



SporePrint Newsletter of the Alberta Mycological Society

www.wildmushrooms.ws 2012 No.1

Soil Remediation Using Mushrooms to Degrade Polynuclear Aromatic Hydrocarbons

by: Aimée Gabriel

Natural decomposers are a very big and important part of our undisturbed forests. Their daily operations are not quantified in financial assessments, thus their actual value to the ecosystem may be a good topic to further explore. Each mushroom species has unique chemical properties; some research has been completed to better understand how mushrooms degrade polynuclear aromatic hydrocarbons (PAHs): fluorene, phenanthrene, anthracene, fluoranthene, pyrenen, chrysene, and benzo[a]anthracene¹. The research reviewed for this article could be valuable for in-situ applications throughout Alberta's industrial reclamation sector.

The chemical structure of polynuclear aromatic hydrocarbon are variations of carbon and hydrogen atoms, some of the more common PAH's are listed in Table 1. PAHs consist of two or more fused benzene rings. The benzene organic chemical compound is composed of



six (6) carbon atoms in a ring with one (1) hydrogen atom attached to each carbon atom (Figure 1). They are formed when organic matter is burnt. The type of PAH is determined by the heat to which the matter is subjected to². PAHs are ubiquitous in the environment³ but are found in high concentrations on many industrial sites. In high concentrations they cause concern as environmental pollutants⁴. To

manage the industrial hazardous material, the bioremediation method of mycoremediation has been studied by several science institutes around the world.

H C C C H

Figure 1: Benzene molecule.

The science of using fungus as a micro-organism in bioremediation is known as mycoremediation and has been known since 1985 when the white-rot fungus Phanerochaete chrysosporium was found to be able to degrade a number of environmental pollutants⁵. The white-rot fungi produces an extracellular lignin-degrading enzyme called ligninase⁶.

Species white-rot fungi, such as

Table 1: Common polynuclear aromatic hydrocargons (PAH)

PAH:Number of Benzene Rings				
Acenaphthene: 2	Coronene: 7			
Acenaphthylene: 2	Dibenz[ah]anthracene: 5			
Anthracene: 3	Fluoranthene: 3			
Benz[a]anthracene: 4	Fluorene: 2			
Benzo[a]pyrene: 5	Indeno[1,2,3,cd]pyrene: 5			
Benzo[b]fluoranthene: 4	Phenanthrene: 3			
Benzo[ghi]perylene: 6	Pyrene: 4			
Benzo[k]fluoranthene: 4	Naphthalene: 2			
Chrysene: 4	-			



Phanerochaete chrysosporium, Coriolus versicolo, Pleurotus ostreatus, Bjerkandera adusta, and Irpex lacteus are able to oxidise xenobiotic organic pollutants⁷; however out of many hundreds of mushrooms only a few have been studied in detail. Because of the non-specific nature of the lignin oxidation system of the white-rot fungi they could be used to enhance the aerobic biodegradation of contaminated soil. Nonetheless, their ability to survive and grow in soil is unnatural.

The initial phase of bioremediation involves selecting an organism that produces the enzyme capable of incorporating oxygen into the benzene ring structure. Organisms capable of achieving this quest include bacteria, fungi, and algae⁸. This concept shares the principles of aerobic biodegradation used for PAH contaminated soil.

To ensure the survival and growth of mushrooms in soil, methods of using wheat straw as a substrate has been developed[°]. A study completed by M. Bhatt, T. Cajthami, and V. Sasek entitled *Mycoremediation of PAH-Contaminated Soil* provides details on an in-situ application of fungus spore inoculated straw as a substrate to treat two PAH contaminated industrial soils. In this application two fungus strains were studied: *Irpex lacteus* and *Pleurotus ostreatus*.

"Respective data for removal of PAH in the two industrial soils by I. lacteus were: Fluorene (41 & 67%), phenanthrene (20 & 56%), anthracene (29 & 49%), fluoranthene (29 & 57%), pyrene (24 & 42%), chrysene (16 & 32%), and benxo[a]anthracene (13 & 20%). In the same two industrial soils P. ostreatus degraded the PAH with respective removal figures of fluorene (26 & 35%), phenanthrene (0 & 20%), anthracene (19 & 53%), fluoranthene (29 & 31%), pyrene (22 & 42%), chrysene (0 & 42%), and benxo[a]anthracene (0 & 13%)." ¹⁰

This bioremediation method has been successful with soil containing PAHs with fewer than four aromatic rings¹¹, and no heavy metals especially cadmium and mercury¹². Please keep in mind that metals can bioaccumulate in mushrooms¹³. It would not be suggested to consume any mushrooms grown in potentially contaminated soil.

Mycoremediation is not a "Cure-All" remedy; however, it does present an additional option to current methods. It would be interesting to learn more about mycoremediation in Alberta to better understand if it is a feasible option for the industrial sector.

9. M. Bhatt, T. Cajthami, V. Saskek. (2002). Mycoremediation of PAH Contaminated Soil. Institute of Microbiology, Academy of Sciences of the Czech Republic. 142 20 Prague, Czechia. Folia Microbiolo. 47 (3): 225-258 (2002).

10. M. Bhatt, T. Cajthami, V. Saskek. (2002). Mycoremediation of PAH Contaminated Soil. Institute of Microbiology, Academy of Sciences of the Czech Republic. 142 20 Prague, Czechia. Folia Microbiolo. 47 (3): 225-258 (2002).

11. S.C. Wilson, K.C. Jones. (1993). Bioremediation of Soil Contaminated with Polynuclear Aromatic Hydrocarbons (PAHs) A Review. Institute of Environmental and Biological Sciences. Lancaster University. Lancaster, LA1 4YQ, UK. Elsevier Science Publishers Ltd. England. Environmental Pollution 81 (1993): 229-249.

12. P. Baldrian, J. Cabriel. (2003). Lignocellulose degradation by Pleurotus astreatus in the presence of cadmium, Laboratory of Biochemistry of the Wood-rooting Fungi, Institute of Microbiology AS CR, Vindeoska 1083, 14200 Prague 4, Czech Republic, Elsevier Sciences Publishers Ltd. FEMS Micrebiology Letters 20 (2003): 235-240.

13. B.J. Meyer (2009) Aridondack Mycorrhizal and Saprobic Macromycetes: Diversity and Metallic Element Accumulation. State University of New York. UMI Dissertation Publishing.



From the Editor

Dear readers,

I would also like to extend a special thank you to Tyler Pell for noticing the coolest looking false morels during a environmental impact assessment, for he introduced me to the Alberta Mycological Society.

Last summer I joined you in two forays. The first one at Boundary Ranch in Kananaskis County on June 11, 2011 and the other at Ram River Falls during the July long weekend. Each time the group was very welcoming, to me, a potential new member. The group was gracious in offering their knowledge, wisdom, good stories, and cuisine. My goal last year was to find a morel mushroom. So I went to the learning session prior to my first foray to figure out the tools I would need. Mr. Martin Osis gave a very informative and well humored talk to prepare us for the journey ahead. That following weekend we were off looking for morels. The group found a few that day, but I still had some searching to do. The next foray a was a little more prepared. We were out at Ram River Fall searching as a group, and people around me were finding those morels. What was I doing wrong? Members of AMS were very kind, and showed me to one. Not by pointing and telling me, but by helping me to see that proud standing mushroom right in front of me. I knew then - these are good people. Please share your mushroom harvesting experiences. Send to:

newslettersubmission@wildmushrooms.ws Subject: Newsletter Submission



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^{1.} M. Bhatt, T. Cajtami, V. Sadkek. (20020). Mycoremediation of PAH-Contaminated Soil. Institute of Mycrobiology, Academy of Sciences of the Czech Republic. 142 20 Prague, Czechia. Folia Microbiol. 47 (3): 225-258 (2002).

^{2.} S.C. Wilson, K.C. Jones. (1993). Bioremediation of Soil Contaminated with Polynuclear Aromatic Hydrocarbons (PAHs). A Review Institute of Environmental and Bilogical Sciences. Lancaster University. Lancaster, La1 4YQ. UK. Elsevier Science Publishers Ltd. England. Environmental Pollution 81 (1993): 229-249.

^{3.} M. Blumer (1976). Polycyclic aromatic compounds in nature, Scientific American 234: 34-45.

^{4.} World Health Organisation. (1993) Evaluation of the carcinogenic risk of chemicals to humans-polycyclic aromatic compounds. Part 1: Chemical, environmental and experimental data. Volume 32. International Agency for Research on Cancer, Lyons, France. 5. J.A. Bumpus, M. Tien, D. Wright, S.D. Aust. (1985). Oxidation of persistent environmental pollutants by a white-rot fungus. Science 228 (1985): 1434-1436.

^{6.} S.C. Wilson, K.C. Jones (1993). Bioremediation of Soil Contaminated with Polynuclear Aromatic Hydrocarbons (PAHs) A Review. Institute of Environmental and Biological Science, Lancaster University. Lancaster LA1 4YQ. UK. Elsevier Science Publishers Ltd. England. Environmental Pollution 81 (1993): 229-249. p. 237.

^{7.} M. Matsubara, J.M. Lynch, F.A.A.M. De Leij. (2006) A simple screening procedure for selecting fungi with potential for use in the bioremediation of contaminated land. Kobe Steel Ltd. 10-26 Wakinophama-cho 2 chome. Shinko Building. Shu-ku. Kobe 651-8585, Japan. School of Biomedial and Molecular Sciences, University of Surrey, Guildord, Surrey Gu2 7XH, UK, Forest Research, Alice Holt Lodge, Farnham, Surrey Gu10 4LH, UK Elsevier Science Publishers Ltd. Science Direct. Enzyme and Microbial Technology 39 (2006): 1365-1372.

 ^{8.} S.C. Wilson, K.C. Jones. (1993). Bioremediation of Soil Contaminated with Polynuclear Aromatic Hydrocarbons (PAHs) A Review. Institute of Environmental and Biological Sciences, Lancaster University, Lancaster, LA1 4YQ, UK. Elsevier Science Publishers
 Ltd. England. Environmental Pollution 81 (1993): 229-249.

President's Message

Welcome Mushroomers!

My name is Rosemarie O'Bertos... I love the thrill of the hunt, the invigorating trek through uncharted (and well known) territories and the victory that culminates in the "capture" of the elusive mushroom... and I am your new President!

Don't be afraid...I may be the newest, greenest President the Society has ever had, but I am very excited about the course that the Alberta Mycological Society has set for this year. Your executive has laid plans that have been germinating under the cover of snow and in anticipation of spring.



Who is this new President you ask? I am from the small town of Lamont, attended the U of A in the B.Sc. program and currently have a career in Financial Services. I loved to pick mushrooms in the bush with my dad and I guess I just never thought there would be a day when he wouldn't be there to lead the hunt. When he passed away I didn't have anyone to venture into the wild with for about 13 years...and then in 2009, I discovered the AMS. I was so excited about meeting others with the same passion for picking that I fell in love with the Society. I'd never met such an exciting, diverse group of people, many with scientific backgrounds. It was heaven on earth! I was easily recruited into the Membership position where I got to meet and talk to interesting members. I loved it!

Imagine my surprise when at our Winter Retreat, the executive members kind of pointed at me and said, "Hey Rose, YOU can be our President!" I argued that I am far from being a mushroom expert. The consensus came back that it's organizational skills that are required, not a PhD in mycology. I looked around the room at the diverse group of talented and experienced executive and realized they were all there to move the Society forward in their own unique ways with their own special talents. I was not sure if I could fill Martin's shoes (after all if you have ever met him, his shoes are definitely a lot bigger than mine), but did you know he was one of the original members of the AMS? I realized the potential we had! If I can let Martin run loose with putting programs together instead of putting meetings together with his knowledge and the contacts that he has, the sky is the limit...so I say "GO Martin!"

This is the 25th year for the Alberta Mycological Society. It all started in Edmonton, in 1987, with ONE lady, Leni Schalkwyk, and her passion for painting fungi...it basically mushroomed from there. We are now focused on truly becoming the "Alberta" Mycological Society encompassing the entire province as our name implies. Interest in the "intellectual sport" of mycology has very different meanings for everyone. We intend to utilize the "interests" and "skills" information on the AMS Membership forms to gather your ideas, to garner your input and implement your helping hands to develop these areas of interest for our diverse members throughout Alberta. Please be generous with any time or skills that you have to donate to this fascinating sport and this growing organization.

In 1992, there were 60 members in our club, 13 of them are still active members and very knowledgeable. Let's get together, utilize their strength, have loads of fun, learn from them, grow as individuals and as a club by doing what we love and are passionate about! In 2012, we have over 300 members!

You know what they say "Every hour you fish adds a year to your life", so let's "fish" for mushrooms and live a very enjoyable long life!

Looking forward to meeting you at a foray soon!

2012 Executive

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Tips on Photography & Photo Contest

By: Stewart Cranston

If you weren't at the AGM, you may not know that our special category for the 2012 mushroom photo contest is Polypores. As usual, we will also have our two standard categories, Best Overall, and Best Documentary.

At first thought, you may be sceptical of how pretty polypore photography could be. You may be surprised, how variable and beautiful they can be; from the bright orange cinnabar polypore (*Pycnoporus cinnabarinus*), to the glossy red *Fomitopsis pinocola* glistening with dew in the morning sun.

I fully expect that we will see some excellent photographs in the polypore category this year, because you don't always have to lie down, bend down, or get on your knees to catch them in your view finder. Often, being above ground, on the trunk of a tree, they lay prey to the avid mushroom spotter. That said, keep your eyes on the ground too, because there are some interesting terrestrial polypores growing there too, like the tasty Albatrellus ovinus.

What makes a good mushroom photo? The first and foremost factor is image quality, which is made up of focus, depth of field, contrast, color, lighting, and exposure. We're also looking for composition; is the entire mushroom in the photo? Is it subjectively appealing? Can you see what the substrate and surrounding trees are? Is it a healthy, typical specimen? Can you tell how large it is?

Documentary photos are a little less about appeal and a lot more about information. A good documentary consists of one, or more photos that provide every visual component of



2011 - 1st Place of the Best Overall Category *Hygrocybe cantharellus* Photo by: Chad Moss

mushroom identification that can be seen with the naked eye; shape, size and color of the cap, gills or pores, veil, texture and gill attachment. If it is important, you may also want to show what the inside of the mushroom looks like by showing a cross-section. Also important is that the immediate environment, substrate and host is also visible.

In this year's newsletters pay attention for some photo tips; this edition, we're going to look at depth of field, and how to improve it, particularly with a medium quality point-and-shoot style digital camera.

Aside from all around poor focus, poor depth of field is the next likely reason why mushroom photos fail. Depth of field is the distance between the nearest and the furthest objects that are in focus. A photo with good depth of field will have the entire mushroom in focus, front to back.

With a camera, the resulting depth of field is a factor of the aperture, the size of the hole that the camera

permits light to enter the camera through. The smaller the hole, the greater the depth of field; also, the smaller the hole, the longer the exposure time. Modern automatic cameras generally choose a balance of shutter speed and aperture, based on the amount of available light, to get the right exposure level.

The following two tips go around your camera's automatic settings because those settings are designed, generally, for taking photos of people, not itty bitty mushrooms. First off, make sure you know how to put your camera on the macro setting; you probably have a menu that lets you choose between a symbol of a person, a mountain and a flower. The flower is the macro setting. Using it will tell the camera that the auto focus mechanism should be looking for close objects.

Next, if you are either using a tripod, (the best option), or using a flash, you want to set your camera on the aperture priority setting, which on most cameras looks like Av. This setting lets you choose the aperture, while the camera adjusts the shutter



speed to regulate the exposure level. On the Av setting, you want to put it on the largest number available; the bigger the number, the smaller the hole, and the greater the resulting depth of field. For most medium-end cameras the aperture goes as high as 8. Keep in mind that you won't actually see how much depth of field you will get in your view finder. The camera doesn't change the aperture until you press the button.

Alternatively, if you are holding the camera in your hand, and don't want to use a flash, put your camera on the shutter priority setting, which on most cameras looks like Tv. This setting permits you to set the shutter speed, while the camera automatically adjusts the aperture. Most people will end up with a blurry photo if the shutter speed is anything slower than a 60th of a second. You may have to go 125th of a second. Anyhow, by setting the camera on the slowest shutter speed that you can use without getting a blur, the camera will automatically be choosing the best aperture possible for your shot. This technique works better when there is lots of available light, and might not work if it you are in deep, dark woods.

At the end of it all, enjoy yourself, and take lots of shots. See what works for you. I look forward to seeing your submissions.

Send to:

photocontest@wildmushrooms.ws
Subject line: Photo Contest



 2011 - 1st Place of the Documentary Category True Morel Photo by: John Thompson
 2011 - 1st Place of the Ascomycetes Category Pseudorhizina sphaerosora Photo by: Martin Osis





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Photo Contest

The photo contest is meant for everyone. We look forward to witnessing with you the beautiful creations you have had the pleasure of encountering. Take many photos over the season so that you can share them with friends, family and your mycological society. There is no such thing as too many pictures.

Some cameras even offer the feature of geo-referencing your image. This may be a useful tool for next season when you would like to re-visit the mushroom you had discovered. If your photo submission has Universal Transverse Mercator (UTM) co-ordinates or the latitude and longitude of the location of the mushroom your submission will earn a bonus point.

The goal of the contest is to create a digital resource library of photos for use by the AMS and its members and presenters, for education purposes. It is important that individual photo quality be judged on projected quality images - 4 mega pixel plus. Only digital images are accepted for the purposes of this contest.

Last year 6 members submitted a total of 57 entries. The edible mushroom category received 23 photographs. The documentary category received 12 photographs and the best photo category received 22 photographs. Thanks again Patrick Tackaberry, Barbara Chan, Honey Pell, and Stewart Cranston our judging panel.





2012 Photo Contest Categories

Polypore Documentary Best Overall Mushroom

2012 Photo Contest Considerations

Technical (Score 1 - 5) Focus Depth of Field Exposure Colour

Artistic Appeal (Score 1 -10) Composition Colour Background Lighting



Birch Polypore Piptopourus betulinus



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Forays Review 2011

by: Bill Richards, Foray Coordinator

Not unlike most years there were many forays scheduled whether it was for an evening stroll in a neighbourhood park or a weekend in the wilds of Alberta. There were mushroom picking opportunities for everyone. This coming year will follow the same format with evening and weekend forays.

The 2011 Alberta Mycological Society Spring foray took place on May 14 at a burn site near the hamlet of Opal. The beautiful weather after what seemed like a long winter brought forayers out in droves. There were 79 members and guests which showed up for the first foray of the year. Only several people were able to find a morel. There were few mushrooms but lots of small burn-site cup fungi.

The May Long weekend Morel Foray May 21 to 23 was a weekend campout. The event was held in the Alder Flats area. We were very fortunate to be hosted by Kathy Schwengler on her property and with whose assistance we had permission Photo by: Chad Moss to access leased land in the vicinity.

The Poplar Creek Oyster Mushroom Foray has seen some wet years but this June 18-19 foray would be classed as one of the wettest weekend campouts. Thanks to Pieter van der Schoot for arranging the warm dry Moose Hill Hall for our use and to all the other organizers and participants. Special thanks go to Chad and Thea Moss and Martin for the superb entrees and all the others who brought their favorite dishes to the banquet.

The "Unexpected Morel Foray". Although July falls right in the middle of the mushroom season it tends to be a slow time for mushrooms. However the July long weekend July 1-3 turned out to be something special as both sides of the Forestry Trunk Road leading to Ram River Falls Provincial Park was lined with morels.

The annual Parks Day foray and display was held in Bow Valley Provincial Park. Thanks to the Osis family and park staff for keeping this going.

Thanks to all who went out on Pre-EXPO Foray August 13th as your collections made for another very successful Exposition at the Devonian Gardens.

The August long weekend July 29 to August 1 found us on another reserved campsite at Minnow Lake Provincial Recreation Area. Amanita and Leccinum Photo by: Shelley Stobee were the species of note.

The Great Alberta Mushroom Foray Sept 2-6, found us again at the Hinton Forestry Centre. By all accounts the Great Alberta Foray is the one to attend.

The Annual Edson Area Weekend foray of Sept 9 – 11brought us back to the Weald Group Campground.

Foray in the Neighbourhood

Eleven summer evenings were scheduled mostly in the Edmonton river valley but also at natural areas in St Albert, Sherwood Park and Cooking Lake. I wish to thank all the leaders and participants for making these forays so successful.

This year there was a concerted effort made by Martin to bring forays to other areas. It is hoped that this thrust will gain momentum and make for regular outings. Some of these forays took place in Kananaskis June 11; Mount St. Francis Retreat, located on the outskirts of Cochrane, June 12; Hinton July 10 and West Bragg Creek September 10.







Morchella elata and Geopyxis carbonaria

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Attention: Robert Rogers' New Book - The Fungal Pharmacy By: Robert Rogers

Lovastatin is a well-known pharmacological agent, approved in 1987 for treating high cholesterol. High levels have been found in oyster mushrooms. During the growth of the fruiting body, the constituent is first transferred to the pileus and later the lamellae. Nonetheless, it is fully present in non-sporing mushrooms, and can easily be added to the diet of patients with cardiovascular risk. Lovastatin-like compounds are higher in caps than stems, and more concentrated on mature gills.

Earlier studies by Bobek et al, 1993, show that the addition of 2-4% of oyster mushrooms to the hyperlipidemic diet efficiently prevented accumulation of cholesterol. Work by the same author in Physio Res 1995 44:5 found a 25% decrease in liver compared to control, and a 50% plasma cholesterol turnover. These were rat studies, and as all researchers are aware, rabbit studies are more accurate indicators of human physiology when it comes to cholesterol issues. Mevinolin, a fat-lowering medicinal component has been detected in the fruiting body, as well.

Plovastin is a standardized extract developed at the University of Haifa, Isreal. It contains biologically active statins, which are known inhibitors of cholesterol metabolism in the human body. In the human intestine, the chitin of the hyphal cell wall is changed to chitosan, which helps bind bile salts, and



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influence the absorportion of fats.

Wang et al, recently isolated a novel ubiquitin-like protein from the mushroom, that exhibited a n t i - H I V or h u m a n immunodeficiency virus inhibitory effects. Biochem, Biophysl Res. Commun 2000 276. It appears to govern viral cell division.

A clinical trial is underway at San Francisco General Hospital. It will look at the short-term safety and potential efficacy of Oyster mushroom to treat HIV patients with hyperlipidemia, while concurrently taking a protease inhibitor Kaletra. One issue with these anti-virals is that they interfere with lipid metabolism in the liver that leads to elevated L D L a n d i n c r e a s e d cardiovascular risk. It may prove that oyster mushrooms are a good adjunct to HIV therapy.



Poster: the AMS Poison Mushroom Project

By: Martin Osis

In 2004 the AMS started our Provincial Mushroom campaign – "Pick a Wild Mushroom, Alberta!" (PAWMA). Once we got going we realized we had one major issue; we did not have any photos of our mushroom to promote it with. To address that concern we started another important initiative – Our Annual Photo Contest. After our first year we had a number of "Red Top" (Leccinum boreale) photos to choose from and published our first poster: "A Provincial Mushroom".

Buoyed with that success, we followed with more photo contests targeting specific mushrooms and published our next two posters: "Some Edible Mushrooms of Alberta" and "Medicinal Mushrooms of Alberta". Both posters were well received and are still in constant demand. Starting in 2008 our next target project was the poisonous mushrooms of Alberta. In fact, we featured a poisonous mushroom category in our Photo Contest for two years in a row just so that we could get enough images to be able to publish this poster. In early planning of the poster, the Board discussed the idea of having a poster with the highest level of quality in content, information and images so that the poster could be used in medical settings. Our Vice President at the time, Robert Rogers approached the board of the Centre for the Cross Cultural Study of Health and Healing (CCCSHH), Department of Family Medicine at the University of Alberta with the idea of a poison mushroom resource poster. Robert, together with the chair of CCCSHH, Dr. Earle Waugh approached the Alberta Centre for Injury Control & Research. School of Public Health at the U of A with the idea. It received enthusiastic support including funding for production of the poster. They envisioned seeing the poster in every emergency room and health unit in the Province.

The poster was then developed with much input from Robert Rogers, who researched and compiled most of the clinical data, while I worked assembling the information on the mushrooms, the mushroom images, and working with our layout artists to come up with a final copy. We also want to acknowledge Dr. Michael Beug, from the NAMA Toxicology Committee, who worked with us to verify accuracy throughout



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the project. The development of the poster took much longer than expected as we attempted to get so much critical information on one sheet of paper. After several trips back to the drawing board we realized that we needed to go to our double-sided format.

This poster is just the first stage of our Poison Mushroom initiative. We intend to follow with more detailed information on our website -- more photographs and a Mushroom Poisoning Report Form so that we can track mushroom poisonings in Alberta and bring that information back to our members.

Thanks to all contributors and photographers for your support and encouragement!

This "Poisonous Mushrooms of Alberta" poster is free of charge to paid members and will be available at AMS events and forays.



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A new resource about poisonous mushrooms in Alberta

By Professor Earle H. Waugh, Director, Centre for Cross-Cultural Study of Health, Department of Family Medicine, University of Alberta

So Junior decided to taste test a nice looking white thing while wandering in the bush? Now he's reeling and looking a little green? Yep. A poisonous mushroom! Alberta Health and Wellness reports that, on average, emergency departments in the province deal with 34 poison mushroom cases with 10 hospital admissions a year because of the effects of ingesting poisonous mushrooms. Junior will be one of them!

Compounding Junior's problem is the face that he didn't bring a sample of his chosen delicacy along to the hospital. Emergency Room staffers know that if the incorrect antidote is given, it could make matters worse. Hence the need for pictures and up to the minute treatment information. The Alberta Centre for Injury Control & Research in the University of Alberta (U of A) School of Public Health funded a collaboration between the U of A Center for Cross-Cultural Study of Health in the Department of Family Medicine and the Alberta Mycological Society to produce an attractive new poster - Poisonous Mushrooms of Alberta. The poster displays bright photographs of Alberta's major toxic mushrooms and a description of the antidotes for each. All Junior has to do is point to the picture and the ER staff know immediately what they have to give him. Medications and treatments are improved regularly and an information poster of Alberta's poisonous mushrooms and their related toxins has been needed for several years. The new poster illustrates eight groupings of toxins across several genera of mushrooms that have the potential to cause varying degrees of toxicity from stomach upset to death. The poster describes common symptoms evident after the ingestion of a poisonous mushroom along with photographs of representative species. On the poster, mushrooms are categorized into their toxic groupings. The poster identifies appropriate medications along with the latest treatments and procedures derived from evidence-based practice associated with each distinct episode.

General descriptions of the characteristics of each mushroom are included to help quick and efficient identification of the toxic group involved. Physicians, health centres, naturalist groups, poison centres, veterinarians, Girl Guide and Scout leaders, and park wardens will find the poster very helpful.

A free copy can be obtained by emailing or by visiting the Family Medicine Research Office, 901 College Plaza on the corner of 112 Street and Whyte Avenue in Edmonton. Call 780-492-8306 for more information.



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The **Alberta Mycological Society** would like to thank the following businesses and individuals for their donations to our Silent Auction, which took place at our AGM & President's Dinner on March 24th, 2012. Your generosity is appreciated!

Art Beat Gallery, St. AlbertBeDr. Jon Stobee, DevonEnGate Avenue Service, St. AlbertGateLa Crema, St. AlbertLiLuisa's Ristorante, St. AlbertMRobert Simpson, EdmontonRoVelma Sterenberg, Yellowknife, NTThe Jenkins Family (Tim Hortons), St. AlbertHole's Greenhouses & Gardens Ltd, St. Albert

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AMS -25th Anniversary Jackets

Only \$55.00 (complete with our logo!)

Mens and Ladies Drive Athletic Jacket- complete with logo

92% Polyester/8% Spandex, Set-In Sleeve, Water & Wind Resistant, Low Moisture Absorption, Quick Dry Material, Reflective Piping - Front, Back and Sleeves, Side Pockets, Vented Back (w/ Velcro Embroidery Access), Runners Thumb Holes Note: Jackets fit snug, you may wish to order one size larger than your regular size to accommodate a sweater underneath.

Mens Sizes: S-4XL, Colors: Black, Navy, Royal, Red

Ladies Sizes: S-2XL, Colors: Black, Navy, Royal, Red, Pink



Name: Address:		_ Address:	Phone:		
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#Jackets x \$	Color 55.00= \$		#	Jackets x \$:	Color 55.00= \$
If paying by: Cheque: \$ T5J 382	mail the order to:	AMS, PO Box 1921, Stand	lard	Life Bldg, 1040	95 Jasper Avenue, Edmonton, Alberta,
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Cash: \$ Please Call Rose : 7	(Bring orde 80-717-3458 with any	r form to an event in person- questions	DO	NOT mail cash))

Forays 2012 - Bill Richards, Foray Coordinator

Our Foray schedule is as full as ever. Many forays are scheduled including several weekend outings in which we have reserved campgrounds in Lesser Slave Lake Provincial Park and Wield Provincial Recreation Area.

The annual Midsummer's Night Foray at the Poplar Creek Natural Areas is planned. There will be many evening stroll in a neighbourhood park to check on what is fruiting; only some of these forays are in the attached list as others folks will be planning forays in their communities. Opportunities for getting out are almost endless so note the dates which work best for you.

This year we have been very fortunate to have received a Research and Collection permit for Elk Island National Park. We have several forays proposed for the park which give us the opportunity to do practical "citizen science" with direct benefits national protected area.

The foray planed on June 22-24 for a burn site near Lesser Slave Lake is hoped to be productive. If we hit the morels correctly they should be abundance.

I hope to see most of the members and guest in the fields and forests over the next months.

2012 Calendar of Events

Date

Wed, April 25 Sat, May-19-12 Wed, May 23 Sun, May 27 Fri-Sun, June 15-17 Fri-Sun, June 22-24 Wed, June 27 Wed, July 4 Wed, July 11 Wed, July 18 Sat-Sun, July 21-22 Wed, July 25 Wed, August 1 Sat-Mon, August 4-6 Wed, August 8 Wed, August 15 Sat, August 18 Sun, August 19 Wed, August 22 Fri-Mon, Aug 31 - Sept 3 Fri-Sun, Sept 14-16 Fri-Sun, Sept 21 - 23 Wed, Sept 26 Fri-Sun, Sept 28-30 Wed, Oct 24 Wed, Nov 28 Thurs-Sun, Dec 13-16

Information Meeting (indoors) Spring Ascomycetes Meeting (indoors) Morel, verpa & spring agarics Midsummer's Night Foray at Moose Hill Hall Burn Site Morel Summer Evening Foray Summer Evening Foray Summer Evening Foray Summer Evening Foray Canada Parks Day Fungi Summer Evening Foray Summer Evening Foray Later summer fungi Summer Evening Foray Summer Evening Foray Pre-Exposition Forays Mushroom EXPO "City of Champignons" Summer Evening Foray The Great Alberta Mushroom Foray - 2012 Foothills Foray The Fungi Festivals -http://www.fungifestival.com/ Meeting (indoors) Newfoundland & Labrador - http://www.nlmushrooms.ca/ Meeting (indoors) Meeting (indoors) North American Mycological Association (NAMA) http://www.namyco.org/index.html

Location

Riverbend Library (7 - 9 pm) Elk Island National Park Riverbend Library (7 - 9 pm) Ministic Area Poplar Creek Natural Lesser Slave Lake Area TBA TBA TBA TBA Bow Valley PP TBA TBA TBA TRA Elk Island National Park "your favorite picking spot" Devonian Botanic Garden TRA TBA Weald Provincial Recreation Area Grand Tour, Shuswap BC Riverbend Library (7 - 9 pm) Terra Nova National Park Riverbend Library (7 - 9 pm) Riverbend Library (7 - 9 pm) West Hills of the Santa, Cruz Mnt. Scotts Valley, California

