The North American Truffler

Journal of the North American Truffling Society

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In this Issue:

April 9, 2019 Speaker: Ying Chang Endogonales – A truffle-producing fungal lineage with an ancient history

If you've ever pondered the mechanics underlying the colonization of land by plants be sure not to miss the NATS April 2019 meeting. Dr. Ying Chang, research associate with Oregon State's Department of Botany and Plant Pathology, will describe her fascinating pursuit to unravel the story of the evolution of early land plants and fungi.

Ying was unable to give her talk originally scheduled for March, so she graciously agreed to reschedule for April. You can read more about her talk in the last issue of the Truffler.

Congratulations to Pavelek Scholarship Awardees Sam Fox and Arthur Grupe II! See page 5 for more details.

UPCOMING MEETINGS

All general meetings are held at 7:30pm in room 2087 of Cordley Hall on the Corvallis OSU campus. Cordley is reached via Orchard Avenue east of 30th St; click here for a street map. Room 2087 is on the second floor on the south side of the building; click here for a building map. Parking in any of the A1 lots is free after 5pm.

May 7, 2019 Speakers: Jim & Jamie
Truffle hunting across three continents and two oceans

Jim Trappe's career in mycorrhiza and truffle research began well before the 1995 birth of his grand-nephew, Jamie Ure. In those intervening years, Jim kept busy, earning his Ph.D. in Forestry from the University of Washington and landing research positions with the U.S. Forest Service PNW Research Station. In 1965, Jim became Project Leader in Forest Mycology at the Forestry Sciences Lab in Corvallis. Then he spent 10 years as a Research Professor at the OSU College of Forestry until 1996, when he became Scientist Emeritus at the Forestry Sciences Lab.

His 1st scholarly paper was published in 1957, in the infancy of mycorrhiza and truffle research. Jim has now published 500+ scholarly papers, co-authored five books, discovered and named 200+ new species around the globe, and supervised/ collaborated with 24 graduate students. He delights in continued studies of truffle taxonomy the world over with friends and colleagues and, now, his designated Truffle Science Interns.

<u>Enter James Ure</u>

Jamie Ure may be the luckiest guy in town. And out of town. Out of the country, for that matter! It started with a phone call: "Jim, Mom says you're going to Australia. Can I go?" It was the beginning of a beautiful globe-trotting partnership.

Being introduced to the world of truffling by its renowned guru has its advantages: Jamie was entranced. But the Force is strong in Jamie- he found his first truffle, *Rhizopogon parksii,* on his very 1st truffle hunt with Jim at a local Corvallis Park. Since then he has accompanied Jim on truffle expeditions in exotic locales. June of 2017 found them in Australia for two months of truffling on Queensland Atherton Plateau. Truffling south to Victoria, they led forays with local mycological clubs. Jaime's ability as a natural-born truffler became apparent as he consistently found half of each day's catch.

Jamie continues to hone his talent in various other settings, from working with trained dogs in truffle orchards to photographing collections and studying microscopic techniques pertinent to identification.

I don't know where they will go next but two things are certain:

1. Jim's truffle interns keep him feeling young while he turns them old before their time and
2. You won't want to miss the May speaker meeting as old and young share their adventures pursuing the joy of truffles. And how they earned the medals…

Saturday, June 8, 2019 Speaker: Sam Fox
Investigation of different fire severities resulting in distinct soil fungal community trajectories

NATS will have a special Saturday meeting in June because Pavelek award winner Sam Fox (Name seem familiar? read about her on page 5!) will be in Oregon doing field work for her PhD research. She will share her ongoing research about the impacts of fire on soil fungal community trajectories.

Yes, this is the only photo we have of Sam!

Wildfires: hot topic, growing ever hotter. What happens in the aftermath, especially for the little guy?. Fire frequency and severity are predicted to increase in coming years in response to drying climates, human impact, and management practices, including long-term fire suppression. This phenomenon is already visible in the western United States, an area witness to extreme fire conditions and resultant large-scale fires in recent years. Critically, fires do not burn uniformly through a terrain; rather, they burn in patches and with varying severities, subsequently creating landscape mosaics with chemically and biologically distinct features. Patches with high severity burning may experience more intense, lasting impacts, both above and below ground. Conversely, low severity fire patches may experience transient, less intense effects. Join NATS as Sam takes us from the macro to the micro in understanding how soil microbial communities and the taxa within are impacted by fire events.

NATS History Corner

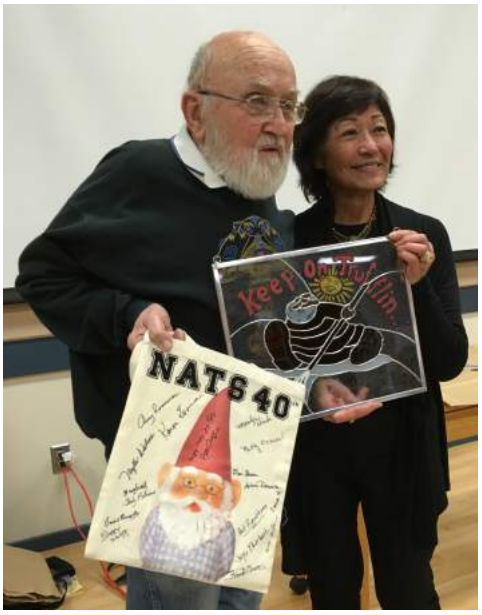
2019 Potluck Highlights

This year, NATS held its annual potluck in February, a move intended to avoid the inclement weather and holiday madness typically accompanying the event's historical December occurrence. In accordance with Murphy's Law, it snowed, but that did not stop attendees from enjoying a lovely evening.

Just one of many fabulously creative potluck dishes. These hand-made mushrooms are a creation of D. Ryan.

Sylvia Donovan and Betty Olsen being honored for their priceless contribution to the OSU Herbarium. Quite the duo!

Exiting NATS Secretary Pat Rawlinson receives a plaque of appreciation and memory book spanning NAT's 40 year history from Vice President Joyce Eberhart. Missing: Exiting Treasurer Zelda Carter, who will hopefully retrieve her plaque of appreciation at the next NATS meeting.



Dr. Jim Trappe, stunned but pleased as he accepts a custom made work of stained glass from NATS President Marilyn Hinds.

An infamously delicious truffle pate courtesy of Frank and Karan Evans!

2019 Pavelek Scholarship Awardees

Samantha Fox is a third-year PhD student at Kansas State University where she studies the impacts of fire on soil fungal community trajectories. Sam demonstrates an excellent understanding of her study system, including the taxonomy and modern molecular methods necessary to fully catalogue and track the changes of holistic fungal community composition in response to fire in forested ecosystems. Her research promises to illuminate fungal sensitivity and resilience to different fire severity levels.

Described by colleagues as a highly-deserving and exemplary student, Sam exhibits a strong commitment to conducting rigorous science. Coupled with her enthusiasm, work ethic, and attention to detail, Sam possesses high potential for an impactful career as a scientist and mycologist. Her work will aid the mycological community at large in better understanding and predicting how different forest management strategies and fire regimes will impact the distribution and abundance of fungi in forests.

Sam is no less enthusiastic in her commitment to communicating the importance of fungi to undergraduate students through her role as a teaching assistant in Organismal Biology. Her involvement with the Women in Science and Engineering workshops at Kansas State University certainly qualify her as a positive role model and productive member of society.

Congratulations, Sam!

Arthur C. Grupe, II is a doctoral student at the University of Florida where he studies interactions between *Tuber* species found in pecan orchards. His research investigates questions from a taxonomic, systematic, and applied basis, with one goal being to increase yields for commercial pecan truffle harvests. Arthur's work has already resulted in a number of peer-reviewed publications with more to follow upon completion of his doctoral program.

Arthur's list of accolades does not end with mere publication, however. He deserves at least as much praise for his mentorship efforts and acting on his desire to educate the public. ANYONE who takes it upon themselves to organize, design and deliver workshops on ever changing taxonomy to middle school and high school teachers- leaving them not just knowing more about fungi (truffles in particular) but excited to learn more- ought to be considered a strong candidate for sainthood.

The Pavelek Memorial Scholarship will fund Arthur's travel to the 2019 Mycological Society of America Meeting where he will present the findings of a long-term pecan truffle field experiment.

Congratulations, Arthur!

Thelephora terrestris: life, the universe, and everything

by Bailey Rodgers

The first foggy morning of fall in the Pacific Northwest is more special than much else I have known. Perhaps it is just the pure beauty that emerges, as the golden dawn opens across rich wet forests, mosses expanding greedily and grasping for every dew drop now illuminated and sparkling with the freshness of a new day. Like the first blooming snow queen inviting the rest of spring to follow, these early fall mornings are sweet harbingers for the cozy days ahead. For the breads and cakes and soup on the stove, for hot coffee shared over leaky gutter serenades, for dogs curled up by the fireplace and the sight of breath lingering in cold air.

On these mornings, when the long summer fast slowly breaks over the misty mountains, I can't help but look at my baskets with dire impatience, for my nostalgia of the cold is not all that this good dewy dawn inspires. I always find it funny how the days leading up to mushroom season seem long even though they technically get shorter. I think it's the anticipation of a big pot of *Chanterelle* chowder, *Hypomyces* with linguini, and *Boletus* simply with butter and nutmeg that carries the day more slowly. There is also the anticipation of the unknown, as John Muir might say: "In every walk with Nature one receives far more than she seeks." This couldn't be more true than during an autumnal stroll through the forest.

By now my winter coats are unpacked, proof of breath is abundant, and the recent mornings are far from their humble foggy beginnings. Awakened by a heavy downfall, I quickly relax into the pitter-patter, the warmth of my bed, the stillness of the house but then I remember it's Saturday and I can go play in the woods today! I slip into the early morning, with coffee made, and arms full of books, basket and leash in hand I head to the truck, instantly gaining the favor of our husky pup, Strider. He jumps in and we head west. When we arrive, the rain has already stopped but not long enough to avoid the big heavy drops falling from branch tips and swollen mosses. Walking through the soft green earth I spot familiar genera, *Xylaria* here, *Laccaria* there, little brown mushrooms I might not bother with, but then I see my find of the day.

Emerging from a lush bed of *Kindbergia,* the earth fan unravels herself in a rosette of chocolatey hymenium, the edges of the young cap ruffled and creamy beige with an underside smooth as fine silk that will eventually wrinkle into tight little bumps with age. Though this smooth underside might be suggestive of a *Stereum*, a quick look under a microscope will reveal an earth fan to be monomitic, therefore only consisting of clamped generative hyphae. If one is tempted to look for the brown spores,

Thelephora terrestris: life, the universe, and everything (con't)

the first noticeable feature would be their spiny ornamentation as they float around the slide like lopsided blowfish. As suggested by its Latin name, *Thelephora terrestris,* the earth fan is a ground-dwelling basidiomycete mostly found under conifers. Though I feel fortunate to see it in the woods today, I could have easily had the pleasure to see the fan shaped cap of *Thelephora* growing around the base of saplings in a tree nursey, as it is an early colonizing ectomycorrhizal associate.

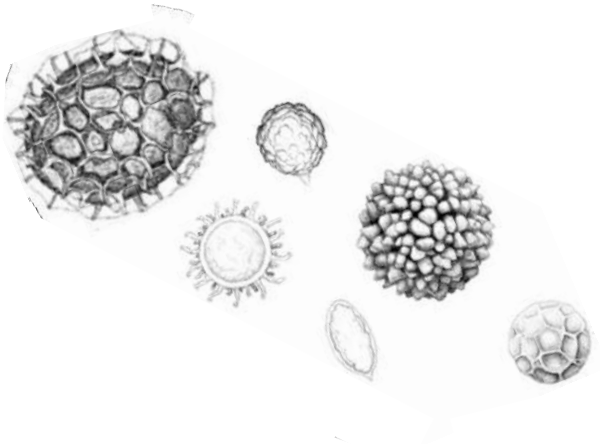
Its ecology as the most abundant and naturally-occurring ectomycorrhizal fungus in tree nurseries (Webster *et al* 2007) is partially due to its ability to withstand regular irrigation and, to a larger extent, the presence of large spore-bank deposits in the peat mosses that are commonly used in tree cultivation. Though it dominated in tree nurseries, once the trees are relocated and planted, local ectomycorrhizal fungi can quickly outcompete *Thelephora* within a matter of a few years or sometimes within months (Tweig *et al* 2007). Perhaps this earth fan is in the midst of a similar struggle just below my feet. I wonder if I were to return to this very spot after a few decades had passed, would I be joyfully tearing back the cap of a perfectly crisp *Russula* instead? As a scientist, it generally feels wrong to anthropomorphize nature but, on this day, I can't help but think of how sweet this earth fan seems to me. I imagine it nursing these tiny trees until time intervenes and the bond eventually breaks. I look up and Strider, being a good dog, and I know it's time to move on for both our sakes. I leave my thoughts to the breeze and walk deeper in the woods refreshed by the clean misty air.

With the rain fallen and promises met, I take home a basket full of treasures, the frayed edges of the earth fan gently nudging against my first Chanties of the season. By the time I get home a fire is going, the smell of brewed coffee hangs pleasant and by my first sip, the dog has already found his rightful place by the fireplace. Now, well into the fall with hair rain-soaked and toes just beginning to thaw, it is hard to imagine the warm, dry summer days of just a few months ago. On a day like this I am reminded of just how much beauty in this world starts small. This season so dear begins with one foggy morning, a towering *Pseudotsuga* could just as easily begin with *Thelephora* nestled around its baby roots. What secrets do the small things have to share of becoming? What small and beautiful parts of ourselves need only nurturing to grow? With the rain pouring on the roof again, I sink inside my thoughts, aware and grateful to have received far more than what was sought.

This contribution was initially composed as a class assignment for the Mycology course at Oregon State University. The goal of the project was for students to produce a scientifically informative work about a particular fungus and present it in an artistic format. We are happy that Bailey let us share her compelling story with you.

WANTED

Creative suggestions for newsletter topics, comments about articles, your opinions about any truffle and/or fungi related topic. Send contributions to: newsletter editor Sarah Shay at NATrufflingsociety@gmail.com



Information contained in *The Truffler* is to be used at your own risk. NATS Inc., its officers, editors, and members are not responsible for the use or misuse of information presented herein. If you are unsure of mushroom identification or safety, **please** consult an expert! In addition, attending and participating in a NATS event is entirely at your own risk. No person associated with NATS is either directly or indirectly responsible for anything that occurs during, or in transit to/from, a NATS event. Be responsible.

UNIDENTIFIED TRUFFLE?

What to do?

Visit www.natruffling.org for a printable field data card (hand-written submissions on awesome stationary certainly welcome). Please provide a description of significant characteristics of the habitat immediately surrounding the collection site, including the dominant trees and other vegetation species and slope/exposure. Also include site coordinates (GPS data, if available) and, when possible, color digital images showing a surface view and an interior section, cut top-to-bottom, through the center of the truffle.

Prior to submission, gently remove loose soil from the specimen. DO NOT scrub briskly or use a stiff brush; an intact outer skin is important for identification. Dry thoroughly using a food dehydrator OR by refrigerating samples in a loosely closed paper bag for a couple days. For faster drying, cut truffles in half to reduce moisture trapped by the outer skin.

Mail your dried specimen to:

Dr. Jim Trufflin' Trappe
USFS Forestry Sciences Lab
3200 Jefferson Way
Corvallis, OR 97331

If you want to know what your truffle turned out to be, please include your email address or a self-addressed stamped postcard!

The North American Truffling Society, Inc.

The North American Truffling Society is a non-profit organization based in Corvallis, Oregon that brings together amateurs and professionals who are interested in fungi that fruit below ground. The mission of NATS is to enhance the scientific knowledge of North American truffles and truffle-like fungi, and promote educational activities related to truffles and truffle-like fungi.

NATS is the only organization of its kind in the world devoted to gathering truffles and enhancing our knowledge about them. Primary activities include educational meetings and truffle-collection forays. NATS members collect truffles worldwide, thereby contributing to our understanding of their habitat and range, identification and classification, and edibility. NATS specialists also provide truffle identification services.

NATS offers:

- Forays (field trips) to collect truffles.
- Monthly educational meetings (autumn through spring) on varied mycological topics.
- A periodic newsletter, "The North American Truffler: Journal of the North American Truffling Society", describing recent truffle finds, program meetings and other topics.
- An annual potluck dinner.
- The excitement of participating in valuable scientific research.
- New and interesting friends.

NATS welcomes new members. As a nonprofit, membership dues are tax exempt and deductible. Dues may be paid by cash (in person) or by check (US Mail). If you pay by check, please retain your canceled check as your receipt for tax purposes. You can also pay online with a credit/debit card via Paypal at www.NATruffling.org/renew.htm.

For further information on truffles and membership, contact NATS and START TRUFFLING!
Please return completed form (with check made out to NATS) to:

THE NORTH AMERICAN TRUFFLING SOCIETY, INC.
P.O. BOX 296
CORVALLIS, OREGON 97330
www.natruffling.org

Name(s):_____Phone:_____

Address:_____

City:_____State:_____Zip:_____Country:_____
(Province) (Postal code)

Email address(es):_____

Annual membership fees: $15 first family member, $10 each additional family member in the same household. Businesses: $15. Individuals/Businesses from other countries: $20, **payable in US funds.**

Annual contribution categories: Donor: $15-$49; Contributor: $50-$499; Sustaining $500+