NJMA NEWS

THE OFFICIAL NEWSLETTER OF THE NEW JERSEY MYCOLOGICAL ASSOCIATION

Volume 40-4 July-August 2010

A REMINDER:

COLLECT RESPONSIBLY!

Remember, we are guests in the woods. Often we see a mushroom in a less-than-ideal place.

Do not trample vegetation or disturb animal nesting areas when going for that mushroom!

CALENDAR OF UPCOMING EVENTS

Saturday, July 10 **10:00 am**	**FORAY: MEADOW WOODS PARK, Mendham** *Leader:* Mike Rubin
Saturday, July 17 **3:00 pm**	**NJMA CULINARY GROUP EVENT: A MOSTLY ARGENTINE GRILL, Somerset** *Coordinators:* Bob Hosh (***gombasz@comcast.net***) and Jim Richards (***jimrich35@mac.com***). (Please note that this event is fully booked- If you wish to be placed on the wait list please contact Jim or Bob.)
Sunday, July 18 **10:00 am**	**FORAY: SCHIFF NATURE PRESERVE, Mendham** *Leader:* Alex Adams
July 23 - 25	**NJMA VICTOR GAMBINO FORAY** **King's Gap Environmental Center, Carlisle, PA** Overnight accommodations are fully booked. See issue 40-3.
Sunday, August 1 **10:00 am**	**FORAY: STEPHENS STATE PARK** *Leader:* Randy Hemminghaus *****see important note below!***
Sunday, August 8 **10:00 am**	**FORAY: MANASQUAN RESERVOIR ENVIRONMENTAL CENTER** *Leader:* Glenn Boyd
August 12 - 15	**NAMA ANNUAL FORAY Winter Park, Colorado** Information can be found on the NAMA website, ***www.namyco.org***
Sunday, August 15 **10:00 am**	**FORAY: HOFFMAN PARK** *Leader:* Bob Hosh
Sunday, August 22 **10:00 am**	**FORAY: WAYWAYANDA STATE PARK** *Leader:* Nina Burghardt *****see important note below!***
Sunday, August 29 **10:00 am**	**FORAY: RANCOCAS AUDUBON NATURE CENTER** *Leader:* Patrick Bernardo
Sunday, September 12 **10:00 am**	**FORAY: GRETE TURCHICK FORAY & PICNIC, STOKES STATE FOREST,** *Leader: Randy Hemminghaus* *****see important note below!***
Sunday, September 19 **10:00 am**	**FUNGUS FEST, Frelinghuysen Arboretum, Morristown** *Chairpersons:* Nina Burghardt and Terri Layton
September 23 -26	**NEMF FORAY** – Soyuzivka Ukranian Cultural Heritage Center, Kerhonkson, NY.

** IMPORTANT NOTE! - NJMA FORAYS ON STATE LANDS

We have learned from the New Jersey Division of Parks & Forestry that we must have a permit to collect mushrooms on state land, and that permit restricts us to the scientific study of mushrooms. We have been granted permission to foray with certain restrictions, and we are working with the State to iron out a few things. Once we have a better idea of where things stand, we'll post full details on the NJMA website (on the Forays page). Please note that our foray dates and locations in state parks and forests may be subject to change. Please check our website or Events Hotline (908-362-7109) prior to attending these forays. DO NOT call club officers for this information.

PRESIDENT'S MESSAGE

Summer is upon us! It's time to look forward to another bountiful season ahead.

I am proud to say that NJMA is known for the strength of our taxonomic skills up and down the east coast. You only have to go to NEMF to see that our group takes a lead role in taxonomy. Once upon a time when NJMA started, almost forty years ago, no one knew how to identify mushrooms; then certain members (you know who you are!) took it upon themselves to learn how, with much persistence and perseverance, to identify fungi.

So what's the problem? Well, some of these taxonomists are gone (left town or departed), going (leaving town) or will be going someday (hopefully not too soon, and preferably much, much later). I am not trying to be morbid or disrespectful, but we need to start thinking about what we need to do so we can continue to be the best taxonomy club for many more decades to come.

I can't think of a better way to express thanks to those who dedicated many years and much energy to enrich the field of mycology than to carry on the tradition.

Even though you may have originally joined NJMA to fill your tummy with yummies, foraying can be much more than dividing the fungal kingdom into two piles – to eat or not to eat. I kid you not, you really can get pleasure from knowing what something is called.

I admit that, at first, I found those NJMA members who embraced taxonomy "odd", but somewhere along the way I found them to be interesting and intelligent people who never seem to lose the spark in their eyes, and some of them I have come to call good friends.

Our aim is to teach members to become proficient in taxonomy. We will utilize various ways to reach our goals:

- Have a minimum of two taxonomists at each foray and hold taxonomy lessons at the end of the forays. This may be difficult at certain locations due to a lack of an adequate facility, but we will do our best.
- Meet on designated Mondays at Bob Hosh's home in Somerset, NJ to do macro/microscopic work. His residence is also home to the NJMA library.
- Offer taxonomy classes during the winter working with dried specimens at the Frelinghuysen Arboretum.

We believe that what we are doing is important not only for our club, but also for the scientific community of New Jersey. We are the only organization in the state which maintains a list of fungi. Please join our efforts to continue to help the mycological community. Suggestions are welcome and we would love to hear from you.

Learning is a lifelong endeavor. Learning can be fun, and you may discover your hidden potential along the way.

–Terri Layton

In memorium

SANG PARK

(1932 - 2010)

Former NJMA Vice President

PHOTO BY SUSAN HOPKINS

We extend our deepest condolences to the family and friends of Sang Park, a dedicated member and dear friend of NJMA.

"So sorry to hear about the death of our friend, Sang Park…Sang was always pleasant to work with. We could count on him to to take his lab work seriously as he turned to on a few Myxos, eventually coming up with names in that difficult group. I admired his patient approach to mycology and his determination to get things right!"

– Gene Yetter

...and from Debbie Park (Sang's wife):

"Being a member of NJMA, Sang's life was enriched in many ways. He enjoyed going to forays, collecting and identifying specimens. He was always curious about his surroundings. But most of all, I think He enjoyed the fellowship with members. I am so grateful that he had the privilege of meeting so many good people through the NJMA."

NJMA CULINARY GROUP: MOSTLY ARGENTINE GRILL

by Jim Richards

The NJMA Culinary Group is planning a Mostly Argentine Grill on Saturday, July 17 at 3:00 pm at Bob Hosh's home in Somerset. The menu will include Grilled Steak *(Churasco)* with *Chimichurri*, Peached Pork, Patagonian Potato *Galettes*, *Escabeche de Gallina* (cold pickled chicken), and several different *Ceviches*: fresh smoked Salmon, Grilled Papaya, and a Trio of Mushrooms *Escabeche*. Desserts will feature *Alfajores*, Rice Pudding in Almond Baskets, Papaya and Cheese Cheese Terrines, and more. Plus breads, beverages, etc.

The meal is fully booked at this time, but you can add your name to the wait list by contacting Jim Richards or Bob Hosh (see front page for contact information).

TOXICOLOGY REMINDERS: DRIED MUSHROOMS ARE NOT COOKED!

from MushRumors*, newsletter of the Oregon Mycological Society, #49-3*

At the March meeting, Jan Lindgren, OMS Toxicology Chairperson, reported on two interesting items relating to morels.

A full-page photo in the April issue of *Sunset* magazine featured a tasty-looking asparagus and morel quiche. The recipe instructs the cook to "soak mushrooms in a small bowl with 1 cup of water until softened, 15-20 minutes, swishing them around every so often. Gently squeeze out liquid. Cut in half lengthwise if large. Save liquid for another use." No problem as yet – these are standard steps for preparing dried mushrooms, although it would have been better to specify soaking in "hot water." However, the major problem comes later in the recipe. The recipe does not include instructions for cooking the soaked mushrooms. The morels are merely arranged on the top of the quiche before it is popped in the oven for baking. Yes, the morels will cook some on the top of the quiche, but that may not be enough to remove all the toxins. The rule is: cook all reconstituted dried mushrooms as thoroughly as you would cook a fresh mushroom.

Link to the recipe on the web at:

http://find.myrecipes.com/recipes/recipefinder.dyn?action=displayRecipe&recipe_id=1973701

(but only if you promise to cook those morels thoroughly!)

Related article: "Cerebellar effects after consumption of edible morels (Morchella conica, Morchella esculenta)," *Clinical Toxicology* (2008) 46, 259-260. On the web at:

http://www.dipualba.es/micologica/curiosidades/Morchellas_toxicidad.pdf

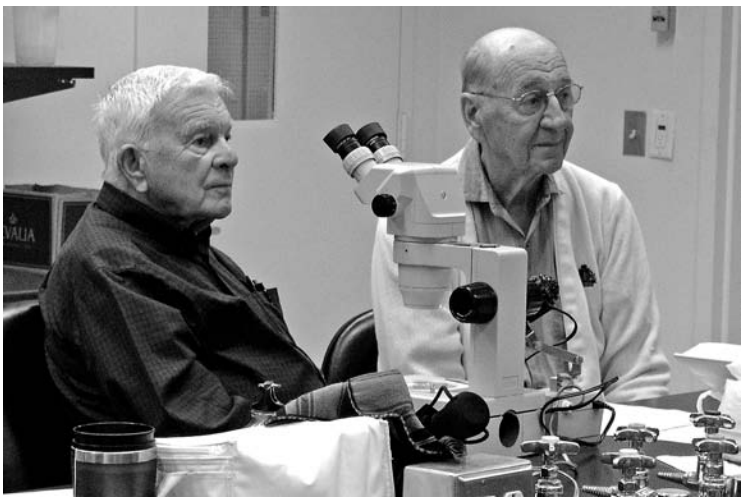
EXPANDED ARTS AND CRAFTS AT FUNGUS FEST

by Jim Richards

With your cooperation, we hope to greatly increase the display of mushroom-related arts and crafts at this year's edition of Fungus Fest. There are many NJMA members who create beautiful objects depicting mushrooms, (photographs, drawings, paintings, sculpture, etc.) or who incorporate fungi as part of their art (as dyes for fiber and fabric, paper, jewelry, collages, and so on.) We feel that many of the people who attend Fungus Fest would like to take home a reminder of the event. And what could be better than some NJMA-related treasure? We know that people are always asking the fiber people (and others) if their work is for sale. The answer is usually "no!", but we would love to be able to change that with your help!

If you are a creator of any of the above-mentioned items (or others) please contact Jim Richards as soon as possible ar ***njmaeditor@gmail.com*** or 908-852-1674 to make sure that we save space for your pieces. We are also asking that the artists make a contribution of a portion of their sales to NJMA to help defray the costs of staging Fungus Fest.

The group at NJMA's May 29 Lichen Workshop



Dr. Gene Varney and John Horvath at the lichen workshop

FUNGI ECOLOGY: HOW ECOSYSTEMS WORK

by Kit Marx, Puget Sound Mycological Society

It occurred to me that, before digging into the wonderful world of fungi ecology, we should first talk about what ecology is, and a little about how ecosystems function.

(Note: I make an arbitrary distinction between ecology and environmental issues. Ecology concerns natural environments without considering human influences. Environmental issues concern those human influences. There are essentially no environments we have not affected.)

Ecology is the study of how organisms relate to their surroundings, both biotic and nonbiotic (abiotic). The word ecology is derived from *eco-* (Greek: dwelling place) and *-logy* (G: study of).

An ecosystem is supposedly a distinct collection of interacting organisms and physical (abiotic) conditions. No such thing exists naturally. Ecosystems contain internal subgroupings and overlap with surrounding ecosystems. However, in order to focus, we call such relatively concentrated groupings ecosystems.

If you were a conscious fungus (no slight intended), biotic influences that might concern you would include having the right species of tree nearby so you could bond to its roots to obtain food and whether you can disperse your offspring (spores) before a deer eats your sex organs (mushrooms). Abiotic concerns would include whether it's moist enough and cool enough to pop those reproductive organs above ground.

In an ecosystem, what eats what is the trophic structure. Trophic comes from the Greek *troph* (= nourishment). For our purposes, there are two types of organisms: those that make their own food (producers) and those that obtain it other organisms (consumers).

- Plants generate biomass from raw materials. Thus, they are the first type of organism, producers, also called autotrophs (from the Greek *auto (*= self). Plants are an ecosystem's first trophic level.

- Animals have to get their nourishment from other organisms. Thus, they are the second type of organism: consumers, also called heterotrophs (from the Greek *hetero* = other). Depending on what they eat, animals are divided into herbivores (Latin/*herb* = green plant, L/*vor* = devour) and carnivores (L/*carn* = flesh).

  Herbivores make up Trophic Level 2. First level carnivores make up Trophic Level 3, and so on up to the top predators, usually no higher than Trophic Level 5. An eagle could be a top predator, Carnivore Level 3, Consumer Level 4, Trophic Level 5. (Do I hear a HUH?! I hope not; but you can reach me via ***kit@kit-the-naturalist.com***)

Processors are a separate functional group within ecosystems, and have their own trophic structure. They fall into two groups.

- Detritivores (e.g., earthworms and mites): break down small pieces of organic material into organic particles.

- Decomposers (mostly fungi and bacteria): turn those organic particles into raw materials which plants can absorb.

Fungi often decompose rocks and absorb the minerals; but, since they are unable to photosynthesize, they cannot make their own food. Having to obtain nourishment from other organisms, they also are heterotrophs. It is difficult to place fungi at a trophic level. They can't make their own food, so, they have to get it from others.

- From mutual symbioses with living plants = mycorrhizae.
- From dead organic material = decomposers or saprobes.
- From live organisms.
  - Parasitic fungi attack plants, animals – and other fungi.
  - Carnivorous fungi capture invertebrates.
  - Pathogenic fungi infect plants and animals.

So what do bacteria, insects, slugs, rodents, deer, humans (and so many other creatures) have in common? We are all fungus eaters (mycophagists, if you're partial to Greek, or fungivores, if you prefer Latin). Gotta go, I'm getting hungry.

OK, it's not a mushroom, but...

NJMA has often been accused of throwing an event just for the food…and one of the favorites at our annual Wild Foods Foray and Picnic is Bob Hosh's Serviceberry Cobbler.

DERIVATION OF FUNGUS NAMES

from the Puget Sound Mycological Society, May 2010

Agaric: From Latin "Agaricum" and the Greek "Agarikon," called after Agaria, a town in Sarmatia where it grew abundantly.

Fungus: From the Latin "fungus," a cognate or derivative of the Greek "sphoggos" (sponge). The Romans used the term for certain varieties only, not for fungi as a whole.

Morel: From a Teutonic word represented by Old High German "morhila," from which the modern German "morchel" is derived.

Mushroom: Various hypotheses as to its derivation: (1) From French "mousscron," generally considered to be from "mousse" (moss) because the species grows in moss or short grass, or is soft. (2) From a combination of the Welsh/Old British "maes" (a field) and "rhum" (a thing that bulges out). (3) From the French "mousche" (from the Latin "musca," a fly).

Puffball: A corruption of "puck" or "pouk" ball; "puck" is of Celtic origin and means elf, hobgoblin, or demon.

Toadstool: Various hypotheses: (1) From the Anglo-Saxon "toad" for the animal (toads were regarded as poisonous) and "stool" from its shape. (2) From the Icelandic "tad" (dung). This is Webster's derivation. (3) From the Norse "tutna" (to swell or be blown up). (4) From Saxon "tod," meaning bunch, cluster, or bush. Stool from its shape.

It's a treasure tree! *Those who attended the NJMA Lichen Workshop were able to find specimens right outside the Foran Hall laboratory on class day.*

TAKE A VIDEO JOURNEY TO TELLURIDE

by Kelleigh Stewart, from MushRumors*, newsletter of the Oregon Mycological Society, #49-3*

Good news! Counter-culture documentarian Ron Mann has, in his own words, "joined the mushroom cult. I've drank the Kool-Aid." [sic] And now he's out to spread the spores. In his new movie, *Know Your Mushrooms*, Mann introduces non-fungophiles (i.e., soon-to-be fungophiles) to the fungo-sphere by exploring some common uses, traditions, fringe-theories, and misconceptions regarding mushrooms, including hunting, cooking, psychotropics, mycoremediation, and truffles. And who better to take us on this journey than the "Indiana Jones of Mushrooms," Larry Evans, and Audubon author Gary Lincoff. The scene? The Rocky Mountain Telluride Mushroom Festival of Colorado.

Behind the scenes, the story actually began when fungophile director Jim Jarmusch (*Dead Man* and *Coffee and Cigarettes*) was preparing a lecture for the Telluride Mushroom Festival. Jarmusch approached Mann about riffling through the stock footage of drugs in movies which Mann had compiled for an earlier documentary. It was during their conversations that Mann began learning of the subculture surrounding mushrooms, topic by topic. Although Mann hadn't heard of the festival, his interest was sparked and he decided to see what the "hoo-ha" was all about. That year at the festival, he met Larry Evans and Gary Lincoff.

Author's note: After having spent time foraging with Larry Evans, I can definitely assert that he really is just as zany, witty, and yet sensible as portrayed on film! It wouldn't surprise me if Mann decided to make this movie after having met Larry.

In the film, Mann documents mycological subculture and science as it was revealed to him through the comical characters at the Telluride Mushroom Festival…and therein lies my only complaint. Gary and Larry aside, the film seems to reinforce the stereotype of mycophiles as time-warped, fringe-theory flower children. In fact, we are naturalists, hikers, scientists, travelers, cooks, dyers, and time-warped, fringe-theory flower children!

Whether you're a new member or three-decades-deep in a mycological society, this film will keep you amused with hilarious pop-quizzes, campy clips from *Attack of the Mushroom People*, and original music from The Flaming Lips. I highly recommend it!

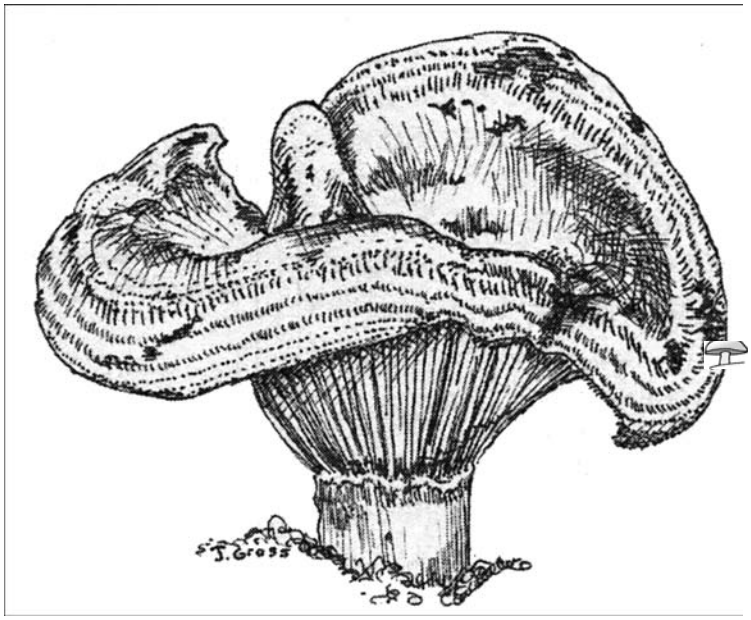
OMS Editor's note: The Telluride Mushroom Festival bills itself as the "nation's oldest mycological conference exploring all things fungal." Learn more about the 2010 festival at ***http://www.tellurideinstitute.org/page_1***. *Know Your Mushrooms* is available from Netflix.

MUSHROOMS...A SECOND LOOK

Learning to identify mushrooms and to retain what you learn can be a challenge. As you work to identify a specimen, one technique that may be helpful is to sketch the features that you see. Drawing helps you to focus on individual characteristics that you may overlook when you first look at a mushroom. Even if you feel that your artistic talents are limited (or maybe just undeveloped), focusing on and drawing the features will help you to see and to remember more. This article by Joyce Gross of the Western Pennsylvania Mycological Society encourages mycophiles to look beyond the pot and explore how mushrooms can release the artist hidden within.

Thank you to Maggie Rogers for providing Joyce's article. (Reprinted from MushRumors*, newsletter of the Oregon Mycological Society, #49-3)*

It's inevitable. "Can you eat it?" they ask. "No," is the answer. Then it happens. The little spark in their eye is extinguished and off they go to find a more worthy specimen. That's a shame because there is a lot more to experience from many mushrooms than just eating them. Some of the most overlooked and seemingly lowly little ones can be the starting point for a lot of craft projects or art. In our club's workshop meetings, we have used some of these mushrooms to make everything from paper to jewelry. Turkey Tail *(Trametes versicolor)* and False Turkey Tail *(Stereum ostrea)* mushrooms are two useful and very abundant examples. Artist Conks *(Ganoderma applanatum)* are probably the most recognized choice for displaying images and have been used for centuries to provide the basis for everything from crude scratchings to elaborately detailed pictures. Some mushrooms are gathered for their ability to render beautiful colors used in the process of dying fibers as a more natural altemative to chemical dyes. In fact, most of the mushrooms that we've used are not of the edible variety.



***Lactarius** sp. sketch by Joyce Gross*

I have found from my own experience of trying to learn the names of mushrooms that my artistic appreciation for them has grown immensely. When you pick a mushroom to identify it, you have to really look at its features. Look at the cap. Do you see zones of color? Look at the stalk. Is it striped or is there a certain pattern? Some of the above mentioned little polypores are absolutely beautiful when viewed from behind the lens of a loupe or magnifying glass.

Photographing mushrooms is an excellent way to learn more. You have a photo to look at and refer to the next time you think you have encountered the same mushroom. While you're at it, how about honing your photography skills and you will end up with a perfect subject to perhaps frame and display.

Another way to not only learn the mushroom, but appreciate its beauty is to sketch them. At the 2005 NEMF foray, I met a woman named Debra Veiss (aka Amanita Rita). She was sitting off in a corner by herself drawing individual pictures of specimens that were East coast varieties unfamiliar to her (she is from the West coast). At her disposal were a small sketch tablet, some pencils and colored pencils. She was putting down on paper the main features, colors, etc. of each mushroom so that when she got home the details would be easier to recall. This is an excellent way to emphasize the things that you feel will help you identify the mushroom the next time you see it. The features that help you may be different than features that someone else requires. We all visually record things in our own way. A lot of times an artist can capture minute details that perhaps don't quite translate well in a photo. How many times have you gotten that picture printed only to find that the developing process has somehow converted that delicate lilac color to a ruddy pink?

In my opinion, mushrooms are some of the most fascinating things in nature to draw because they can be so different even within the same species. They are truly products of their environment. A dry mushroom will appear different from a wet mushroom, thus changing the colors perceived. Some specimens will be affected by nearby objects, like sticks or grass, which have been incorporated into the body of the mushroom. Some will be forced into an unnatural pose by an unyielding obstacle. Embrace these "by chance" occurrences and your drawings will be enhanced with even more artistic appeal.

Here in our world of all things fungi, we know the appeal of the fleshy fruiting bodies that peek their heads above the ground. The vivid colors and ephemeral qualities of mushrooms entice us to gaze upon their upturned caps and squatty stems, thus drawing us into their world of magical existence. If you've never taken the time to appreciate the beauty that lies just beneath the grass or hidden within the moist recesses of the forest, I invite you to pick up a camera, sketch pad, or loupe and challenge yourself to take another look at a mushroom with not the eye of a hungry forager but the eye of one who seeks all things that are beautiful.

WHO'S IN A NAME?
Cyathus bulleri

by John Dawson (twentieth in a series)

In his book *Mr. Bloomfield's Orchard,* Nicholas Money calls Arthur Henry Reginald Buller "the greatest experimental mycologist in history". Yet oddly, according to *Index Fungorum*, the only currently valid specific epithet commemorating Buller is that of *Cyathus bulleri* Brodie[1], a bird's nest fungus found in Hawaii, Mexico and the West Indies. His name is more prominently memorialized in the mycological terms "Buller phenomenon" and "Buller's drop", the former referring to the process in Hymenomycetes whereby a haploid mycelium may be diploidized by a dikaryotic diploid mycelium, and the latter to the tiny drop of liquid formed on the hylar appendage of ballistospores, which, through its surface tension, causes them to be shot forcibly into the air.

Arthur Henry Reginald Buller

Buller was born August 19, 1874 in Birmingham, England, and graduated from the University of London with a Bachelor of Science degree in 1896. He went on to pursue graduate studies at Leipzig with the plant physiologist Wilhelm Pfeffer and at Munich with the forest pathologist H.J.A.R. Hartig (after whom the Hartig net of ectomycorrhizal fungi is named). After receiving his Ph.D. at Leipzig in 1899, Buller spent the years 1900–1901 at the International Marine Biological Research Station in Naples, before returning to the University of Birmingham as demonstrator and lecturer in botany. In 1904, he left Britain to become the first professor of botany at the University of Manitoba, where he remained until his retirement in 1936. His duties at Winnipeg nevertheless allowed him to return to Birmingham each summer in order to pursue his research there in the laboratories, libraries and surrounding countryside. In the course of his career, Buller thus crossed the Atlantic by ship 65 times(!) — until the outbreak of World War II left him stranded in New York following his attendance at the 1939 International Congress of Microbiology. That circumstance caused him to return to Winnipeg, where he continued his research until his death from a brain tumor on July 3, 1944.

Buller was a lifelong bachelor who was wholeheartedly devoted to his research. Though eccentric in many respects, he was beloved by his students and played an important role in the development and rise to prominence of the department of botany at the University of Manitoba, as well as the founding there of the Rust Research Laboratory of the Dominion of Canada Department of Agriculture.

In 1909, Buller published the first of seven volumes entitled *Researches on Fungi*, which were to comprise his *magnum opus*. Because of the large amount of text and the number of illustrations those tomes contained, commercial publishers were unwilling to publish them unabridged, so Buller had the first six volumes published privately at his own expense. The result was "an eminently readable, profusely and beautifully illustrated series of volumes" that "will long remain a primary reference for [those] ... concerned with ... spore production and liberation in the fungi, [with] social organization within that group," and especially with sexuality in the rust fungi, to the study of which volume VII of the *Researches* (published posthumously in 1950 by the Royal Society of Canada) made a "monumental" contribution.[2] Unfor-tunately, the small size and short duration of the private press runs greatly limited the distribution of the first six volumes, which were difficult to obtain, even in libraries, prior to their reprinting in 1959.

In addition to the *Researches on Fungi*, Buller published many scientific papers in major journals, and also a few poems. Indeed, his best known work among the general public is the limerick *Relativity*, which appeared anonymously in the British humor magazine *Punch* in 1923:

> There was a young lady named Bright,
> Whose speed was much faster than light;
> She set out one day
> In a relative way
> And returned on the previous night.

Buller was also an accomplished billiards player and a lover of the works of Milton and Shakespeare. He has been described as "epitomizing the popular concept of an English gentleman",[3] and was a very popular and dynamic lecturer.

Buller was a member of many scientific societies and

[1] There are, however, two genera of jelly fungi named in his honor: *Bulleromyces*, and its anamorphic counterpart, *Bullera*.

[2] Quotations here are taken from the entry on Buller by D.L. Bailey in volume 2 of the *Dictionary of Scientific Biography*. That, together with Money's book and the tribute to Buller by R.H. Estey ("A.H.R. Buller: Pioneer leader in plant pathology") published in the *Annual Review of Phytopathology* (vol. 24 [1986], pp. 17?21), are the principal sources upon which the present sketch is based. See also W.F. Hanna, C.W. Lowe and E.C. Stakman, "Arthur Henry Reginald Buller 1874?1944", *Phytopathology*, vol. 35 (1945), pp. 577-584.

[3] Estey, *op.cit.*, p. 20.

the recipient of many awards and honorary degrees. That recognition, however, made him "a whale in a little pond",[4] which no doubt engendered some envy and jealousy among his peers. Buller was also outspoken in his advocacy of certain policies within the University of Manitoba (concerning, e.g., the location of various buildings), behavior that brought him into conflict with University authorities early on. Those were apparently the reasons that, late in his career, he was shabbily treated by the University to which he had contributed so much. He retired in 1936 when his department was relocated to the third and fourth floors of a building without an elevator, on a site he had opposed, while construction of a greenhouse was postponed. He was given the title of Professor Emeritus, but much to his shock, he was not allowed to retain his office. Instead, "his leather furniture was dumped outside the building", and "the faculty club refused to accept the gift of his treasured billiard table."[5] Consequently, Buller bequeathed his magnificent and valuable collection of books not to the University, but to the Rust Research Laboratory (where his ashes were also later deposited), and gave his papers to the Royal Botanic Gardens at Kew, England. Only belatedly, in 1963, did the University of Manitoba finally rename the building in which he had worked the "Buller Biological Laboratories".

[4] Money, *op.cit.*, p. 104.
[5] *Ibid.*

Out standing in the field: Carol Titus, Marcus Morreale, Bob Hosh, and Bob Peabody at the 2010 Wild Foods Foray

Debbie Naha, a naturalist with the Morris County Park Commission, led our 2010 Wild Foods Foray at Deer Path Park

LIGHTNING REALLY DOES MAKE MUSHROOMS MULTIPLY

by Lin Edwards
www.physorg.com/news190356559.html *(April 13, 2010)*

A four-year study carried out at Iwate University in northern Japan on ten species of mushrooms (so far) has shown that for eight of the ten species a bolt of lightning-strength electricity could double the crop yield. The best improvements were found in the popular nameko and shiitake mushrooms. The experiments were carried out by seeding logs with mushroom spores and then applying high-voltage electricity pulses to the logs.

A direct hit by natural lightning would burn and kill mushrooms with up to a billion volts of electricity, so the rcsearchers, led by Associate Professor of Engineering Koichi Takaki, thought the increase in numbers of mushrooms, if it occurred at all, could be caused by exposure to a weakened charge that would travel through the soil after a nearby lightning strike. They therefore used less damaging pulses of electricity.

The experiments showed mushrooms react best when exposed to a ten-millionth of a second burst of electricity at 50 – 100,000 volts. Under the best conditions, the nameko yield was 80% greater than the untreated control crop, while the shiitake crop yield doubled. Takaki said the mushrooms initially decrease the enzyme and protein secretions from the hyphae (tiny filaments that spread under the surface, acting like roots and giving rise to the fruiting bodies such as mushrooms), but then suddenly increase production.

The reason for the reaction is unknown and the subject of further investigations. One of the researchers, Yuichi Sakamoto of the Iwate Biotechnology Research Center, said it is possible the reaction is a response to danger, and the mushrooms react by giving themselves a reproductive boost and increase the number of fruiting bodies so their chance of survival is maximized. Takaki and Sakamoto think the equipment they used could eventually be adapted for use by commercial mushroom growers.

The effects of artificial lightning are also being studied by Takaki's team on daikon radishes, and by other researchers on beans, rapeseed plants, and some lily varieties. So far the early results look promising.

THE NJMA MEMBERSHIP LIST IS NOT INCLUDED IN THE ONLINE EDITION OF THE NEWSLETTER

We once again participated in the Union County BioBlitz. Several members were on hand to assist with collecting, sorting, and identifying the species found. Our efforts become part of the permanent record of life species found in different parts of the county.

NJMA NEWS

c/o Jim Richards
211 Washington Street
Hackettstown, New Jersey 07840

FIRST CLASS MAIL

NJMA is a non-profit organization whose aims are to provide a means for sharing ideas, experiences, knowledge, and common interests regarding fungi, and to furnish mycological information and educational materials to those who wish to increase their knowledge about mushrooms.

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Mycena leaiana
The Orange Mycena

PHOTO BY JIM BARG

This is one of those mushrooms which you'll find growing on wood in the summer and is one of the easiest *Mycenas* to identify. It is usually bright orange, grows in clusters (caespitose), and the gills are marginate, meaning that their orange coloration is largely on the edges of the gills. A very close look with a hand lens reveals this beautiful characteristic. It is not considered to be edible, but it surely is a delicious orange color!