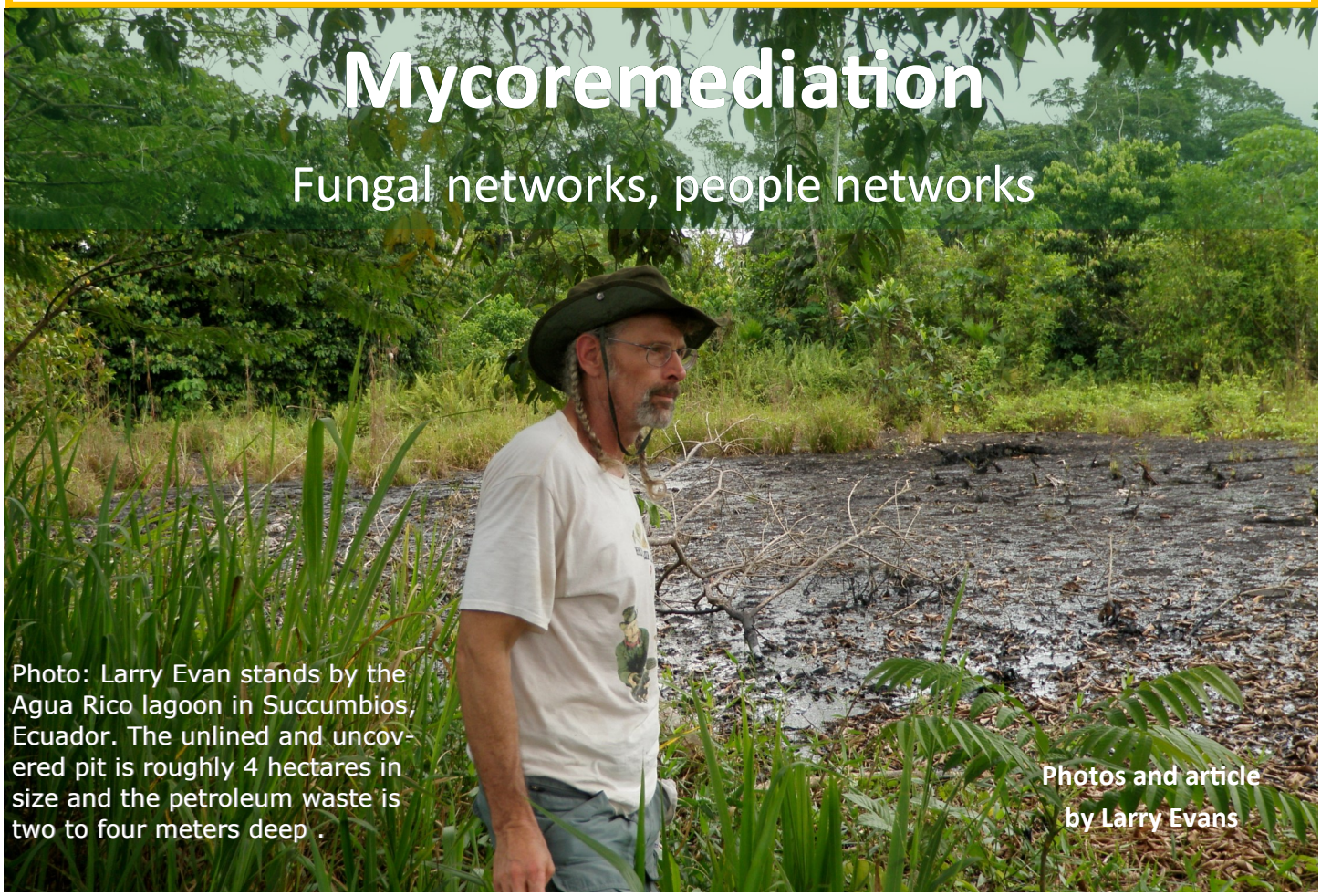
Spore Print

The Alberta Mycological Society Newsletter

Spring 2014



Mycoremediation

Fungal networks, people networks

Photo: Larry Evan stands by the Agua Rico lagoon in Succumbios, Ecuador. The unlined and uncovered pit is roughly 4 hectares in size and the petroleum waste is two to four meters deep .

Photos and article by Larry Evans

Most people have already seen mycoremediation at work. Mycoremediation relies on white rot fungi, the kind you see when you turn over that log that has lain in the forest for the past several years.

White rot fungi degrade the lignin in wood through a unique set of enzymes that can break down the phenolic rings that form the matrix that gives wood its rigidity. But it turns out that the miracle that makes wood seem to fall apart works for some nastier substances as well.

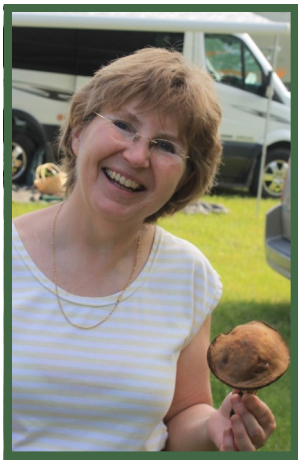
The enzymes in white rot fungi also degrade the complex aromatic compounds in petroleum contamination. We tend to think crude oil is one thing. In fact, crude is a mixture of lighter and heavier fractions. The lighter component, from which we derive gasoline, is volatile and vaporizes easily.

The heavier fractions, which we variously call diesel, kerosene, or heating oils, contain bigger molecules that do not easily evaporate. The thickest compounds, generically called "asphaltic" compounds, are the most troublesome, as these compounds do not "weather away" spontaneously and are known to cause cancer. Fortunately, white rot fungi can decompose these heavy petroleum compounds as well.

There are two ways that fungi attack pollution: first, the fungal hyphae secrete powerful exoenzymes that break down aromatic compounds, and the fungus then absorbs the results. Second, like many roots, the outer surface of fungal mycelia is electro-negative. Positively charged ions (like heavy metals) adsorb to the mycelia even if the fungus is not living.

Over a hundred species of fungi are known to

(Continued on page 3)



President's Message

Rosemarie O'Bertos

Welcome everyone to a new and action-packed year! The AMS is now celebrating its 26th year of service: helping members to locate, collect, identify, photograph, preserve, and as often as possible, eat mushrooms.

Thank you to those who attended the AGM and made it a great success.

I would like to extend heart-felt "thanks" to Bill Richards, who has stepped down from his Foray Coordinator position after many, many years. His dedication to the AMS is appreciated; now he is passing on his knowledge and skills to John Samoil, our new Foray Director. Our Culinary Chair, Chad Moss, has also stepped down. I would like to thank him on behalf of all the AMS members for all the culinary expertise and wonderful food he has provided over the years. We had our election and I am pleased to present your new Board of Directors:

President – Rosemarie O'Bertos
Vice President – Rick Watts
Secretary – Liz Watts
Treasurer – John Holmes
Foray Director – John Samoil
Membership – Francis Sandul
Inventory – Kenzie Volkov
Volunteer Coordinator – Liz Reid
Web Design - Ryan Armishaw
Director at Large – Barb Shworak
Director at Large – Bill Richards
Director at Large – Melanie Fjoser
Director at Large – Michael Marchen
Director at Large – Robert Simpson
Past President – Martin Osis

With a wonderful cast like this, we will take some big strides forward this year. One exciting prospect is developing capability for on-line sales of books, posters, t-shirts and other goods. We will also create a system with easy access to a pool of volunteers interested in assisting with various events and activities.

A long standing tradition of the AMS is to award at the AGM a volunteering member who is not on the board, for their heart-felt contributions to the society. Rick Watts has done just that. He has tirelessly thrown himself into each event in any way that he could, especially in the area of photography. Rick has created a photo library that will eventually complement our own database. It was easy to see why he was the recipient of this year's President's Award.

As the president, I sometimes wonder about what I have to do. Apparently I can shake things up a bit if I feel it is necessary, and I felt like it was necessary in this case. I used my "Presidential powers" to create an Outstanding Service Award. Typically we don't award Board members in this way, but in this case, I wanted to (and the Board agreed). It was with great pleasure that we presented this award to Ryan Armishaw, the young man who worked tirelessly on creating our wonderful website.

Our members make the AMS extraordinary. I am so happy to wish you all a season where you get all that you are searching for and more!

2014 Executive
Alberta Mycological Society

President:
Rose O'Bertos
Vice President:
Richard Watts
Secretary:
Liz Watts
Treasurer:
John Holmes
Membership:
Fran Sandul
Foray Coordinator:
John Samoil
Vounteer Coordinator:
Liz Reid
Past President:
Martin Osis
Directors-at-Large:
Bill Richards
Melanie Fjoser
John Samoil
Robert Simpson
Ryan Armishaw
Kenzie Volkov
Barb Shworak
Michael Marchen
Regional Reps:
Peace River - Ken Dies
Calgary - Russ Green / Barb Shworak
Drayton Valley-Rose Letourneau

Email Contact
contactus@wildmushrooms.ws
Submit an article to Newsletter Editor Paul Sinclair at Newslettersubmission @wildmushrooms.ws

MAILING ADDRESS:
Alberta Mycological Society
P.O. Box 1921, Standard Life Bldg.
10405 Jasper Avenue
Edmonton, AB T5J 3S2

www.wildmushrooms.ws

Mycoremediation: Fungal networks, people networks

Larry Evans

(Continued from page 1)

possess enzyme systems that can degrade lignin and petroleum. While most are Basidiomycetes, a few species with this ability are found in many genera.

How does mycoremediation actually work?

Mycoremediation uses white rot fungi grown on low value agriculture by-products or waste. Once established in its substrate, inoculated substrate can remediate in a cost-effective way large volumes of soil contaminated by relatively low levels of hydrocarbons.

People sometimes forget that mycoremediation is fundamentally about people. Just as the mycoremediation employs vast networks of mycelium to gently break apart nasty chemical compounds, mycoremediation requires people networks to spread know-how and environmental awareness across a vast range of physical, social, and economic environments. Once basic human support structures are in place, pure cultures can be maintained, major scale-up can be achieved, and large volumes of culture can be delivered to remediation sites without the need for large scale sterilization.

That mycoremediation was a fundamentally human endeavor became abundantly clear during the Yellowstone River Exxon spill.

A 12-inch pipeline operated by ExxonMobil ruptured near Laurel, Montana on July 1, 2011. Approximately 63,000 gallons of crude oil found its way into the Yellowstone River during high water, affecting the flood plain 130 km downstream.

Donald Moncayo walking in the overflow stream from another Agua Rico lagoon

A robust bio-remediation plan was established for a contaminated farm site near the spill about five acres in area. A liquid culture of Pleurotus cells was to be transported to the site and used to inoculate cut hay in swathes located adjacent to the slough. The inoculated swathe was then to be expanded by raking it into a second swathe of cut hay. Once well colonized, the inoculated hay the Pleurotus/hay was to be distributed into the slough to contact contaminated soil and water.

The result? ExxonMobil refused to consider the proposal, and no law required anything but the most basic cleanup, which consisted of buying the hay from affected pastures and burning it. As of late last year, Exxon was still in court fighting $1.7 million in penalties.

Lots of important mycoremediation work remains to be done.

A "biopile" of fungal spawn about 2 months after inoculation with oyster mushrooms

The Author

The multi-talented Larry Evans was raised on a Christmas tree farm in Illinois. He has lived for extended periods in Japan and South Korea, and has travelled all over Southeast Asia, South America, and even, Russia, where he was called the "Indiana Jones of mushrooms." Larry founded Western Montana Mycological Association in 1991, and now teaches at the Glacier Institute. Larry was recently featured in Ron Mann's popular 2008 documentary "Know Your Mushrooms." Larry was keynote speaker at the Alberta Mycological Society's AGM in March, 2014.

2014 AGM and President's Dinner

Rose O'Bertos

Thank you to those who attended the AGM and made it a great success. Left, you can see our guest of honor and keynote speaker at both the meeting and the dinner, Larry Evans with our own Martin Osis. Larry gave a fascinating (and entertaining) presentation about bioremediation and some of his other mushroom adventures in the world. Larry, welcome again!

Ryan Armishaw received from the AMS our first ever Outstanding Service Award. Ryan has done a truly magnificent job developing the AMS website. Through Ryan's efforts, we can find out about the club's events , sign up for activities, view the mushroom database, and browse our newsletters. http://www.wildmushrooms.ws/

Rick Watts received a Volunteer Award for his outstanding contribution to AMS activities in the past year. Rick's photographs can be found on our website. Left, Rick is receiving a framed photo of a snail making its solitary way across the gills of a *Pluteus.* Rick, when you see that snail, remember we appreciate your work!

From the South Vancouver Island Mycological Society

Jean Johnson

Not content to wait until west coast rains produced mushrooms, four SVIMS members attended the Great Alberta Mushroom Foray at Westcastle, AB last year at the end of August.

At 4,700 feet, the Castle Mountain Ski Resort provided camping, plug-ins for RVs, and a hostel for accommodations. Over 60 folks attended the foray including Vancouver Mycological Society's Paul Kroeger.

These annual Alberta forays are more than "pick for the pot" experiences, although avid pot hunters would not have been disappointed. Fungal specimens are picked, identified, numbered and entered on a database. Rare or extremely interesting species are photographed and dried for future storage.

Dr. Patrick Leacock, adjunct curator (fungi) of the Field Museum of Natural History in Chicago, Illinois gave an excellent presentation on how to collect and preserve field specimens.

Dr. Tom Bruns, professor, University of California Berkeley added a new aspect to fungal collecting: processing a specimen for DNA analysis. It requires a uniquely manufactured "card" and a hammer. A tiny portion of the fungus is laid on a card made of proprietary materials, then hammered so that the specimen is embedded in the card. The sound of pounding from scientists, not boom boxes, was heard until late in the night.

Paul Kroeger held us spellbound with his talk about Poison Mushrooms or, as he calls them, "Darwin's Elves".

The terrain varied—from wetlands, subalpine coniferous forests, to old growth aspens and douglas firs. The killer foray was straight up one of the ski hills to a plateau teeming with ripe wild blueberries and huckleberries.

We all got our share of edibles such as *Boletus*, *Leccinum*, and *Suillus* species, *Armillaria mellea* (also known as honey mushrooms), *Lactarius deliciosus*, and green *Russulas*.

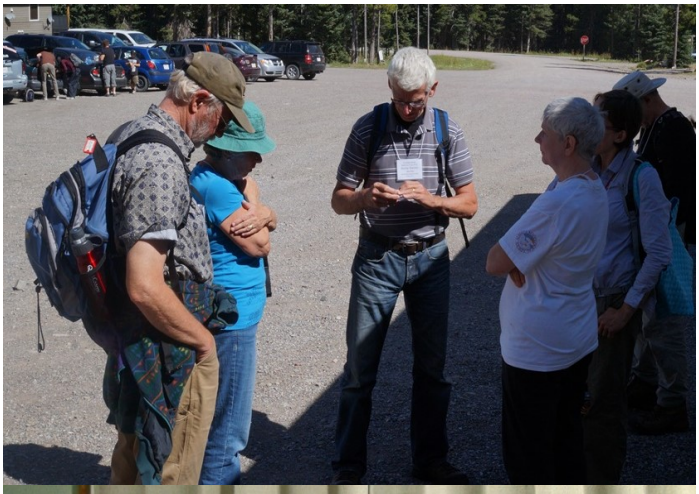
This year, if you still haven't had your fill of mushrooming after the 2014 Great Alberta Foray in Nordegg, Alberta, come join us on Vancouver Island. Our mushroom season will just be getting going!

The SVI Mycological Society

SVIMS (South Vancouver Island Mycological Society) is a club located in Victoria, British Columbia that is interested in all aspects of mycology and mushroom appreciation. Its members include professional mycologists, mushroom growers, mushroom pickers, cooks, photographers, and other enthusiasts. SVIMS also produces a newsletter, Fungifama, that is available online atwww.svims.ca. Please visit our website for news of meetings, events, and forays.

Our annual events include a Mushroom Show, a Survivor's Banquet, a local Educational Foray, and Education Program. You are welcome to pay us a return visit!

Editor's Note: The Great Alberta Mushroom Foray 2014 will be held on the Labour Day weekend in Nordegg area. Paid members will be notified when registration opens. Also, keep an eye on our website www.wildmushrooms.ws.



Bernie and Jill Stanley, Jean and Steve Johnson

Mushroom power: Ancient remedies, modern supplements

Brenna Jacks, ND

Mushrooms have been eaten for thousands of years in Asian countries for their health-promoting benefits. In the past several decades, researchers have begun to explore the active constituents of certain mushrooms in order to understand their full potential to improve health.

Reishi

Reishi (Ganoderma lucidum) is a bitter tasting fungus whose edible (although not palatable) part is the fruiting body of the mushroom. It grows on the wood of deciduous trees, and is notable for its large stalk and fanlike fruiting body. The active constituents are its polysaccharides, triterpenes, and beta-d-glucans.

Medicinal qualities

The polysaccharides in reishi play an important role in regulating the immune system, enhancing tumour response, and lowering blood pressure. Triterpenes inhibit histamine release, improving seasonal allergies as well as liver function. Reishi is often referred to as an adaptogen, which means it helps the body adapt to stressful environments.

Health benefits

A wide range of health conditions have been shown to benefit from reishi supplements. These include cancer, high blood pressure, elevated cholesterol, rheumatoid arthritis, chronic fatigue syndrome, and many viruses. Reishi's immune-boosting effect and ability to improve tumour response make it useful as a complementary alternative treatment in cancer care.

Cultivated maitake from a Japanese supermarket

Other areas of interest stemming from its effect on the immune

system involve treating hepatitis and the herpes virus. Some animal studies have shown promise in the use of reishi to reduce plasma glucose levels in type 2 diabetes.

Shiitake

Shiitake (Lentinus edodes) is the second most cultivated edible mushroom worldwide. Either the extract or the whole dried mushroom is used in herbal preparations. The active constituents are lentinan, 1,3-betaglucan, and eritadenine

Medicinal qualities

The most studied active component is the polysaccharide lentinan, which slows tumour growth rates. The 1,3-beta-glucan is used to ease the side effects of chemotherapy drugs. The eritadenine component is being studied as a way to block cholesterol absorption into the blood.

Health benefits

By stimulating the immune system, shiitake aids in slowing tumour growth and the progression of AIDS. Shiitake has been shown to lower cholesterol in the blood and may be useful in the prevention of heart disease. Studies show that it also lowers triglycerides and prevents fat deposits in rats fed a high-fat diet. Shiitake contains proteins that stop viruses of many types from replicating.

Chaga

Chaga (Inonotus obliquus) is a slow-growing white rot fungus that grows on birch trees in cold climates in North America, northern Europe, and Russia. Its active ingredients include phenolic compounds, melanins, and lanostanetype triterpenoids.

Mushroom power: Ancient remedies, modern supplements

Brenna Jacks, ND

Medicinal qualities

Chaga is used as a folk medicine in the Baltic areas of Europe and Russia to treat tumours and other diseases without toxic side effects. Its active components produce antiviral, anti-inflammatory, and antitumour effects. Chaga also strengthens the immune system.

Health benefits

Chaga has many uses including the treatment of allergies and bacterial infections, and the reduction of inflammation and oxidative stress in the body. A 2010 study examined its use in blood sugar stabilization and type 2 diabetes. A 2010 study showed that chaga and its compounds may hold potential as natural anti-cancer ingredients in food or pharmaceutical products.

Cordyceps

Cordyceps (Cordyceps sinensis) is a fungus that is closely related to mushrooms and is used like a medicinal mushroom. It grows in high altitude climates in the Himalayas. Cordyceps grows from a base of caterpillar larvae that the fungus feeds on.

Medicinal qualities

The active constituents of cordyceps include the polysaccharides, cordycepin, modified nucleosides, and the cyclosporine-like components. Clinical interest of cordyceps revolves around its effect on the immune system and anti-tumour activity.

Health benefits

Traditionally, cordyceps is said to cure 21 ailments including cancer, asthma, diabetes, and viruses. In its fermented form, it can be used to enhance endurance in athletes.

Maitake

Maitake (Grifola frondosa) can be eaten as a food, but research shows that the extract, maitake D-fraction holds superior medicinal benefits. The active constituent is 1,6-beta-glucan, a protein-bound polysaccharide, which benefits the immune system and limits tumour proliferation.

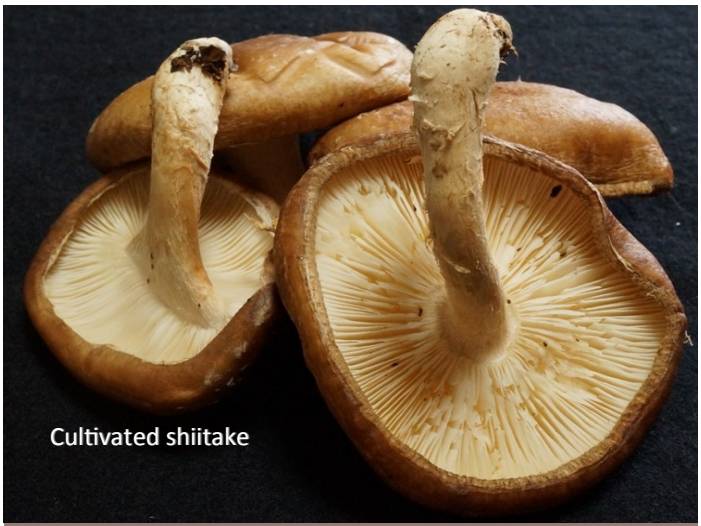
Medicinal qualities

Another constituent, the alpha glucans, have been shown to have an effect on insulin sensitivity.

Due to its effect on blood sugar, maitake is commonly used in the treatment of diabetes and for weight loss. Over 30 years of research shows maitake mushroom D-fraction to be a potent immune system modulator with anti-tumour activity. The main research focus continues to be on its use in cancer therapy, either to enhance the effectiveness of chemotherapy or to decrease the side effects of cancer drugs.

Health benefits

Maitake D-fraction has been stemming from its effect on the immune system involve treating hepatitis and the herpes virus. Some animal studies have shown promise in the use of reishi to reduce plasma glucose levels in type 2 diabetes.



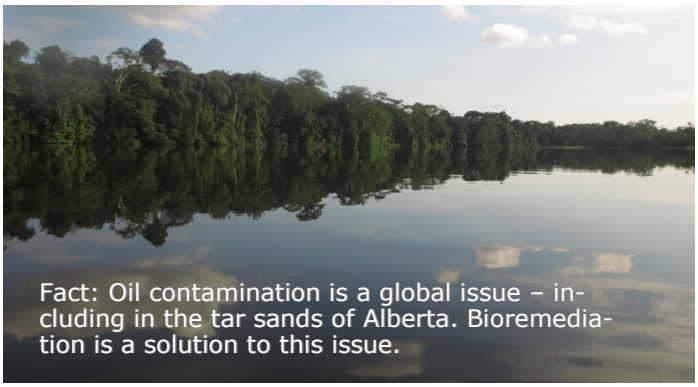
Brenna Jacks, ND, is a member of the Pediatric Association of Naturopathic Physicians. She maintains a general naturopathic family practice in Langley, BC.

AMS would like to thank Editor Leah Payne and Alive Magazine for permission to print this article. Photos are ours.

The Amazon Mycorenewal Project

Harmony Counsellor and the AMP Team

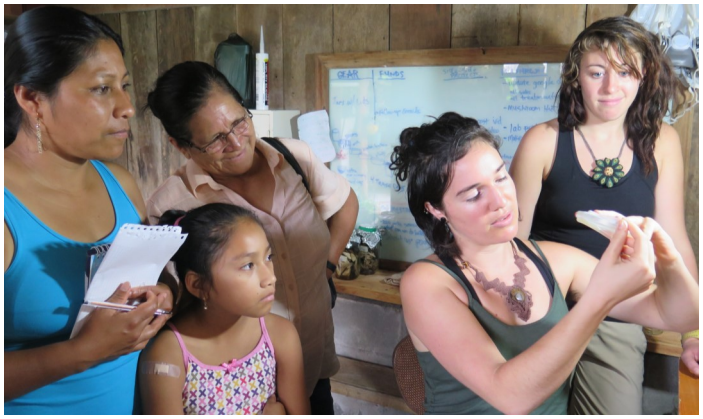
Beginning in spring of 2014, The Amazon Mycorenewal Project (AMP) has been developing an experimental biofiltration system in the Sucumbíos region of Ecuador, the site of the largest land-based oil spill in the world. The town known as Lago Agrio ("sour lake"), has suffered from poor resource extraction methods and therefore serious environmental contamination by various oil companies since the 1960s.



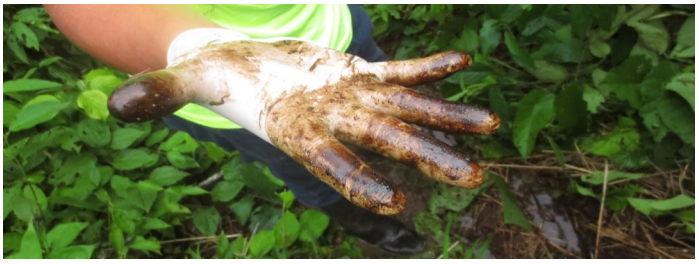
Fact: Oil contamination is a global issue – including in the tar sands of Alberta. Bioremediation is a solution to this issue.

The Amazon is considered the lungs of the Earth, and remediation of this land is crucial to success of the surrounding natural environment. AMP's mission (amazonmycorenewal.org) is to study the combined abilites of fungi, bacteria, and plants to decompose and remediate oil pollution in one of the most biodiverse regions on Earth. Our intention with this project is to develop and implement biofiltration systems on petrol waste pipes that currently flow straight into rivers and groundwaters. This biofiltration system will use the combination of native Ecuadorean fungi, bacteria, and plants to break down petroleum hydrocarbons and decrease heavy metal concentrations before they enter these water systems. We will be testing the soils and water in the system regularly in order to ensure effectiveness.

We are currently growing stronger relationships with Ecuadorean universities, organizations, and government. It is AMP's ultimate goal to support the local communities to be independent in their further research, testing, and implementation of bioremediation. In the end it will be the local people that have the strongest impact on their government to and oil companies to implement effective bioremediation strategies as such. Our design is modular and low-tech so that community members afflicted from resource extraction worldwide can implement it efficiently and effectively.



At this point, we are beginning to cultivate fungi, culture bacteria through compost, and identify plants to ensure our system has a multi-trophic approach to recycle wastes back into nutrients. With further funding, we will be able to test for multiple variables and expand the project to other oil spills around the world - including those in Alberta. Hence, we've launched an indiegogo campaign and are looking for any and all support to help support proving the efficacy of our design (https://www.indiegogo.com/projects/bioremediation-of-industrial-pollution/set_up). Our stretch goal is to replicate our system in Alberta on oil sands tailings pond effluent.



Mycoremediation

Robert Rogers

The use of mushroom mycelium for restoring ecological balance is not new. Mushrooms have been environmental stewards for millions of years, breaking down waste materials and liberating the basic building blocks of life. What is NEW, however, is a growing awareness of this potential, put into action around the world.

I had the great pleasure, at last summer's Telluride Mushroom Fest, of meeting Ja Schindler, founder of Fungi For The People. His group of colleagues, including Peter McCoy, and my new friend Willoughby Arevalo, have been conducting mycoremediation courses throughout North America. These basic, hands-on workshops have enlivened a growing number of astute young people wanting to make a difference. The techniques are low tech, low cost and highly effective.

A group that really excites me is Radical Mycology. I was kindly invited to their next conference this October 9-13 in Illinois, but alas, my teaching schedule does not allow me to participate. To learn more go to www.radicalmycologyconvergence.com . This conference is volunteer run, and is focused on teaching the many ways that fungi can strengthen personal, social and ecological systems. Skill sets including food systems, medicinal mushrooms, and restoring polluted and damaged environments are part of their mission statement.

They have been part of initiating a grassroots mycoremediation product in South America. Known as the Amazon Mycorenewal Project, this low cost, myco-filtration system uses fungi, plants and bacteria to clean up industrial pollutants such as petroleum. (See our article this issue about AMP.)

A crowdfunding initiative this spring (2014) raised nearly $20,000 to write, edit and print The Radical Mycology Book. This book is a compilation of works by amateur mycologists sharing their knowledge and expertise in the use of fungi for health and healing the planet.

Living near Old Strathcona in Edmonton, I have watched an abandoned Esso gas station sit empty for twenty years due to gasoline contamination. Twenty years! Who paid for the job? Taxpayers.

And I muse to myself about plans to turn our municipal airport, and aviation fuel soaked soil, into an ecological and environmental example for the world. How long will that take and at what cost to you and I?

And I dream about spiking mycelium-filled pipes deep into the earth and cleaning these contaminated soils years faster and at a fraction of the cost associated with microbial and related processes. Think of a large tube, up to 250 meters long, and about ten meters in diameter, stuffed full of oyster mushroom mycelium. Contaminated effluent from the Athabasca Oil Sands is trickled in one end, and out the other is potable water.

Even in our severe winter climate, mycoremediation can take place. It would be a simple engineering process to place heating tubes inside this project that would make the mycelium thrive and do their job all year long. With the billions of dollars generated daily, surely one of the more progressive oil companies can trial this technology on a big scale.

Other possibilities include identification of mushrooms that thrive in sub-zero temperatures. My friend and colleague, Dr. Roland Treu, at Athabasca University, has identified several genera that show great potential for mycoremediation in cold weather climates.

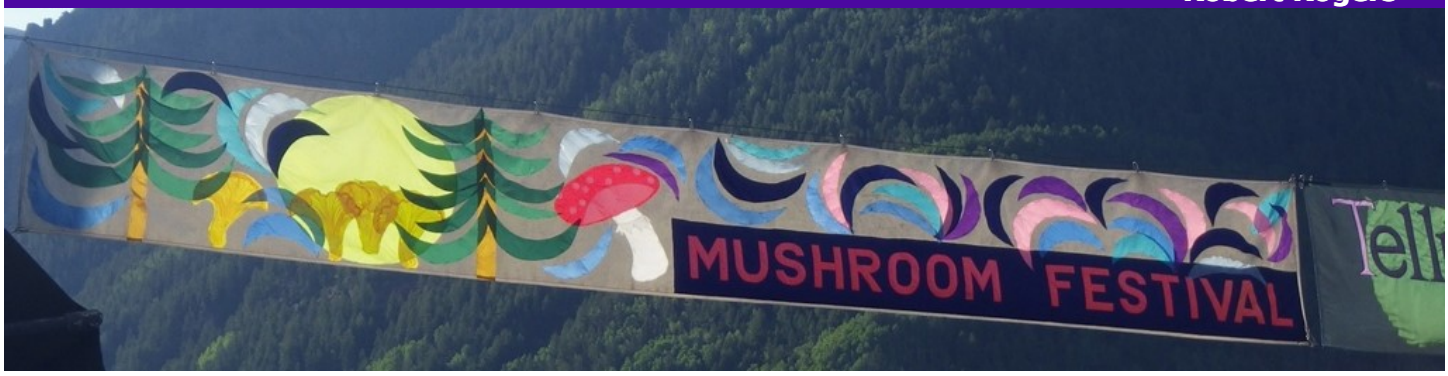
In fact, I am presently in the process of organizing a Mycoremediation conference for Edmonton in the fall of 2016. Experts in the field from around the world are invited to come and share their ideas, technology and expertise. Any readers of this article that may wish to contribute their time, money or expertise please feel welcome to contact me at the email below.

The Author

Robert Dale Rogers is a local professional herbalist and amateur mycologist. He is an assistant clinical professor in family medicine at the University of Alberta, and chair of the medicinal mushroom committee of the North American Mycological Association. He is on the editorial board of the International Journal of Medicinal Mushrooms, and author of The Fungal Pharmacy: The Complete Guide to Medicinal Mushrooms and Lichens of North America. His email is scents@telusplanet.net

The Telluride Mushroom Festival

Robert Rogers

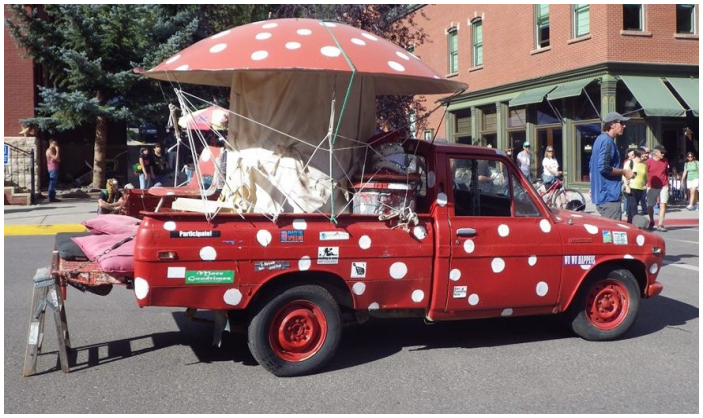


The Telluride Mushroom Festival and the Telluride Institute are thrilled to announce the 33rd annual Telluride Mushroom Festival to be held Saturday, August 16th through Tuesday, August 19th with pre-festival workshops on August 15th. This year, the festival will center on four tracks within the field of mycology: medicinal, mycoremediation, entheogenic, and culinary. I will present "Twenty Myths of Medicinal Mushrooms".

For 33 years, the Telluride Mushroom Festival has celebrated the rich and diverse world of mushrooms with the mission to educate and incite a passion for all things mycological in an ever-expanding audience. In the beautiful setting of the San Juan Mountains, long-time fungi enthusiasts and mushroom novices alike will enjoy activities ranging from guided forays with information on how to locate the safest edible mushrooms to lectures and workshops led by some of the world's leading mycological experts.

The Telluride Mushroom Festival is extremely honored to welcome award-winning author Langdon

Cook as this year's keynote speaker. Cook is a writer, instructor and lecturer on wild foods and the outdoors, and his book The Mushroom Hunters: On the Trail of an Underground America was the winner of the 2014 Pacific Northwest



Book Award. His unique exploration of how mushroom foraging can revitalize our relationship with the earth as well as one another is sure to inspire the mycophile in each of us.

Presentations will be given by famed mushroom photographer Taylor Lockwood, *Cordyceps* specialist Daniel Winkler, and the delightful Maggie Klinedinst, senior research program coordinator at Johns Hopkins University School of Medicine on the latest research into the mental health benefits of psilocybin.

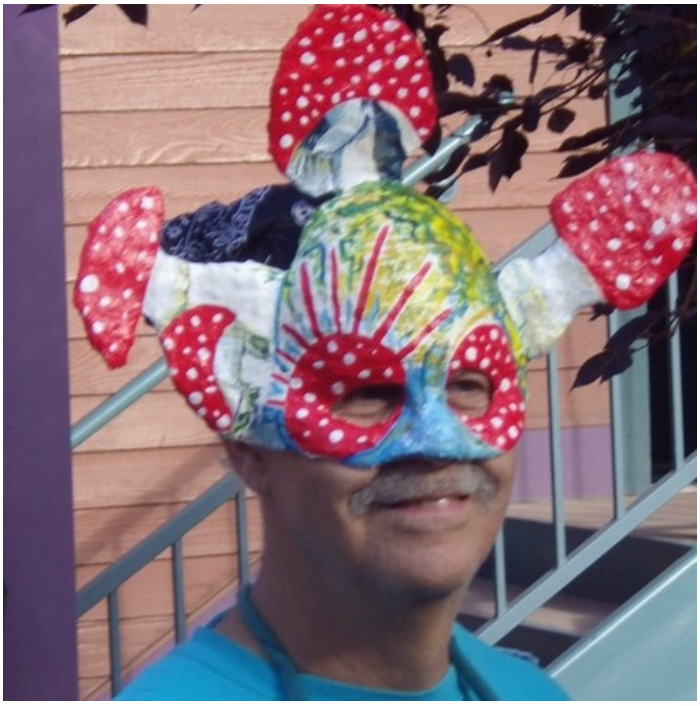
Featured speakers Tradd Cotter and Ron Spinosa will be leading workshops in mycoremediation (the use of fungi to assist in reversing pollution damage) and cultivation, including topics varying from how to use toilet paper and kitty litter to growing your own mushrooms to the potential of mushroom cultivation to improve nutrition and reduce poverty in America. Tradd Cotter's excellent book on organic mushroom cultivation and mycoremediation (I have seen a sneak preview) will be available at the festival.

The Telluride Mushroom Festival

Robert Rogers

This book is a must have for all mycophiles. Rush University Medical Center biotechnology researcher, Dr. Ayman Daba, will discuss the use of mushrooms to reverse cancerous tumors by boosting the host's immune system. Other presentations include "Mycopigmentation: Pick Mushrooms and Dye" with mycologist and fiber artist Alissa Allen. Mushroom identification is her primary passion,

but mycopigments are her obsession. Alissa will lead participants through the process of extracting an array of vibrantly colored dyes from mushrooms that will then be used to color wool and silk. Alissa will offer 3 workshops during the Mushroom Festival which are limited to 20 participants each, so please book early to reserve your space.



This year also sees the inception of the Telluride Institute Voucher Program science tent, led by internationally renowned mycologist John Holliday and distinguished mycological author Gary Lincoff. Funded by Aloha Medicinals, the goal of the program is to include festival participants in the discovery of mushrooms that are yet undescribed or new to science. Festival attendees will be encouraged to bring their fungi to the Voucher Program science tent where DNA specimens of the mushrooms will be prepared.

Hosted by the Wilkinson Public Library on Saturday, August 16, the annual Mushroom Cook-Off street party will be fun for the whole family. Chefs from around the country will compete for the People's Choice Award, the Judges' Choice Award, and the coveted Mushroom Cap by creating delectable and inventive dishes using wild mushrooms. Festival-goers can watch the chefs in action, sample the dishes, and vote for their favorites. The Cook-Off will also feature specially "myco-brewed" mushroom-infused beer, live music, vendors, and a grand tasting.

As always, the ever popular and infamous Telluride Mushroom Festival annual Mushroom Parade promises to be a lively and frivolous celebration of all things fungi. Led by the "Great Wizard" Art Goodtimes, mushroom devotees will parade down Main Street sporting elaborate mushroom-themed costumes. Highlights of the parade include a community drum circle as well as a fiercely competitive costume contest.

This year's Mushroom Festival is expected to sell out, so please reserve your festival pass soon. As always, children under age 12 are FREE and a 15 percent discount on lodging is available through Telluride Alpine Lodging. Full event passes are available at telluridemushroomfest.org or by mail at MUSHROOM 2014 c/o Telluride Institute, P.O. Box 1770, Telluride CO, 81435. For festival information, please visit us on the web, or email media@telluridemushroomfest.org with any questions.

Editor's Note: Please see Robert Roger's companion article in this issue on mycoremediation. Robert is one of Alberta's experts on medicinal mushrooms.

AMS Events for Spring/Summer 2014

June	**14** Burn Site Morel TBA	**20-22** Mid-summer's Weekend Foray at Moose Hill Hall Poplar Creek Natural Area/Moose Hill Hall campout	**25** Indoor Meeting "Wild Edibles"—Lecture by Kenzie Volvos Whitemud Crossing Library, Edmonton 7-9 pm
July	**04-06** Medicine Lake Weekend Foray Medicine Lake PRA	**19** Foray for Canada Parks Day EXPO Bow Valley & Region	**20** Canada Parks Day Wild Mushroom EXPO Bow Valley Provincial Park
25 Waskahigan weekend foray Waskahigan PRA	**25-27** Porcupine Hills weekend foray Porcupine Hills (Calgary region)		
August	**01-03** Prairie Creek - Midsummer Weekend Campout Prairie Creek PRA	**16** Pre-Exposition Forays All groups from all habitats	**17** "City of Champignons" Wild Mushroom EXPO Devonian Botanic Garden (Edmonton)
29-31 The Great Alberta Mushroom Foray Weekend Nordegg			
September	**05-07** Foothills Weekend Foray Weald Provincial Recreation Area	**12-15** Foray Newfoundland and Labrador Gros Morne National Park, Newfoundland	**14** Fall Afternoon Foray TBA via email
October	**09-12** NAMA Foray Camp Arnold near Eatonville, Washington		

*Paid-up members receive detailed info on AMS activities by email .

"Foray in Your Neighbourhood"—weekly evening forays—will be held every Wednesday evening in Edmonton from July 9 to Sept 23 and in Calgary every Thursday evening. Members, watch your email for locations.