a nice addition.

In other club business, our election of officers for 2021 will be coming up in November. How and where that meeting might be held is under discussion. The only thing we do know is that it will not be at Frelinghuysen since their Hagerty Education Center is closed for the rest of 2020.

And we will not know for a while about the Unitarian Center in East Brunswick for our Annual Holiday Party and Photo Contest.

Just keep checking your inbox for the latest updates. And, of course, stay safe and have the best summer and early fall possible..

– Jim Richards

NJMA News is published bimonthly by the New Jersey Mycological Association. Annual subscription price is included in NJMA membership annual dues.

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Views expressed herein do not imply New Jersey Mycological Association endorsement.

Join us this Tuesday!

TAXONOMY TUESDAYS

Online every Tuesday evening at 7:00PM on ZOOM!

Download the ZOOM app to your phone, computer, or tablet and have digital photos of your mushrooms ready to present to the group.

Watch your email for details!

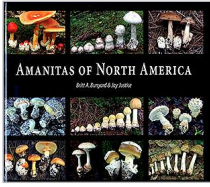
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For the great majority of you who are viewing the online PDF of this newsletter, please note that **most web links and email addresses are clickable**. Clicking on a **blue** web or email address will launch your web browser and take you to the specified 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.

BOOK REVIEW

AMANITAS OF NORTH AMERICA

a review by Igor Safonov



Amanitas of North America

by Britt A. Bunyard and Jay Justice

The FUNGI Press (2020)

336 pages

ISBN-13: 978-0578675725

Amanitas of North America by Britt A. Bunyard and Jay Justice can perhaps be viewed for a number of reasons (*vide infra*) as the most anticipated contemporary field guide of the 21st century in the USA dedicated to a single genus. While *Amanita* Pers. – unquestionably, the most celebrated group of gilled mushrooms in the world on account of the famous Fly Agaric (*Amanita muscaria*) being not only the type species for the genus itself, but also the most widely recognized ‘face’ of all macrofungi in popular culture in general, as well as the notorious deadly poisonous *Amanita phalloides* and *Amanita virosa* – has always enjoyed a decent representation in most printed references dealing with general field identification of mushrooms, such as Roger Phillips’ *Mushrooms and Other Fungi of North America*, amateur mycologists of the past and present have consistently struggled to confidently identify *Amanita* to species with this limited, often recycled, and now obsolete information, given the large number of both known and emerging cryptic taxa, as well as the complex and variable nature of macromorphology associated with *Amanita* mushrooms.

To compound this preexisting fundamental problem of insufficient species coverage in popular field guides, our knowledge and understanding of *Amanita* taxonomy and of individual species concepts, driven in part by eye-opening DNA sequencing and phylogenetic studies, have greatly advanced in the last two decades. This new and updated body of knowledge, missing from older generations of references and not captured in the majority of newer books, has further rendered the information on *Amanita* in these publications incomplete, outdated, and even misleading at times. However, thanks to the renowned *Amanita* expert, Dr. Rodham E. Tulloss of Roosevelt, NJ, who has been professionally studying *Amanita* for four decades and kindly made his vast knowledge and research findings available to the public through his thoroughly documented and regularly updated website, www.amanitaceae.org, the palpable deficiencies of the existing printed literature prior to the advent of this new book have been appreciably counterbalanced.

Still, with currently well over 200 published and provisionally named taxa in the USA, the desperate need for a modern and dedicated North American *Amanita* field guide that amateur mycologists can comfortably work with at forays and identification sessions (without

having to rely on their small-screened smart phones) has largely remained unfulfilled. Compared to its wanting predecessors, this book is a quantum leap in terms of offering the kind of taxonomic breadth and depth of the genus an amateur mycologist has been dreaming about for a long time. Yet, the reader would be surprised to learn that the new book is not the first attempt to capture the essence of *Amanita* on this continent. Dr. David T. Jenkins, now a retired professor from the University of Alabama at Birmingham, published in 1986 the now little known, largely forgotten and out of print *Amanita of North America* (NJMA library has a copy!), wherein the author logically organizes the book around an early version of the contemporary sectional taxonomic scheme of the genus. The main drawback of that early opus is its lack of photographs and drawings.

Weighing in at 2.5 lbs., the new book gives a strong impression of a coffee table book, owing to the showy hard cover, the unusual dimensions (10” x 8 ¾ “, W x L), and high quality glossy paper. Indeed, the authors refer to it as a desk reference, but it can certainly be used outdoors, just like any other field guide. The book, 336 pages long, is comprised of two sections.

The introductory part, 79 pages long, was intended by the authors to provide mycophiles with a wide and diversified range of general information about *Amanita*, such as “the mystery, lore, physiology, toxicology, edibility with required cautions, morphogenesis, evolution, ecology, as well as traditional taxonomy completed with a detailed history of the genus” (p.vii). Specifically, two chapters in the Introduction are a must read because they teach aspiring *Amanita* experts how to use this book properly and become proficient in identification of *Amanitas* at the intermediate taxonomic rank between the genus and species.

Chapter one (Morphology, pp. 11-19) methodically goes over the nuances of elaborate and diverse morphological (phenotypic) traits observed in *Amanita* that are related to the two unique developmental features that separate *Amanita* from other agarics – the universal veil (volva) and schizohymenial ontogenesis. This in-depth discussion is thoroughly supported by plentiful photographs illustrating the beauty and complexity of *Amanita* macro-morphology, as well as a neat diagram explaining subtle differences in fruit body development pertinent to *Amanitas* from different sections of the genus. Readers’ familiarity with, and understanding of, these terms and concepts is absolutely essential because the presence or absence of particular morphological traits, as well the unique combination thereof, will determine the placement of an *Amanita* species into a particular section within the genus. For example, the aforementioned *A. muscaria* is a member of sect. *Amanita*, while *A. phalloides* falls into sect.

(continues on next page)

Phalloideae. Why is this so important in the context of the book? Well, because unlike other field guides, this book lacks a dichotomous key that will directly guide the reader to individual species. The sole exception is a key to species in sect. *Lepidella sensu* Bas, that contains a disproportionately large number of taxa with unique morphologies. Armed with this information, the reader will be able to confidently place their *Amanita* mushroom(s) into a specific section of the genus by using the dichotomous key in the second must-read chapter: "How to know the *Amanitaceae* of North America" (p. 25). Following that, only a small part of the book containing species associated with the desired genus section will need to be examined in search of the named organism that best matches the observed morphological gestalt of the mushroom(s) in hand. My only criticism about the dichotomous key for section determination is that it begins with determining whether *Amanita* spores are amyloid or inamyloid. While amyloidity (a positive reaction with iodine due to the presence of starch in spores), or absence thereof, is an intrinsic and essential character incorporated into the overall *Amanita* taxonomic scheme (at the subgenus level), it can only be reliably established by using the very hard-to-get Melzer's Reagent. However, one can devise a working key or flow chart to *Amanita* sections based only on visible morphological attributes.

The greater part of the book is, of course, dedicated to the discussion and treatment of individual *Amanita* species, as well as a few taxa from *Limacella*, a sister genus within the *Amanitaceae* family. The authors selected "...the most commonly seen species of North America (Canada, USA, including Alaska, and Mexico), along with several rare or poorly known species that were included because of one interesting attribute or another" (p. 2). In all, the book features 120 discrete taxa (including named varieties) and recognized species groups, of which 88 named entities have been validly published and 28 have been provisionally described (e.g., *Amanita subcokeri* Tulloss nom. prov.). If my count is correct, approximately 80 of the covered taxa are found to the east of the Mississippi River (the Northeast and New England, Midwest, the Southeast and the Deep South). Some of the eastern *Amanitas* are very territorial and can only be found in restricted regions of the country, while others have a much broader distribution range. Knowing a species' distribution range can greatly facilitate its identification.

As mentioned above, species are grouped together according to what section of the genus they fall into morphologically, and there are seven sections housed in two subgenera of *Amanita*. The dossier of each discussed *Amanita* species starts off with a broad overview consisting of "...general information on tree hosts, along with seasonality and geographic range for the mushroom", as well as epithet etymology and important morphological attribute(s) that separate the species

from lookalikes. The morphological descriptions are fairly concise and yet clear and informative. The microscopic data included consists of the spore dimensions and Q values (length to width ratios). Each species is supported, on average, by two photographs. Some images take up a whole page, and are breathtaking in capturing the beauty of *Amanitas*, while others are much smaller, with some of these focusing on characteristic morphological aspects of the mushrooms.

In summary, this impressive and admirable book is a tremendous step toward the understanding and appreciation of North American *Amanita* by amateur mycologists at any level of expertise. It will undoubtedly contribute to the sharply improved efficiency and accuracy of field identification of *Amanitas* at club forays across the country, further fuel the interest of the general public in these beautiful fungi, and give rise to and sustain a whole new generation of local *Amanita* experts for many years to come.



A START!

by Jim Richards

NJMA's Robert H. Peabody goes online:
<https://www.librarycat.org/lib/njmabooks>

Detailed information of one third of our library is now available to view at your leisure. The books that are listed are those that are shelved at my home and consist of all the books you have seen reviewed in NJMA as well as the more general guides, the cookbooks, wild food books, and much more. Several of the Search categories that you might find most useful are: mushrooms (general books), fungi (more technical volumes), field guides, cook books. You can also search by author or title. When you are examining each entry, you will see a Ratings column; We have used that to indicate condition of the book, not critical evaluation.

There are a lot more books to be added and this will happen over time, so keep checking back. If there is a particular book you are interested in, just ask. We may very well own it.

Be aware that there are some quirks to the site. Library Cat, the program we are using, has a bad habit of selecting strange images for cover photos of some of the books. I am gradually correcting them as time permits. If you are a member in good standing and would like to borrow books, please contact me and we can work out a way to get the book to you (njmalibrary@gmail.com).

If you currently have any books on loan from the library, they must be returned ASAP. Contact me for details!

Normally, books would be delivered and picked up at meetings or forays, but we all know how that is working with Covid-19.



FALL IN LOVE WITH CRUST FUNGI

text and photos by Maricel Patino

There are some fungi that present themselves in two forms; anamorphic (asexual stage) and teleomorphic (sexual stage). (Some rusts have as many as five different disguises: synanamorphs). Dedicated mycologists through their studies were able to pair up these odd couples. Each form used to have its own name until recently, when it was agreed that only one name would be used for both forms.

Licrostroma subgiganteum (an asexual stage with huge conidiospores), which is now a deprecated name, has been replaced by *Michenera artocreas*. I went to a new site in Pemberton, the Evert Trail Preserve, which is very swampy with various types of deciduous trees and few conifers. Its trails are narrow boardwalks. I spotted *L. subgiganteum*, growing on top of a hanging small maple/poplar branch (crust fungi usually grow on the side or bottom of substratum). When I checked the branch I noticed a crust growing underneath. It was pastel yellow with a white margin (all details are important).

At home, under the microscope, I saw these gorgeous round spores with a prominent apiculus from the crust and also saw the huge conidiospores of *L. subgiganteum*. After I posted my observation, Tom Bigelow told me that *L. subgiganteum* grows sometimes together with its counterpart, which is a crust fungus and looks pastel orange; but 'mine' didn't have that color. I Googled it and found a Chinese document where the author posted two species of *Michenera* together: *M. incrustata*, (pastel yellow) and *M. artocreas* (pastel orange). 'Mine' looked like *M. incrustata*, according to the photos of the document. I went back to the Preserve and, this time, I found the pastel orange crust *M. artocreas*, the pastel yellow crust *M. incrustata*, and *L. subgiganteum*. (The last two together again!).

There is something not quite right yet. The orange crust is not growing together with *L. subgiganteum*. Although the size of the spores is a bit different between the two crusts, I couldn't find/see any incrustated cystidia in *M. incrustata*. A question I have in my mind is that in both crusts, the subhymenium (the rest of the crust below the fertile area) is made up of dendrohyphidia-like hyphae which wasn't addressed in the Chinese article (an important feature in many other crust fungi), and I am thinking that perhaps *Michenera artocreas* may be light colored when younger and turn orange when more mature (?).

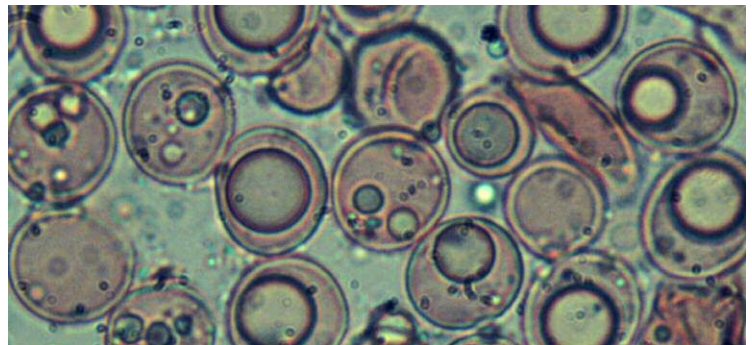
In spite of all the doubts, one thing is clear: no more *Licrostroma subgiganteum* but *Michenera artocreas*, and even if I'll never get this clear, I had the chance to 'know' directly these crust fungi while working on their microscopy. So much fun!



Michenera artocreas



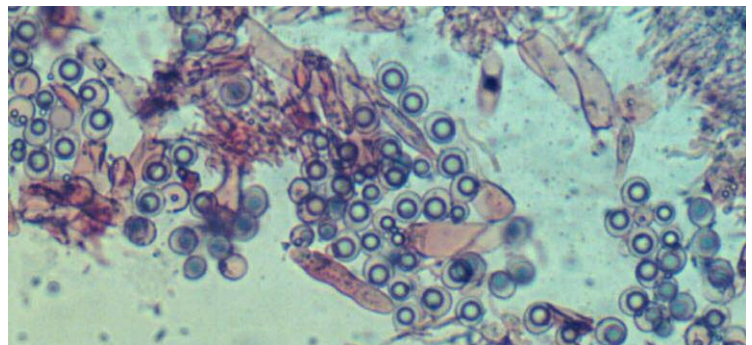
Michenera artocreas asexual stage



Michenera spore type



Michenera incrustata

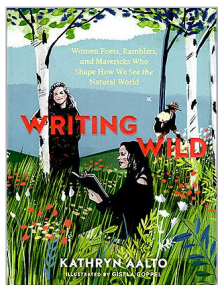


Michenera incrustata spores

BOOK REVIEW

WRITING WILD: WOMEN POETS, RAMBLERS, AND MAVERICKS THE EARTH IN HER HANDS: 75 EXTRAORDINARY WOMEN WORKING IN THE WORLD OF PLANTS

book reviews by Mike Rubin

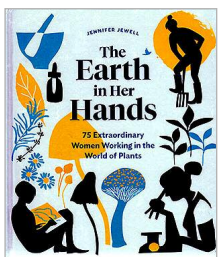


Writing Wild: Women Poets, Ramblers, and Mavericks

by Kathryn Aalto

Timber Press (June 23, 2020)
288 pages

ISBN-10: 1604699272
ISBN-13: 978-1604699272



The Earth in Her Hands: 75 Extraordinary Women Working in the World of Plants

by Jennifer Jewell

Timber Press (March 3, 2020)
324 pages

ISBN-10: 1604699027
ISBN-13: 978-1604699029

It's about time.

How timely is it that I was asked to review not one, but two, books written by women about women and their contributions to literature and botanical science/horticulture? I never quite understood why women were never given the credit they deserved for their contributions in the worlds of science and literature, or any other for that matter. My wife, mother, sister, aunts, and cousins are all strong women that steered me on my path of life. I would never even think to question their abilities or wisdom because of their gender.

The first book, *Writing Wild: Women Poets, Ramblers, and Mavericks Who Shape How We See the Natural World*, by Kathryn Aalto, is a great bibliographic source of the works by women that have written about nature. It is not an anthology of these works but does give snippets of their writing in order to pique your interest to read further. The book's strength is that it gives us the background of these authors which helps explain why they wrote about the subjects they chose and how their lives influenced their writing styles and subject matter. I liked it because it gives us a literary background like the kind I always missed in English lit classes. It really helps to give us more insight into their works.

The second book is *The Earth in Her Hands: 75 Extraordinary Women Working in the World of Plants*, by Jennifer Jewell. Unlike the previous book which was more bibliographic, this book is more biographic. It highlights 75 women that are working with plants in the fields of botany, horticulture, agriculture, and biological

sciences. Each biography details their contribution and their motivation for working in their chosen field as well as pointing out other women that influenced them to choose this field. It encourages us to pursue our interests knowing that we are not alone in these pursuits of all things botanical (or mycological).

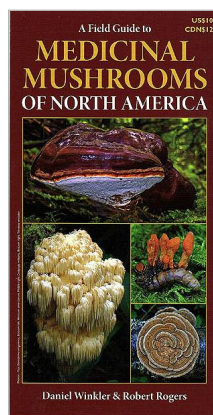
Both books are worth reading. They are available to NJMA members through the Robert H. Peabody Library.



BOOK REVIEW

A FIELD GUIDE TO MEDICINAL MUSHROOMS OF NORTH AMERICA

a review by Robert Saunders



A Field Guide to Medicinal Mushrooms of North America

by Daniel Winkler and Robert Rogers

Mushrooming Publishing (2018)
(pamphlet)

ISBN-10: 0990423816
ISBN-13: 978-0990423812

This is more of an expanded pamphlet than a book, with 16 foldout pages featuring 33 mushrooms. While accurate as far as they go, the experienced authors cannot put in much information due to the limited size.

After the cover, the second page consists of an Introduction (basically they say fungi have powerful immune systems, ergo they make good medicine); "How to Identify a Mushroom" (ask an expert before you try them); Fruiting Seasons (vary); Size (small, medium, large).

The next page is a detailed description of the making of mushroom extracts, using a combination of alcohol and water extractions. These are the standard methods used by knowledgeable herbalists, but mushrooms vary in their active constituents. Some mushrooms produce the best extract with water, some with alcohol, or some from both. The authors do not distinguish the preferred method.

Each of the mushrooms has a clear picture (nicely done for a small publication), a description, and a paragraph on its medicinal uses. The descriptions are clear and accurate, with Latin names, but again, limited. For example, spore prints or aroma/taste are not mentioned.

The medical uses for each mushroom are listed, with the source of their lore. Some are used in Traditional

(continues on next page)

Chinese Medicine (TCM), some uses come from Native Americans, some uses have been discovered by human or laboratory (double-blind, randomized) studies. They are mentioned without details about treatment, effectiveness or dosage, only that they have been found effective for some conditions.

The booklet is nicely done and well-researched. It brings together several uses of many fungi. But its compact format makes it only a teaser, not a real guidebook. If you are interested in *Fomitopsis betulina*'s uses, here is where to start looking. If you are interested in reducing cholesterol levels, you can find suggestions about what to look into further. If you are interested in medicinal mushrooms, this would be a good source to see where to begin further studies.



This is not a stick up, it is two trees down.

foray reports

MEADOWOOD PARK MENDHAM, NJ – JULY 11, 2020

by John Burghardt

Apologies for taking so long to get you a preliminary list of our finds at the first NJMA foray of 2020 at Meadowood Park in Mendham on July 11th. It was good to get out in the woods, to hunt for fungi, and then to examine, handle, and smell the many interesting collections everyone found. Fruiting conditions were pretty good, since it had rained two days before the foray, and the flush of fungi the recent rain would produce had begun to emerge. Participants came masked and adhered to distancing guidelines. Fortunately, there were opportunities to get away from the group periodically, which allowed one to draw a breath or two of fresh air without the mask. It was gratifying to meet and work with a bunch of strangers who were willing to take the steps necessary to protect everyone. Clearly adhering to distancing and mask requirements represents a major hassle for everyone. Personally, I view this as the “price of entrance” to be able to continue participating in something like our traditional forays during a pandemic. Thank you all.

Click on this link: <https://www.njmyco.org/downloadables/mw2020.pdf> to view a table which lists the collections from Meadowood Park that we were able to identify at least to genus. The list is arranged alphabetically within “form groups”. The form groups are defined by the types of structures that produce the fungus’ spores. Gills are the most common carrier of spores among the fungi that we typically collect. Please note that these “form groups” are a convenient way for amateur collectors like us to group fungi with similar features. But please realize these groups do not reflect genetic relationships.

The two columns on the right show the frequency with

which each species has been found based on records of all NJMA forays from 1981 to 2019. The first column to the right shows the number of years in which the species was collected; the second shows the total number of forays throughout that period. In 2020, we have begun to record lichens which are a symbiotic combination of fungus and algae or cyanobacteria. Thank you, Dorothy Smullen, for identifying and recording our lichen collections. The species names in bold type were collected for the first time on an NJMA foray. Nina posted photos of the species names highlighted in yellow on the NJMA Facebook page. If you took photos of your collections at the foray, feel free to post them on the NJMA Facebook page or, better yet, on *iNaturalist* (Google the name to get to the website).

Our foray lists usually show diversity across the form groups and in the frequency with which the fungi are found. This list is no exception. Our collections represent most of the form groups, and more than half the fungi collected have been collected multiple times in more than 20 years. We will likely see many of these again multiple times this year, giving newcomers the opportunity to learn some fungi by sight right away.

I wanted to highlight the two fungi on our list that were collected and identified for the first time at one of our forays. Both are crust fungi identified by Maricel Patino. As the table section head indicates, crust fungi lie flat against the wood substrate, and can have smooth, wrinkled, or poroid spore surfaces. The *Mycoacia fuscoatra*

(continues on page 9)



WHO'S IN A NAME?

Limacella persoonii

by John Dawson (seventy-ninth in a series)

In the first installment of this series, I noted that the foundations for mycological taxonomy were laid by the South African botanist Christiaan Hendrik Persoon and the Swedish botanist Elias Magnus Fries. The seminal nature of their contributions was recognized at the Seventh International Botanical Congress, held in Stockholm in 1950, where it was decreed that Persoon's 1801 book *Synopsis Fungorum* would be taken as the starting point for the taxonomy of rusts, smuts and gasteromycetes, and Fries's three-volume work *Systema mycologicum* (1821–1832) as that for all other fungi.

Unsurprisingly, then, over the years a large number of fungal species have been named after those individuals: *Index Fungorum* lists 167 fungal eponyms bearing the epithets *persooniae*, *persoonii*, *persooniana*, *persoonianum* or *persoonianus*,¹ and 216 with the epithets *friesii*, *friesiana*, *freseana*, *friesianum*, *friesianus* or *frieslandica*. Many of those names remain valid today, though none of the species bearing them seem to occur in North America. I have chosen the agaric *Limacella persoonii* to serve as a representative eponym for the subject of this profile. Fries will be the subject of the next.

Persoon was born at the Cape of Good Hope on the last day of December 1761² and died in Paris on 15 November 1836. He was the third and last child of Christiaan Daniel Persohn, a tailor who had emigrated to South Africa from Pomerania in 1749, and who later acquired Dutch citizenship, changed his surname to Persoon and, in 1757, married Elizabeth Wilhelmina Groenewald.

Tragically, Elizabeth died just four months after Christiaan Hendrik's birth, so it was fortunate that by then her husband had established himself as an importer and become financially well off — enough, presumably, to enable him to hire someone to look after their infant son.



Christiaan Hendrik Persoon

Nothing is recorded about Christiaan Hendrick's early education, but in 1775, aged 14, he was sent to the Netherlands for further schooling. After spending six weeks in Amsterdam, he enrolled at the Gymnasium in Lingen with the intention of preparing himself for university studies in theology. But, in April 1776, his father became seriously ill and died, leaving him and his two sisters orphaned. His own share of his father's estate amounted to more than 36,000 Dutch guildens, which should have been enough to provide him with a modest annual income. Until he became of age, however, he was placed under the guardianship of the Board for the Care of Orphans in Cape Town, whose payments to him were often so delayed that the Committee for Orphans in Amsterdam advanced him money to avert his becoming indigent.

Ten years after he reached the age of majority, Persoon had still not received all of his father's bequest, so, on the advice of a friend, he granted two men in Cape Town his power of attorney. In due course, they received 10,000 guildens from the Board of Orphans — but remitted nothing to Persoon, who never held a paid position, never married, and earned only small amounts from his publications. Consequently, he lived in dire poverty for much of his later life. Finally, eight years before his death, the Dutch government agreed to pay him a pension of 800 guildens per year in return for his donating his herbarium of some 14,000 plants to the University of Leiden.³

After graduating from the Lingen Gymnasium, Persoon studied theology for three years at Halle, but left in 1786 on account of bad health. Later that same year, he briefly studied medicine at Leiden before moving to Göttingen in 1787 to study medicine and natural science. He lived in Göttingen for the next fifteen years, but never completed his university studies. In 1799, however, he was awarded an honorary doctorate by the Kaiserlich-Leopoldisch-Karolinische Deutsche Akademie der Naturforscher (that is, the Imperial Leopoldian Karolinian German Academy of Naturalists) in Erlangen, and was later elected as a foreign or corresponding member of several learned societies.

(continues on [next page](#))

¹ The generic names *Persoonia* and *Personiella* are no longer current fungal eponyms, but the former is the name of a genus of small Australian shrubs and also of a biannual mycological journal published jointly by the National Herbarium of the Netherlands and the Westerdijk Fungal Biodiversity Institute.

² According to the entry on Persoon by M.A. Donk in the *Dictionary of Scientific Biography*, which I have used as my primary reference on his life. Oddly, two other sources give conflicting dates. An English summary "Notes on the Life of Persoon" by Richard de Zueew (published in *Mycologia*, vol. 31, pp. 369–370) of a Dutch article by J.L.M. Franken that appeared in vol. XV of the *Annale de Universiteit van Stellenbosch* gives Persoon's birthdate as 31 December 1762, while the Wikipedia entry on Persoon (from which the portrait of him reproduced here was taken) says he was born on 1 February 1761! nstitute.

³ Most of the information in this and the preceding paragraph is taken from the article in *Mycologia* cited above.

It is not known exactly when or how Persoon developed an interest in fungi, but at both Halle and Göttingen there were eminent botanists with whom he had some contact. In any case, during the years 1790–1793, he issued a three-part series of illustrations of fungi (*Abbildungen der Schwämme*)⁴ and, in 1797, the first draft of his classification system for fungi was published under the title *Tentamen dispositionis methodicae fungorum*. The *Synopsis fungorum*, on which his enduring fame rests, appeared four years later (his final year in Göttingen). In his entry on Persoon in the *Dictionary of Scientific Biography*, M. A. Donk describes the influence of that work “during the decades following its publication” as “enormous, for it made possible an unprecedented growth of the number of described genera and species of fungi.”

In 1802, for unknown reasons, Persoon moved to Paris, where he lived as a penurious recluse in a small sixth-floor apartment in a poor district near the Gare de Lyon. Nevertheless, he continued his botanical work. He maintained an active and extensive correspondence with other botanists, much of which is preserved in the University Library at Leiden and, during the years 1805–1807, published a work entitled *Synopsis plantarum* in which he endeavored to describe all seed plants then known. He also published three volumes of a major revision of *Synopsis fungorum*, the first in 1822, and the last in 1826, but that work remained incomplete at his death ten years later.

Persoon was buried at the famous Parisian cemetery Père Lachaise. He bequeathed his library and the plants he had collected since his donation to Leiden to the Dutch government.



⁴ According to the *Wikipedia* entry on Persoon.



MEADOWOOD PARK

is waxy looking, lies along dead deciduous branches, and has pointy teeth. The *Botryohypochnus isabellinus* lies flat along dead conifer or deciduous branches that have lost their bark, and the fruiting body is made up of a weft of fine filaments (hyphae of the fungus) that look like threads. Maricel posted excellent pictures of both collections on *iNaturalist*. To view them, simply do a Google search for “iNaturalist”, go to “Observations”, and search for each species by full name (Genus species). Maricel’s posting will come up.

Thanks to everyone who participated in the foray. It was great fun and we found many interesting fungi. Please let me know if you have questions or note errors or omissions in the list.

Stay safe and be well.

THOMPSON/HELMETTA PARK JAMESBURG – JULY 26, 2020

by John Burghardt

The day was hot, the park was crowded, and our logistics were challenging. Everyone got to the Thompson Park Dog Park, then either to the woods at Thompson or at Helmetta Bog, and then made their way back to a parking lot near Picnic Grove 2 where we assembled (and distanced) for sorting and ID. The woods were cool and pleasant, and a light breeze cooled our well-shaded picnic grove. Thanks to Betty Wise and Nina Burghardt for all the planning that made this work out, and for Middlesex County Parks for allowing us to gather.

As you can see from the table shown in this link, <https://www.njmyco.org/downloadables/thcp2020.pdf>, we made many interesting collections. The table lists the collections that we identified from Thompson Park (T next to the species name) and Helmetta Bog (H). The species in bold type are new to the NJMA list of fungi collected at club forays. The list is arranged alphabetically within “form group”. The form groups are defined by the types of structures that bear the fungus’ spores. “Mushrooms with gills” are the most common spore bearing structure among the fungi we typically collect. These “form groups” are a convenient way for amateur collectors to group fungi with similar features. But they do not reflect genetic relationships. We have also included some lichens as a separate form group.

I find this foray site especially interesting. Thompson Park is typical of New Jersey’s Inner Coastal Plain, with beautiful stands of mature mixed hardwoods. This geologic region extends from the southern part of the state in a 20+ mile band north along the Delaware River to just south and east of Trenton. There, the Inner Coastal Plain broadens to reach the shore in the east and continues north to the Raritan River with U.S. Route 1 as its western boundary. The rich, productive soils of this region earned New Jersey its nickname “The Garden State” over a century ago. More recently, farms have given way to highways, warehouses, and residential development. Helmetta Bog, now formally the Jamesburg Park Conservation Area, is a 1400-acre parcel of typical New Jersey Pine Barrens terrain. Helmetta is a geologic anomaly that Mother Nature plunked down in the central New Jersey Inner Coastal Plain nearly 40 miles of the northern boundary of the Pine Barrens. In reality, Helmetta is no longer typical pine barrens because the pine barrens depend on regular fire to preserve its unique tree flora, which consists of its dominant pitch pine, with small oaks and assorted deciduous shrubs, as well as Atlantic white cedar, plus maple, tupelo, and other deciduous shrubs in wet areas along the streams. But Helmetta provides a feeling for what the pine barrens are like in mid-

(continues on page 11)

CALENDAR OF UPCOMING EVENTS

As you all are very much aware, most of the events, local and nationwide have been cancelled or radically altered.

FORAYS

All of the NJMA Forays that have been scheduled for this summer and fall are fully booked. Our Foray Chair, Nina Burghardt has said that there may be occasional cancellations. If you wish to be placed on the wait list for any foray, contact her at jnburghardt@verizon.net.

August 30 (Sunday) Stokes State Park (Kittle Field)
September 12 (Saturday) Horseshoe Bend Park *
September 20 (Sunday) Wawayanda State Park
September 27 (Sunday) Cattus Island County Park *
October 4 (Sunday) Chestnut Branch Park
October 11 (Sunday) Estell Manor Park
October 17 (Saturday) NJ Forest Resource Education Center
October 25 (Sunday) Wells Mill County Park
November 1 (Sunday) Belleplain State Forest

(* just added)

ONLINE EVENTS AND VIRTUAL ZOOM LECTURES

Friday, September 4, 7:00pm

Jasmine Richardson: “The Limitations of North American Truffle Production”

Friday, September 18, 7:00pm

Jay Justice: “A look at Amanitas in the NE region of the US”

Friday, October 2, 7:00pm

Leon Shernoff: “Fall Edibles of the Mid Atlantic Region”

ONLINE TAXONOMY SESSIONS

Don't forget that every Tuesday evening at 7:00 PM, Education Chair Luke Smithson is hosting a Taxonomy Session on Zoom. Details are sent in weekly emails from Luke. This is a great opportunity to share your finds with other members.

UV-EMITTING ROBOTS ROAM VINEYARDS TO KILL FUNGUS

by Ben Coxworth. Reprinted from The Spore Print, newsletter of the Los Angeles Mycological Society. Issue no. 421, June 2020

Powdery mildew is a widespread fungal disease that attacks many crops. And while it typically has to be treated using fungicides, special ultraviolet light-emitting robots could soon prove to be a better way to go.

There are several problems with the use of powdery mildew fungicides. For starters, they're expensive, environmentally unfriendly, and time-consuming to apply. Additionally, because the fungus adapts to them on an ongoing basis, new versions constantly have to be formulated.

Like other organisms, the powdery mildew fungus is vulnerable to the DNA-damaging effects of ultraviolet light. It has a defense mechanism that protects it from UV rays, though, which is triggered by the blue light within natural sunlight. This means that even though sunlight also contains ultraviolet light, the fungus isn't harmed by it.

In order to get around this problem, an international team of scientists has created wheeled robots that autonomously move along rows of grapes in vineyards, every night after the sun has gone down. As they do so, the “Thorvald” robots shine UV light onto the plants' leaves. Because no blue light is present, the fungus' defense system isn't triggered.

As a result, powdery mildew is successfully eliminated. And because the intensity of the UV light is relatively low, the plants themselves remain unharmed. The technology has also proven to be effective against downy mildew (another fungal disease), along with certain types of pest insects.

A couple of the Thorvalds are currently undergoing field trials in two vineyards in the state of New York. Down the road, plans call for the system to also be capable of detecting how much of the fungus is present on individual plants, so it can vary the light treatment accordingly.

(continues on page 15)

THOMPSON/HELMETTA COUNTY PARK

summer, without the risk of getting lost on endless sandy roads or attacked by chiggers in the heat of mid-summer. Most of the fungi we find there are typical of those we find at Pine Barrens foray sites in Ocean, Burlington, and Atlantic counties.

The foray produced a diverse collection of approximately 90 taxa. All fungus form groups are represented, as well as myxomycetes and lichens. Thanks to Dorothy Smullen for assembling and identifying the lichens. There were several mycorrhizal species. These fungi obtain their food through a symbiotic exchange with trees. Our collections of mycorrhizal fungi included *Amanitas* (10 taxa), *Russula* (8 taxa plus at least 4 not identified to species), *Lactarius* (1 taxon), 8 genera of *Boletes*, two genera of *Chanterelles*, and one *Telephora* species. Two collections were parasites of other fungi: *Hypomyces chysospermus*, which parasitizes bolete species, and *Hypomyces hialinus*, which parasitizes *Amanita* species. The remainder are saprobes, or wood decomposers. As the hyphae of saprobes make their way through the substrate, they release chemicals that decompose the cellulose and/or lignin of the dead trees, and then the fungi ingest these compounds as their source of food energy. There is usually a succession of different fungal decomposers over many years before a tree is returned to the soil.

In closing, I would like to highlight two interesting fungi that Maricel Patino identified. Both are new to our NJMA list. Both appear to be examples of species with a primarily southern distribution that have migrated north.

Coltriciella oblectabilis is a tiny stalked polypore found on a damp, debarked dead pine log in Helmetta. This is Maricel's second ID of this species from New Jersey. I found records of five herbarium collections from the southern US, Mexico, and Belize on *MycPortal* plus collections listed by Gilbertson & Ryvarden from Florida, Louisiana, Georgia, West Virginia in their 1986 monograph on polypores in North America. I found no records of this species on Mushroom Observer or iNaturalist, except Maricel's collections.

Steccherinum subrawakense (or *rawakense* according to iNaturalist). When viewed from above, this species is a deadringer for *Trametes ochracea* or any number of other small, thin, conch-shaped fruiting bodies. Sometimes these *Trametes*-like caps turn out to be, well, *Trametes* (when they have pores on the fertile surface); sometimes they turn out to be *Stereum* (when the fertile surface is smooth and leathery). In this case the fertile surface showed distinct, tooth-like structures

where the gills should have been, which are typical of *Steccherinum*. I found several records of this taxon from east Texas, but none on *Mushroom Observer*.

You can find Maricel's very good photos of these two unusual species by getting on iNaturalist (www.inaturalist.org/observation) then searching for these species by name.

Thanks to everyone who participated in the foray. It was great way to spend a hot summer day. Please let me know if you have questions or note errors or omissions in the list.

CRYSTAL LAKE PARK MANSFIELD TWSP. – AUGUST 2, 2020

by John Burghardt

What a difference a week makes. This past Sunday at Crystal Lake Park, the previous week's heat and humidity seemed to have moderated and there were surprising reserves of moisture in isolated spots. A lively breeze helped make the day more comfortable. Fortunately, everyone but Liz Broderick remembered the early start time. But since Liz had arranged this foray, we could be sure she wouldn't get lost. And sure enough she caught up with Dave Mosko and me exploring the low spots along the yellow trail just before 10:00 am. Undeterred by the shortened collection time, Liz, found some neat specimens.

I became curious about how much of what we found at Crystal Lake Park was also found at Thompson/Helmetta (especially Thompson). I was expecting to find considerable overlap between the two species lists because the terrain and mix of trees are similar in the two locations. Both are typical of our New Jersey Inner Coastal Plain with rolling terrain and small streams. Of course, some of the overlap in the species lists is likely due to Common species, which are found often and pretty much everywhere.

Here's what I gleaned about overlap of our finds at Thompson/Helmetta from the Crystal Lake species list. A total of 25 species out of 70 identified at Crystal Lake Park this past Sunday were also found at Thompson or Helmetta on July 26th. Of these 25, 11 are on the NJMA List of Common Fungi (collected multiple times in every year from 1981 through 2019), another eight have been collected frequently (defined as collected in more than 10 of the 39 years in which NJMA has been keeping foray records), and six are Uncommon (defined as having been collected in 10 years or fewer of the 39 years). This breakdown suggests to me that not quite half of the overlap is likely due to the fact that Common species are likely to be found in many places and so are not unique to the conditions at Crystal Lake Park and Thompson Helmetta Park. At the other extreme, the six

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CRYSTAL LAKE PARK

Uncommon species are quite likely to be found in both locations because specific conditions and tree species are present in both locations.

You can look at the Crystal Lake species list by going to <https://www.njmyco.org/downloadables/clp2020.pdf>

Thanks to Liz for making arrangements to use the park and to Nina for seeing to the many details necessary for us to hold our forays during a pandemic.

Thanks to everyone for many excellent collections, and for help with sorting and identification. Stay safe, stay healthy. Hope to see you again, soon.

GREEN TURTLE POND LONG POND IRONWORKS STATE PARK RINGWOOD – AUGUST 16, 2020

by John Burghardt

NJMA has always held its scheduled forays “rain or shine”, except when the foray venue was closed (think Super Storm Sandy). I have vivid, fond memories of collecting and identifying in the rain at NJMA forays.

So, I wasn't too worried, when a light rain intensified as I left home for the 90-minute drive to Green Turtle Pond. I was dispatched early to select a spot and deliver the folding tables and chairs that we would use for identification and display of our mushroom collections. Our meeting location was a parking lot about .5 miles off the main road north to Greenwood Lake, which offers access to Green Turtle Pond for fishing, canoeing, and kayaking. The rain stopped just as I arrived. Members began arriving and we soon got into the woods.

As you can tell from the linked .pdf file at <https://www.njmyco.org/downloadables/gtp2020.pdf> containing the species list, we found a diverse collection of fungi. The list is arranged alphabetically within “form group”. The form groups are defined by the structures that bear the fungus' spores. “Mushrooms with gills” are the most common spore bearing structure among the fungi we typically collect. These “form groups” are a convenient way to group fungi with similar features. But they do not reflect genetic relationships. Our collections also include Lichens, as a separate form group.

The Green Turtle Pond foray was notable for the large number of boletes that came in. Thanks to Igor Safonov for identifying a total of 17 taxa of boletes, and to Nina for getting the photos to Igor. We collected fewer of the gilled mycorrhizal taxa (*Amanita*, *Cortinarius*, *Lactarius*, *Russula*, and *Cantharellus*) than I expected given the wet conditions.

I am always drawn to the seldom collected species we find. I wanted to give you some information about the seldom collected taxa among our finds. Below is a very brief description of the 12 taxa on our list that have been collected in fewer than 10 of the 40 years the club has been keeping records of its finds. Below the species list in the attached pdf is a listing of the 12 briefly described seldom collected species with a (hopefully live) link to all *Mushroom Observer* observations for that species. Of course, some MO photos are better than others, and not all are correctly identified. Still, I find that these photos often convey a good sense of the variability exhibited by live specimens in the field. Very often specimens we collect don't look like the pictures in the field guides, even though they match a written description.

Here are brief descriptions of the seldom collected taxa, by form group:

Gilled Mushrooms

Entocybe vinacea is a small, sturdy little mushroom with brown cap, brown stem, and pinkish gills. It is a classic boring Little Brown Mushroom (LBM). Nina found it in my basket, and keyed it out. I photographed most of my collections, but unfortunately, not this one. There is no photo of this species on MO or *iNaturalist*. So Nina's two mugshots are below.



Entocybe vinacea
v. *fumosipes*



PHOTOS BY NINA BURGARDT

Gymnopus semihirtipes has a small fruit body with a small cream-colored cap with a brown nipple, whitish gills, and a thin, smooth, reddish brown stem. See link to MO photos in table.

Boletes

Aureoboletus roxanae Cap convex to flat, reddish brown to buff. Pores white to pale yellow. Stalk yellow to pale yellow, minutely hairy, often with lines. See link to MO photos in table.

Boletus vermiculosoides has a cap with shades of brownish red, pore surface is dark red, becoming

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orange or brownish red, stains blue, stem is yellowish at first with hairs (but no reticulum), becoming brown. See link to MO photos in table.

Lanmaoa pallidrosea Cap has pink and golden yellowish tone. Pores are yellow to pallid brown and bruised blue. Stem is yellow and pink. See link to MO photos in table.

Suillus spraguei Cap is scaly red, spores yellow initially and covered by a thin veil, stem red-scaly on a yellow background. See link to MO photos in table.

Xanthoconium purpureum Cap is maroon or reddish brown. Pore surface is white, then yellowish cream. Stem is pale yellowish brown with a delicate red net. See link to MO photos in table.

Polypores

Ganoderma sessile This polypore used to be called *G. lucidum*, which DNA studies have confirmed does not occur in northeast North America. It has a red/brown shiny (lacquered looking) cap, which sits atop a shiny red brown stem. The pore surface is white. See link to MO photos in table.

Crusts

Mycocacia fuscoatra lies in flat patches on the underside of well-rotted logs and branches. Surface is spiny or tooth-like. Color is extremely variable (grayish, orange, reddish, brown). See link to MO photos in table.

Xenasmattmella vaga consists of wispy, soft yellow threads lying flat along the underside of dead logs. See link to MO photos in table.

Tooth fungi

Radulomyces copelandii lies flat against dead hardwood. Spore surface consist of teeth. An outer edge of the fruiting body lacks teeth. See link to MO photos in table.

Puffball

Scleroderma bovista is a small brown puffball, sometimes with a small, stem-like appendage. The thin leathery skin encases spores that are purple black to black in maturity. See link to MO photos in table.

In closing, thanks to everyone who participated in collecting, sorting, and identification. It's a beautiful location and we were able to make ourselves quite comfortable, despite the lack of amenities. It was a long trip for some, but definitely worth it, and well worth returning. Special thanks to Igor who couldn't make the trip from south Jersey, but participated "virtually" in the Bolete identification.

Please let me know of additions or changes to the list. Hope to see you again soon.

SCHIFF NATURE PRESERVE MENDHAM – AUGUST 8, 2020

by Dorothy Smullen

It was a perfect day for mushrooming after a stormy week. Thanks to Nina and John who checked out the road situation the day before. Many nearby residents were still without power, with many big trees down.

Many new members walked with masks on and enjoyed a very colorful collection. Russulas in reds, yellows and greens were collected. Yellow-orange smooth chanterelles were found in many baskets. The velvety red-orange *Marasmius sullivantii* was identified. Wood stained by the blue-green cup appeared as well. Even *Hydnellum spongiosipes*, that dyes wool in teal blue-green, was collected. There was even a pink plicate "parasol". But, the best color went to collected by Maricel, *Callistosporium purpuromarginatum*, delicate purple cap and gills on wood. Also showing purple edges everywhere was fresh *Trichaptum biforme* – an important decomposer.

Addendum from Dorothy:

WOW... I did a search on this "new" species and guess where and who did the first described *nom-prov!* Ray Fatto and Alan Bessette in *Mycotaxon*, Oct.-Dec. 1996. Where? At Rutgers' Hutcheson Memorial Forest in Somerset County.

It is deposited in our herbarium according to the first page of that article.



PHOTO BY DOROTHY SMULLEN

A fresh Trichaptum biforme showing off its purple

Visit the NJMA
Discussion Group



<http://tinyurl.com/jjualgz>



BYTES, BITS, & BITES TASTY LITTLE TIDBITS FROM OUR MEMBERS

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

from Sue McClary:

Fungi discovered via Twitter:

<https://tinyurl.com/yaccxpne>

from Sue McClary:

Social distancing ant mushroom harvester podcast:

<https://tinyurl.com/yb2zz4vcj>

from Sue McClary:

Magic mushroom drug evolved to mess with insect brain:

<https://tinyurl.com/y8bqsbpe>

from Sue McClary:

Cooking *Cordyceps militaris*:

<https://tinyurl.com/yazkbpnl>

from Sue McClary:

Estonian mushroom scientists among the best in the world:

<https://tinyurl.com/ybtl8wsv>

from Lyla Meader:

Forest Fungi Ride Out Wildfires by Hiding Inside Plants:

<https://tinyurl.com/u6fouc9>

from Sue McClary:

Mushrooms heal the earth:

<https://tinyurl.com/ydc2tu82>

from Sue McClary:

Friend or Fungi:

<https://tinyurl.com/y7cr75sa>

from Sue McClary:

Will *Lactarius peckii* become NY's state mushroom?:

<https://tinyurl.com/ybxn5wxp>

from Sue McClary:

Enoki *Listeria* outbreak is over:

<https://tinyurl.com/tnvmwyk>

from Sue McClary:

Symbiotic underground fungi disperse by wind:

<https://tinyurl.com/y92e3u8u>

from Judy Glattstein:

Another Chinese Mushroom Hunter, with Dog - :

<https://www.youtube.com/watch?v=3emTwly9onk>



Anna Terry with Poppy, who found the 910 gram summer truffle.

TRAINEE DOG FINDS RECORD TASMANIAN TRUFFLE

by Jessica Moran. Reprinted from *The Spore Print*, newsletter of the Los Angeles Mycological Society. Issue no. 421, June 2020

It was a cold and rainy morning when Anna Terry made a staggering find on her family's truffle farm near Deloraine.

"It's the biggest truffle we've ever had here," Ms. Terry said. "It weighs 910 grams, which is definitely our record."

Ms. Terry said her trainee truffle sniffing dog, Poppy, made the discovery last week.

"Poppy just started digging and didn't stop, then I started to see how big it was," Ms. Terry said.

"It just kept going and I started to get more and more excited."

"My dad Tim was at the farm, too, and I called out to him to come over, he was shocked to see it. He founded Tasmanian Truffles more than 20 years ago and it's one of the biggest he's seen."

Ms. Terry said anything over 500 grams was considered a large truffle.

"There have been some in Tassie that've been around the 1 kilo mark," she said.

"It was a great find for Poppy."

The truffle would have been worth \$1,500.

Ms. Terry said there was no way to predict how big a truffle would be when harvesting.

"It's just the luck of the draw really," she said. "Truffles ideally need nice, loose, free draining soil and lots of room to grow, which is clearly what happened here, it got really big."

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See our calendar
(page 10)
for information
on our new
FRIDAY EVENING
VIRTUAL LECTURES

ACCORDING TO A CHEF TURNED MUSHROOM SCIENTIST, WE'VE BEEN COOKING MUSHROOMS WRONG ALL THIS TIME

by Chynna Santos. Reprinted from *The Spore Print*, newsletter of the Los Angeles Mycological Society. Issue no. 421, June 2020

Mycologist Jim Fuller – co-founder of *Fable*, a new company making mock meat out of shiitake mushrooms – reckons you can extract loads of meaty flavour from most fungi by turning a long-standing French technique on its head.

Don't wash your mushrooms or get them wet. Use lots of oil or butter. High, high heat. Don't overcrowd the pan. Cook in batches. No salt until the very end.

These are the cardinal rules we've heard time and again when it comes to cooking mushrooms and keeping them from turning into a sad, soggy mess.

But mycologist Jim Fuller has been studying the spongy morsels and the best ways to cook them for years, and he says conventional culinary wisdom doesn't align with the science.

"[The current method] comes from French classical technique: because mushrooms are full of water, the idea is to get rid of as much water as possible," he says. "But those techniques were designed when our understanding of fungi and their cellular structures was too young – not necessarily flawed, but they weren't well understood."

Prior to co-founding Fable Food Co, a company that makes mushroom-based meat alternatives, Fuller studied chemical engineering in San Antonio, Texas, and also worked as a chef.

According to him, the trick isn't to keep the mushrooms dry and remove as much moisture as possible. Instead, you can use all that water to your advantage and boil the mushrooms before frying them.

Start with your mushrooms in a cold pan, add some tap water (enough to cover them), and turn the heat up high. Or you can boil some water and drop the mushrooms in.

"Adding just an extra bit of moisture into to the pan will encourage the mushrooms to release all of their own," Fuller says.

When the mushrooms are tender, let the water evaporate until the pan is pretty much dry. By the time the water has evaporated, the mushrooms will have released as much moisture as they can bleed out. This is when you add your fats (butter, oil) and aromats (thyme, garlic) and sear off the 'shrooms.

"If we put them straight into a pan with fat, the water coming out of the mushrooms would buffer the temperature of the oil and keep it low, so you won't get that Maillard reaction," Fuller says.

"This method allows you to get a silky texture without adding much fat at all. There's a fattiness and texture there due to the polysaccharides that mushrooms have ... so they have their own inherent silky creaminess," he says.

The technique – which Fuller's created a video for – is suited to most mushrooms, from the buttons and caps you can get at supermarkets to wild-foraged varieties such as pine or slippery jack. One exception is enoki mushrooms, which Fuller says would be better dropped into soups at the last second or stir-fried for a short period.

In Fuller's eyes, a simple combination of olive oil, salt and pepper is enough to highlight the mushroom's meatiness, and it's this natural umami and depth of flavour that led him and Fable co-founders Chris McLoughlin and Michael Fox to use mushrooms in their plant-based mock meats.

Two-thirds of the product is made with shiitake mushrooms, while the rest of the nine-item ingredients list includes coconut oil, isolated soy protein, tapioca flour and seasonings.

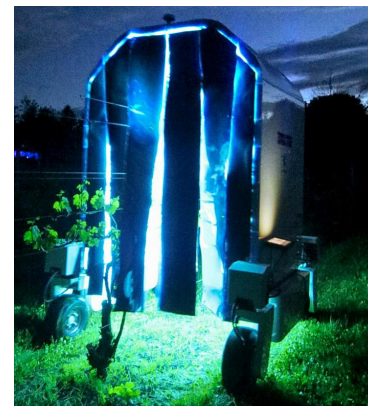
There's only one product available for now – a "braised beef" that's a bit like a cross between pulled pork and beef brisket – though the team is also working on a burger patty. (June 2020. *Broadsheet.com.au.*)



UV-EMITTING ROBOTS

(continued from page 10)

The research group includes scientists from Cornell University, the University of Florida, New York's Rensselaer Polytechnic Institute, and Norway's Institute of Bioeconomy. Norwegian company SAGA Robotics designed and built the robots. (June 2020. *NewAtlas.com*)



Each Thorvald robot is equipped with an 8 by 4-foot (2.4 by 1.2-m) array of UV lamps.

Credit: John Munson/Cornell University.

TRAINEE DOG FINDS RECORD TASMANIAN TRUFFLE *(continued from page 14)*

She said the flavour of the record truffle was not affected by its large size. “[A truffle is] the same flavour regardless of how big it is. They’re not like some oversized vegetables that you see which typically have a bit of a watered-down flavour.”

She said the record truffle was one of the last from this year’s summer truffle season and would have been worth around \$1,500 if sold.

But Ms. Terry said selling the delicacy with COVID-19 restrictions in place would have been difficult, so it instead had been cut up.

“Typically, a truffle of this size would have been sold

internationally, they’re somewhat of a novelty,” Ms. Terry said. “Even a restaurant here couldn’t have used all of it so I had to cut it up.”

“It will probably all end up in my tummy.”
The farm will soon be reopening for tours once corona virus restrictions ease, and the winter truffle season is due to start soon.

“Winter truffles are stronger in flavor and carry a sweeter aroma, these cost more than the summer variety, as the flavor goes further when cooking with them and you don’t need to use as much,” Ms. Terry said.

“Wouldn’t it be nice if I can find a winter truffle that size.” *(May, 2020. Abc.net.au)*



WELCOME TO ALL OF OUR NEW NJMA MEMBERS!

We’d like to extend a warm welcome to the following members who joined us between April 28, 2020 and July 27, 2020.

We look forward to seeing you at lectures, forays, and other NJMA events once they resume! Happy ‘shrooming!

Jill Mastromonica	Monmouth Junction, NJ
Jacob Matowik	Ogdensburg, NJ
Ambra Melendez	Linden, NJ
Toomas Menser	Bradley Beach, NJ
Tatiana Meyzin	New Providence, NJ
Amy Miller	Ringwood, NJ
Derek Moore	Monmouth Beach, NJ
Gheorghita Negreanu	Plainsboro, NJ
Samantha O'Brien	Edison, NJ
Anthony Ortega	Somerset, NJ
Kevin Portscher	Ringwood, NJ
Diego Mauricio Ruiz Proano	New Rochelle, NY
Valerie Rousseau	Hoboken, NJ
Rebecca Salazar	Princeton, NJ
Georgia Saler	Egg Harbor City, NJ
Kate Sheldrick	Point Pleasant, PA
Douglas Smith	Ocean City, NJ
Rebecca Stambach	Pittsburgh, PA
Jedd Strauss	Newark, NJ
Patrick Sullivan	Warren, NJ
Justyna Surowiec	Linden, NJ
Madeline Vorenkamp	Princeton, NJ
Christopher Welles	Newton, NJ
Garfield White	Montclair, NJ
Mark Williams	San Mateo, CA
Wreckroom Records, LLC	New York, NY
Evelyn Abramson	Manalapan, NJ

Daniel Brady	Bethlehem, PA
Isa Brito	Brooklyn, NY
Sheila Caldwell	Northfield, IL
Jillian Cawley	Cherry Hill, NJ
Jiaji Chen	Brooklyn, NY
Sarah Chen	Dumont, NJ
Yanling Cheng	East Brunswick, NJ
Ekaterina Chudimova	Harrison, NJ
Olivia Conforti	Barneгат, NJ
Joseph Connell	Blackwood, NJ
Christopher Conte	North Plainfield, NJ
Julianna Diaz-Navas	Old Bridge, NJ
Phillip Espino	Clifton, NJ
Gideon Evans	Brooklyn, NY
Cheryl Floyd	Pitman, NJ
Ryan Foulke	Ottsville, PA
Audrey Garrett	Philadelphia, PA
Maria Glover	Berlin, NJ
Ray Gridley	West Milford, NJ
Melissa Gutowski	Bordentown, NJ
Maryann Hardesty	Trenton, NJ
Amy Hertzog (Church)	Avondale, PA
Patricia Hjelm	Dimdock, PA
Thomas Hong	Pine Brook, NJ
Elizabeth Jackosky	Northampton, PA
Oxana Katzenelinboigen	Glen Rock, NJ
Alicia Kominsky	Asbury Park, NY