SPORE PRINTS

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ALARMING STUDIES STRONGLY INDICATE A CONNECTION BETWEEN EATING *GYROMITRA ESCULENTA* AND CASES OF ALS

Wren Hudgins & Brian S. Luther

In a recent article by Terence Monmaney (2024), he reported on the very serious possible connection between consumption of the Ascomycete fungus *Gyromitra esculenta* (aka the Brain Mushroom, False Morel, or Walnut Mushroom) and amyotrophic lateral sclerosis, also known as ALS or Lou Gehrig's Disease. ALS is a fatal neurological disorder with no cure that affects two to three people per 100,000 every year on average.

So far the experts in the field have not found a *single* definitive cause for this horrible disease, even after studying it for decades, but some correlations relating to genetics and exposure to toxins have emerged as partial explanations.

In the situation we discuss here, 16 cases of ALS were discovered over the course of nine years in the small French mountain town of Montchavin. All 16 people who got the disease lived there and had, over the years, eaten at least some specimens of *G. esculenta*. This is 885 times the expected level of ALS incidence in the general population, so the correlation between these cases and eating this species of mushroom is not subtle.

Gyromitra esculenta.

Apparently, for reasons related to the false belief that eating this fungus had "rejuvenating" and/or "aphrodisiac" properties (Lagrange et al., 2021), the people living there sought out the fungus and consumed it. According to studies reported by Monmaney (2024), none of these people had a history of ALS in their families; all were tested for a susceptible gene, and none had it.

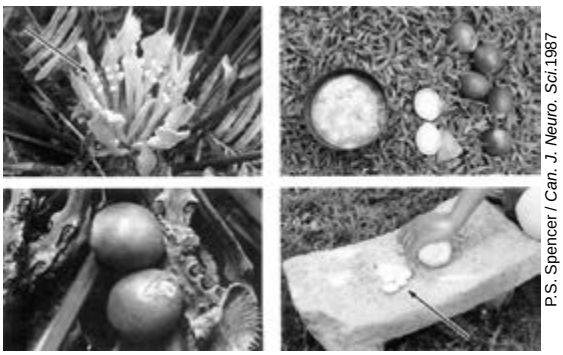
Gyromitra esculenta is found worldwide in temperate regions in the spring, often coinciding with the appearance of edible true morels. It's very common in spring here in the mountains of Washington State and is frequently brought in for ID at PSMS field trips. It's well known to contain large amounts of *gyromitrin*, a precursor compound which is metabolized by humans into the deadly toxin monomethylhydrazine (MMH). Gyromitrin evaporates, is dissipated upon cooking, is water soluble, and is rapidly converted to MMH.

The metabolic sequence goes like this: gyromitrin is first converted in the stomach to N-methyl-N-formyl hydrazine (MFH), then converted in the stomach and liver to MMH (Horowitz, et al., 2024). MMH attacks vital organs and if consumed can result in organ transplants and death. But even after thorough cooking, some of the gyromitrin remains. In his excellent book on mushroom poisons, former PSMS member Dr. Denis Benjamin (1995), says "It must be stressed, however, that despite the volatility of MMH, enough of the compound remains in the cooking liquid and the mushroom itself to pose a definite threat to the consumer." Benjamin (2020) also said those choosing to consume *G. esculenta* might be temporarily "winning at a game of Russian roulette". Horowitz, et al. (2024) appear to agree, saying that parboiling and drying can reduce the toxicity by 99 percent, but that still clearly leaves some of the poison when consumed, with possible long-term consequences.

Most American mycophiles are familiar enough with *G. esculenta* to avoid it for culinary purposes. However, there's a long tradition of collecting and consuming this mushroom in other countries, especially in Scandinavia and Eastern Europe. In recent years, some European countries have banned its sale, but *G. esculenta* is still sought after, sold in markets, canned for sale, and consumed in Finland, Bulgaria, Poland, and parts of Spain (Dirks et al., 2023; Horowitz et al., 2024).

The inhabitants of Montchavin intentionally consumed this mushroom knowing very well that it's poisonous, but they believed they had a foolproof method for detoxifying it. They apparently cooked it, so a lot of the gyromitrin was dissipated. This reduced the toxic effects, which would likely have caused vital organ damage. Instead they got ALS. Curiously, the species name *esculenta* means edible in Latin and when originally described it was apparently thought to be so.

Interestingly, other studies have also indicated a connection between eating similarly toxic plant material and ALS (Spencer, 2019). On the island of Guam islanders often ate the starchy seeds of a species of cycad plant, knowing that these seeds were toxic but also believing they had a way to safely detoxify the seeds. These islanders ended up with high rates of a neurodegenerative disorder much like ALS, but with Parkinsonian-like dementia added in (Monmaney, 2024).



P.S. Spencer / *Can. J. Neuro. Sci.*1987

Top left: the Immature seeds of Cycas circinalis; lower left: mature seeds; upper right: a seed split open and its starchy center being soaked in water to remove toxic chemicals; lower right: the traditional method for grinding the treated and dried material to make flour for food. Problems arise when the treatment is inadequate and toxins remain in the flour.

cont. on page 3

Spore Prints

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CALENDAR

May 10	Field trip (see psms.org members' page)
May 13	Membership meeting, 7:30 pm, CUH and virtual via Zoom
May 16–18	Field trip (see psms.org members' page)
May 17–18	Field trip (see psms.org members' page)
May 19	Board meeting, 7:30 pm, CUH board room and virtual via Zoom
May 20	*Spore Prints* deadline
May 23–26	Volunteers only field trip
May 31	Field trip (see psms.org members' page)

BOARD NEWS — Valerie Costa

Hello PSMS members! This is my first month as PSMS secretary and I want to thank Carolina Köhler for doing such a great job documenting the board's activities over the past year and prepping me to step into this role.

During the April meeting we continued to review the 2018 strategic plan in order to complete it. Megan Webber gave a presentation that included an in-depth analysis of the financial outlook for 2025, including projected recurring income, appropriate margins for nonprofit operations, and proposed allocations for key expenditures. We discussed hiring a bookkeeper to support the treasurer and reserving a portion of forecasted income to thank volunteers. The board also engaged in a conversation about the organization's endowment strategy, with recommendations to align future investment decisions with PSMS's long-term goals. No decisions were made on these recommendations at this meeting.

The Ben Woo Scholarship Committee presented its recommendations for this year's scholarship awards. After discussion, the board approved two awards and postponed a decision on a third applicant, requesting additional information. A discussion followed regarding the Golden Mushroom Award, including potential honorees and the process for formalizing recognition.

We reviewed three proposed organizational policies—fiscal management, conflict of interest, and code of conduct. We approved the first two and will revisit the code of conduct at a later meeting.

Finally, the board approved the rental contract for the Wild Mushroom Show venue at Shoreline Community College again this year.

MEMBERSHIP MEETING — Joseph Zapotosky


Carrie Tribble

Dr. Carrie Tribble.

Our speaker for May is Carrie Tribble, an Assistant Professor in Biology at the University of Washington and Curator of the Herbarium at the Burke Museum. In her talk, she will highlight the often-overlooked role of herbaria and other natural history collections—including fungal collections—in understanding and preserving biodiversity. Drawing on stories from the herbarium, Carrie will explore how preserved specimens of fungi and plants alike are used to track ecological change, map species distributions, and uncover evolutionary relationships, emphasizing how these collections support mycological research and broader efforts to confront today's biodiversity crisis.

Dr. Tribble is a plant evolutionary biologist whose research investigates how biodiversity arises and persists, with a focus on monocots and ferns in regions such as the American tropics, Hawaii, and the Pacific Northwest.

Please join us Tuesday, May 13, at the Center for Urban Horticulture, University of Washington. This will be a hybrid meeting both in-person and virtual via Zoom. Doors open at 7:00 pm. The lecture will start around 7:30 pm.

Gyromitra esculenta and ALS, *cont. from page 1*

One reason that these connections are only now being made is that there's a delay between consuming gyromitrin, or MMH, or cycad seeds and the onset of the neurodegenerative symptoms, which take years or decades. If you eat something and have no ill effects for ten years, it seems quite reasonable to conclude that it's safe to continue eating it, although incorrect in these cases, with tragic results.

Other common spring species often found here in Washington include *Gyromitra montana, G. ancilis, G. leucoxantha, G. olympiana, G. melaleucoides, G. californica*, and others. We also have *G. infula* and *G. ambigua*, but they're found in late summer and fall, not in spring.


John Kirkpatrick

Gyromitra infula.

For many years we have considered *G. infula* to be just as deadly as *G. esculenta*, but some studies have found no gyromitrin in the samples studied (Harmaja, 1976; Dirks et al., 2023). However, there are a number of related chemicals that this fungus may not have been tested for that could be present. Because this species is well known to be very toxic, the toxin must be something other than gyromitrin itself.

Other species of *Gyromitra* are thought to contain little or no gyromitrin, and over the years many mycophiles have collected and eaten some of them, especially *Gyromitra montana, G. ancilis*, and *G. leucoxantha*, which were considered good edibles in some older mushroom books, one example being Tylutki (1993). Dirks et al. (2023) did find gyromitrin in *G. leucoxantha*.


Mycoweb

G. montana.


iNaturalist

G. Ancilis.


Michael Kuo

G. Leucoxantha.

Earlier literature considered *G. montana, G. gigas*, and *G. ancilis, G. leucoxantha*, and *G. olympiana* to be in the genus *Discina* (Pig's Ears). Researchers referring to the presence of gyromitrin in these related species cautioned that "…we likely have not established the full distribution pattern in the Discinaceae" (Dirks et al., 2023). Those of us who have eaten *G. montana* in the past need to be aware of the possibility that what we've called *G. montana* could be a species complex, with not all of them having been studied, and as such could contain more of the toxin.

In conclusion, never eat *G. esculenta* no matter how it's prepared, but all other species of *Gyromitra* should also be *totally* avoided. Different genetic strains of some of the others found in different localities, which have been previously eaten, could possibly contain varying amounts of gyromitrin or other toxins, and you'd never know. Thus consuming any species of *Gyromitra* now with this knowledge would be "playing with fire."

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CONSERVATION COMMITTEE — Ron Post

Since we reorganized, the Conservation and Ecology Committee has held four meetings. In April we reviewed the list of projects we are interested in and how we might proceed with each endeavor. Here is a summary.

1. Advocate the adoption of a state mushroom. Pursue club nominations then a process wherein club representatives meet to choose one final candidate before seeking legislative action.
2. Follow and publicize red-listed or threatened and rare mushroom and lichen species found in this state.
3. Outreach for the purpose of conserving areas with sensitive fungal species or high fungal biodiversity. Promote knowledge about effects of clearcutting forests and when and where medicinal fungal species can/should or should not be harvested. Evolve best practices.
4. Plan and fund an educational/academic one-day symposium at CUH about fungal conservation research. Target early fall 2026 or later.
5. Improve PSMS members' use of iNaturalist to record fungal and lichen observations in Washington state. Plan classes, field trip assistance and other means.

Any questions may be directed to me (ronpost4@gmail.com) or Dennis Oliver (oliverdm@msn.com).

HIMALAYAN FUNGUS COMPOUND TWEAKED FOR 40X ANTI-CANCER BOOST Nick Lavars

https://newatlas.com/, Apr. 26, 2025

Editor's note: This article was originally published in 2021 but has been re-edited and updated with new information current as of April 25, 2025.

By using a compound derived from [species of *Cordyceps*], a Himalayan fungus that has been used for centuries in Chinese medicine as a jumping off point, scientists have developed a new chemotherapy drug with powerful anti-cancer effects. Doing so involved chemically altering the compound to better infiltrate cancerous cells, which proved to boost its potency by up to 40 times.

The 2021 research was carried out by University of Oxford scientists in collaboration with biopharmaceutical company Nucana, and began with a compound called cordycepin. This naturally occurring nucleoside analogue has been used to treat inflammatory disease and cancer for hundreds of years, but runs into several barriers that severely limit its effectiveness when deployed to tackle tumors.

This is largely because as cordycepin enters the bloodstream, it is rapidly broken down by an enzyme called ADA. What is left then needs to be carried into cancer cells by a nucleoside transporter, and then converted into an anti-cancer metabolite called 3'-dATP. This is a lot of hoops for the humble, naturally occurring cordycepin to jump through and means only meager amounts wind up making it into the tumor.

NuCana looked to harness the anti-cancer potential of cordycepin and better equip it to navigate these considerable roadblocks, through what it calls ProTide technology. This is designed specifically to address the shortcomings of nucleoside analogues. It works by attaching small chemical groups to the compound that make it more resistant to breakdown in the bloodstream, and also enables it to enter cancer cells without the help of nucleoside transporters. The upshot is that far greater levels of anti-cancer metabolites are generated and activated inside tumor cells.

This enhanced form of cordycepin was dubbed NUC-7738. This novel chemotherapy drug was initially assessed through *in vitro* studies, where it overcame the resistance mechanisms that inhibit its parent compound. Tumor samples obtained from Phase I clinical trials were then used to probe its effectiveness in humans, with these experiments validating the earlier findings.

When the research was published in the journal *Clinical Cancer Research* back in 2021, the authors concluded that NUC-7738 had as much as 40 times the potency of the naturally occurring cordycepin, with limited toxic side effects. The Phase 1 trial has since moved into the Phase 2 stage, involving a small number of patients with advanced solid tumors who had "exhausted all treatment options."

The compound was combined with a checkpoint inhibitor called pembrolizumab for this part of the NuTide:701 study, and NuCana presented final data at the ESMO Congress in Barcelona last year. The patient cohort was made up of 12 patients ranging from 42 to 74 years of age, who had all "received at least two prior lines of PD-1 inhibitor therapy." The company reported that the drug combination had managed to get the disease under control for nine of those (75 percent), with a 55 percent reduction in tumor volume being noted in one patient. Seven of the 12 "had a progression free survival time of greater than five months, which is highly atypical in this patient population." And the company reported a "favorable safety profile" for the cohort.

"The translational data that has been generated in this study and in previous nonclinical studies give us confidence that the effects we are seeing are a result of NUC-7738 making previously resistant tumors sensitive to rechallenge with PD-1 inhibitors by targeting multiple aspects of the tumor microenvironment," said NuCana founder and CEO, Hugh S. Griffith in a press statement. A patent application was made in September last year "covering NUC-7738's composition of matter."

Encouraged by trial results over the last few years, the company announced last month that Phase 2 trials involving a larger cohort would commence some time in 2025, and that talks with the US Food and Drug Administration are in the pipe to discuss the road map to approval.

MORE PEOPLE TURNING TO PSILOCYBIN FOR SELF-TREATMENT

https://neurosciencenews.com/, Apr. 22, 2025

Use of psilocybin, the hallucinogenic chemical found in what is known as "magic mushrooms," has increased significantly nationwide since 2019, according to a new study led by researchers at the University of Colorado Anschutz Medical Campus and Rocky Mountain Poison and Drug Safety. The study was published in the *Annals of Internal Medicine*.

Psilocybe cubensis, Magic mushrooms.

The researchers found that psilocybin use increased across all age groups, with the largest rise in young adults and older adults.

"We found that since 2019, the number of people using psilocybin has gone up sharply," said Karilynn Rockhill, PhD, co-lead author of the study and researcher at the Colorado School of Public Health. "This seems to line up with when some U.S. states began to decriminalize or legalize it."

Some of the most significant findings include:

- Lifetime use among adults rose from 10 percent in 2019 (about 25 million people) to 12.1 percent in 2023 (over 31 million people).
- Past-year use increased by 44 percent among young adults (ages 18–29) and 188 percent among adults over 30.
- People with mental health conditions or chronic pain were more likely to report using psilocybin.
- Psilocybin-related poison center calls rose dramatically. 201 percent in adults, 317 percent in teens, and 723 percent in children between 2019 and 2023.
- In 2023, more adults used psilocybin than drugs like cocaine, LSD, methamphetamine, or illegal opioids.

"What really surprised us was how quickly these numbers changed and how many people using psilocybin had conditions like depression, anxiety, or chronic pain," said Rockhill.

"New laws or growing interest in its potential mental health benefits may be prompting people to seek psilocybin as a form of self-treatment."

Psilocybin has been studied as a possible treatment for conditions like PTSD, depression, and substance use disorders, though it is not yet approved by the US Food and Drug Administration.

"Public views on psilocybin are shifting. However, that means we also need to make sure people understand the risks, know how to use it safely if they choose to, and that health care systems are prepared," said Joshua Black, PhD, co-lead author and senior scientist at Rocky Mountain Poison and Drug Safety, a division of Denver Health.

The study also revealed a gap in how well current medical coding systems track psilocybin-related problems in emergency departments. While poison center calls have gone way up, very few cases are recorded in hospital ambulatory data.

"If hospitals and public health systems aren't seeing the full picture, they can't respond appropriately," said Black. "Improved tracking tools and education are critical as more states consider regulating or legalizing psilocybin."

The study utilized data from five major national surveys from 2014–2023. Data were used from the National Survey on Drug Use and Health, the Survey of Non-Medical Use of Prescription Drugs, Monitoring the Future, the National Poison Data System, and the National Hospital Ambulatory Medical Care Survey.

FUNGI TILES COULD PASSIVELY COOL BUILDINGS BY UP TO 70 PERCENT

Mumbai Team SMD

https://www.mid-day.com, Apr. 27, 2025

In a groundbreaking fusion of biology and design, scientists from Nanyang Technological University (NTU) Singapore have created energy-free cooling tiles made from fungi and inspired by the design of elephant skin. These "fungi tiles," crafted from the root network of oyster mushrooms and bamboo waste, showed up to 70 percent improved cooling in wet weather conditions.

The textured tiles mimic the wrinkled surface of elephant skin, which is known for helping the animals regulate body heat without sweat glands. Compared to flat tiles, the elephant-inspired design cooled 25 percent more efficiently under lab tests and absorbed heat more slowly.

This sustainable innovation could soon offer an eco-friendly alternative to synthetic insulation.

NTU College of Science

"Fungi tiles" inspired by elephant skin.

SAUTÉED MOREL MUSHROOMS

Kathy Berget

Ingredients

8 ounces morel mushrooms (fresh or frozen)
1 TBs olive oil
¼ cup sherry or white wine
1 tsp garlic (minced)
3–4 sprigs fresh thyme
2 TBs butter

Instructions

1. Heat a sauté pan over medium high heat.
2. Add olive oil and when hot add mushrooms.
3. Cook mushrooms without disturbing for 2–3 minutes then stir and cook for an additional 2–3 minutes until nicely browned. The mushrooms may be hard to determine they are browning due to their already brown color. The pan will begin to show browning from the mushrooms.
4. Add wine and use a spatula or spoon to deglaze the pan. Be certain scrape up all the brown bits from the pan.
5. When most of the liquid has evaporated, lower the heat to low and add butter, garlic, and thyme sprigs.
6. Cook for 1–2 minutes, stirring often.
7. Remove from heat, garnish with fresh thyme, and serve hot.

HUMAN REMAINS FOUND BY OHIO MUSHROOM HUNTER

Chris Arnold

https://local12.com/, Apr. 20, 2025

A pile of human remains was found in the woods of Clermont County, Ohio, after a woman gave her neighbor permission to search for mushrooms on her property.

According to a release from the Clermont County Sheriff's Office, authorities received a call at around 2:47 pm on Saturday regarding human remains found in the woods of Washington Township. The caller reportedly said that she had allowed her neighbor to scavenge for mushrooms on her property, during which the neighbor found "what appeared to be human remains," more specifically, "several bones…which appear human."

"I was thinking, oh this can't be real, I didn't think it was," said Zachary, the man who found the remains. "I was looking for mushrooms and I just happened to stumble across the skull and some other bones and a boot."

Deputies confirmed the presence of human remains at around 2:56 pm, after which the area was secured and other crews arrived to continue the investigation.

Members of the EquuSearch Midwest Team conducted "a comprehensive search of the area" on Sunday, and a pathologist was enlisted to confirm the remains were human.

"It's not every day that you come across another person that's laying out in the woods and it's traumatizing, you know, even if you're a trained professional," said David Rader, director of the team.

MUSHROOM-ILLUSTRATED STAMPS AND POSTAL ITEMS FROM LIBYA

Brian S. Luther

Introduction

The North African nation of Libya has issued only a few sets of official postage and postal items showing fungi, which I have documented here. On some of the stamps the fungi are somewhat obscure and were observable only after studying them under magnification.

Libya is the fourth largest African nation and is somewhat larger in area than the state of Alaska. It's bordered by the Mediterranean Sea on the north, Egypt and Sudan to the east and southeast, Chad and Niger to the south, and Algeria and Tunisia to the west.

The postal items are documented in the following table.

Myco-stamp Issues from Libya.

Issue Date	*Scott Cat. No.*	*Value*	*Type*	*Subject*
7/15/1985	1268a	50d	M	*Leucopaxillus lepistoides*
"	1268b	"	"	*Amanita caesarea*
"	1268c	"	"	*Coriolus hirsutus*
"	1268d	"	"	*Cortinarius subfulgens*
"	1268e	"	"	*Dermocybe pratensis*
"	1268f	"	"	*Macrolepiota excoriata*
"	1268g	"	"	*Amanita curtipes*
"	1268h		"	*Trametes "ljubarskyi"*
"	1268i	"	"	*Pholiota aurivella*
"	1268j	"	"	*Boletus edulis*
"	1268k	"	"	*Geastrum sessile*
"	1268l	"	"	*Russula sanguinea*
"	1268m	"	"	*Cortinarius herculeus*
"	1268n	"	"	*Pholiota lenta*
"	1268o	"	"	*Amanita "rubenscens"*
"	1268p	"	"	*Scleroderma polyrhizum*
1/9/1986	NA	200d	M	*Amanita caesarea* - printed postcard postage +
3/21/1986	1302d	50d	MID	Two stylized mushrooms
11/25/1995	1535c	100d	MID	One stylized mushroom
11/15/1998	1630h	100d	MID	Scouts holding mushroom
2014	1798c	1000	MID	Two stylized mushrooms

In the table and text, M = mushrooms or fungi as the main stamp illustration; MID = mushrooms or fungi in the design of the main illustration, background, or border but not the primary stamp illustration; FDC = first day cover, an envelope (cover) with the stamps affixed, cancelled on the first day of issue and usually with a cover illustration (= cachet) of the same theme; maxicard = a postcard with the stamp(s) affixed, cancelled on the first day of issue, like an FDC, and normally with a full cover illustration matching what's on the stamp; Imperf. = imperforate, lacking perforations between or around the stamps. All catalog numbers are from the Scott Postage Stamp Catalogue.

Brian S. Luther

Mushroom stamps from Libya, 1985. Scott 1268 a–p.

Comments

1985 set

The 1985 set of sixteen stamps is on a very attractive sheet showing a panorama map of northern Africa, the Mediterranean Sea, and southern Europe. Scott 1268c is now *Trametes hirsuta*, 1268e is in the genus *Cortinarius*, 1268l is now *Russula sanguinaria*, and 1268o is misspelled and should read *A. rubescens*. The Libyan postal authority also issued this sheet in Imperf. for collectors, and it's rare and expensive.

Four FDCs were issued for this set and they all show identical covers (envelopes) having either one of the sixteen different stamps affixed on each or a block of four of the set. The cancel is not illustrated with a fungus nor is the cachet. Libya also issued a complete set of 16 maxicards for these 1985 stamps, each having one of the stamps affixed with a corresponding whole postcard color photo of the same fungus. It's unusual that the stamps were placed in different corners on different maxicards. The back (message side) of the cards says Mushrooms from Libya. These maxicards are beautiful, highly desirable, and collectible.

Libya 1985 - One of four different FDCs for this set.

Brian S. Luther

Libya 1985 - maxicard (1 of 16) showing Scott 1268b.

Libya 1986

In 1986 Libya issued a very scarce set of four postal cards, each with printed postage showing only the same *Amanita caesarea* stamp image as in the 1985 set (Scott 1268b), but in a monochrome red. This postal card was issued with and without ad-

ditional stamps. For those with stamps added, the cards have a different block of four of the actual 1985 stamps affixed in the lower left corner. The cancel which does not show any mushrooms (of which there are two per card) is dated 1/9/1986, yet on the bottom of the round cancel it says "F.D.C." Because, as noted above, the stamps (blocks of four) were issued in 1985, this date thus applies only to the printed postage and card; the 1985 stamps were just added as adornment on these cards, having the same theme as the printed postage. I've never previously encountered an FDC like this with postage from two different years. Unfortunately, the Scott Catalogue does not list postal cards with printed postage, such as these, even though they are distinct.


Brian S. Luther

Libya - 1986. One of four printed postal cards for the 1985 set.


Brian S. Luther

The single 1986 stamp (Scott 1302d) is the fourth stamp in a set of five featuring Children's Day. It shows a boy playing a drum, with two stylized mushrooms in the lower right-hand corner. This stamp was also issued printed on a rare postal card.

Libya 1986 - Scott 1302d.

The 1995 stamp (Scott 1535c) is the third in a strip of five stamps, commemorating Children's Day and scouting. The stamp has one large stylized mushroom in the lower right-hand corner, with an equally large turtle underneath.


Brian S. Luther

Libya 1995 - Scott 1535c.


Brian S. Luther

The 1998 stamp is one of 16 stamps on a large sheet labeled "International Day for the Handicap and Scouts." Scott 1630h shows two scouts looking at a book or notebook and one is holding a single unidentifiable mushroom that they're inspecting.

Libya 1998 - Scott 1630h.

The 2014 stamp (Scott 1798c) is one of three issued for International Children's Day, and it shows two stylized mushrooms in the right-hand corner. The 2024 Scott Catalogue does not give an issue month or day for this set of stamps, only the year, which is very unusual.

Brian S. Luther

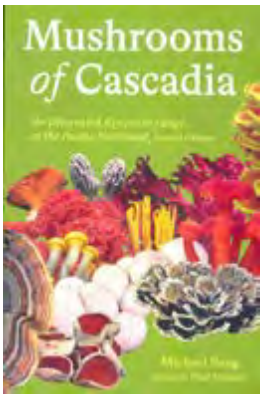
Libya 2014 - Scott 1798c.

A MUSHROOM BOOK FOR PACIFIC NORTHWEST FORAGERS

Dick Sieger

Trying to find names for the mushrooms you found? Why not let the mushrooms speak for themselves? Michael Beug's *Mushrooms of Cascadia: An Illustrated Key* lets them do just that.

It's springtime, so lets use morels as an example. We have 16 morel species around here, and they look pretty much alike. Some are light and some are dark but that's about it. Dr. Beug starts his field guide with just a few pages of keys. We're given descriptions such as "Fruitbody brain-like, saddle-like, wrinkled, or ridged (ascomycetes)." That's not much help for a beginner, but right under this is a row of photos that show unmistakable pictures of light and dark morels. Now we're sent to a section in the book that shows all the morels and their look-alikes. We find big photos of each with its scientific name and text that tells about the features that separate one species from another. We're given notes about edibility and other interesting information about the species.



So, there we go. We found names for our mushrooms by letting the mushrooms speak for them selves.

Mushrooms of Cascadia, An Illustrated Key to the Fungi of the Pacific Northwest, Second Edition; Michael Beug; Ten Speed Press; 2024; ISBN 9781984863478; $28.00 (Don't mistake a book that has a similar title but different authors with this one written by Beug.)

OHIO SEES THE AMOUNT OF MAGIC MUSHROOM "CANDY" TRIPLE IN ONE YEAR

Lacey Crisp

https://www.10tv.com/, Apr. 22, 2025

COLUMBUS, Ohio - The amount of psychedelic "candy" hitting store shelves tripled in just a year, according to the Ohio Bureau of Criminal Investigation (BCI). "They look like candy you would get at a candy store," explained Attorney General Dave Yost. "It's not just magic mushrooms anymore. Some of the candy bars confiscated by BCI are labeled 'Mocha Frappuchino' and 'Fruity Pebbles.'" If you don't look closely, you may not realize it's chocolate-covered psychedelic mushrooms.

The BCI lab didn't see these types of chocolate bars before 2023. In 2023 it reported finding 21 pounds. In 2024, it reported 65 pounds. Already this year, it has collected 150 items containing psychedelic mushrooms.

"I'm especially concerned because we are seeing more and more products [containing] not just psilocybin but also cannabinoid 8 and the various derived hemp products that are beeing marketed in candy form, unregulated," Yost said.

Yost says the illegal candy bars can be found on store shelves in gas stations and vape shops. All places your child can get them.


10tv.com

"Very concerning, there's not really any quality control on any of these. You don't' know what you are getting and they can make you really really sick," Yost explained.

Magic mushroom candy.

STARTUP UNVEILS SUSTAINABLE DIAPERS THAT DECOMPOSE, THANKS TO FUNGI

Anay Mridul

https://www.greenqueen.com.hk/, Apr. 17, 2025

Hiro Technologies via Canva

What can mycelium not do? It can feed humans, stand in for leather, turn into sustainable earplugs, and apparently break down your baby's diaper too.

Hiro Technologies via Canva

Hiro Technologies, an emerging startup based in Austin, Texas, has come up with an innovative way to reduce plastic waste from diapers, all via fungi.

"Diapers are the number one source of household plastic waste and the third largest contributor to landfills overall," says co-founder Miki Agrawal, the founder of viral period underwear company Thinx. "Each baby goes through [around] 5,000 diapers. The very first disposable diaper ever made? It's still in a landfill today. We knew there had to be a better way."

Her startup's solution is MycoDigestible Diapers, which come with a blend of plastic-eating fungi that, when discarded, activate and help break down soft plastics way faster in landfills.

Dubbed SuperHiro Fungi, the decomposition technology aims to address the waste created by the 18 billion diapers that enter US landfills every year, each one destined to sit for 500 years and leaking microplastics into our soil and water. The MycoDigestible Diapers can begin breaking down in less than a week.

Thanks to her toddler son Hiro, she had an epiphany about the diaper industry. "If breast milk is liquid gold, baby poop must be fertilizer gold," she recalled thinking. "Why are we wrapping this potent fertilizer in plastic and not harnessing it for good?"

Right then, Hiro came into the room and asked her to read him a book. She picked up a climate-centric children's book and began reading, turning the pages long after her son had become distracted and run out from the room. A few pages in, the book featured certain kinds of fungi that eat plastic.

This was Agrawal's eureka moment. She soon teamed up with Tero Isokauppila, the founder of mushroom coffee company Four Sigmatic, and established Hiro Technologies.

The startup, which has raised $54,000 in an oversubscribed crowdfunding campaign on Kickstarter, notes that plastic-eating fungi were first discovered by scientists in 2011. Until now, they have been constrained to labs.

Its commercial and shelf-stable tech targets plastic at a molecular level, breaking it down into soil and mycelium without any specialized industrial composting facilities or energy-intensive processes.

Here's how it works: once parents throw the packet away with the used diaper and it reaches a landfill, the fungi activate in the presence of moisture and start breaking down the diaper's materials from the inside out.

Traditional landfill conditions are typically too dry, oxygen-poor, or contaminated for materials to decompose naturally, but the fungi secrete enzymes that target and sever the carbon bonds in plastic, transforming it into mycelium and nutrient-rich soil.

The initial iteration is optimized for polyethylene terephthalate (PET), polypropylene (PP), and polyethylene (PE), which together account for two-thirds of all plastic produced.

MAN GETS FUNGAL LUNG INFECTION AFTER REPEATEDLY SMELLING HIS DIRTY SOCKS

Ashima Sharda Mahindra

https://www.timesnownews.com/, Apr. 25, 2025

A Chinese man's bizarre habit of sniffing his dirty socks landed him in the hospital after it led to him developing a serious fungal infection in his lungs. Li Qui, an office worker from Chongqing attended the hospital after developing a severe cough that was keeping him awake at night despite his taking over-the-counter medications. Later, he was diagnosed with aspergillosis, a type of lung disease caused by mold that thrives in damp locations.

Initially, Li took a few over-the-counter cough syrups, but as his symptoms worsened, doctors began a detailed investigation into his case. According to Dr. Liang Peiqiang, chief physician in the hospital's Department of Respiratory Medicine, Li Qui's CT and MRI scans revealed signs of inflammation and infection in the lower right lung.

After a detailed bronchoscopy, it was confirmed he was suffering from a fungal lung infection known as aspergillosis caused by a species of the fungus *Aspergillus*. Aspergillosis manifests in various forms ranging from mild allergic reactions to serious, invasive infections and affects the lungs, sinuses, and other organs. According to Peiqiang, Li's sock-sniffing habit could have exposed his lungs to spores of the fungus. "After hearing what he said, we realized that this habit of Li Qui might be the culprit that caused his lung inflammation," he noted, as per *The Sun*.

Experts say apart from this bizarre habit, wearing shoes for a long time can form a closed, humid, and warm space, which makes it easy to breed fungi. And if you smell or absorb fungus-filled socks, the fungi may enter the lower respiratory tract through the mouth and nose.

Medics said the patient responded well to anti-fungal medications and has since been discharged from the hospital.

Bizarrely, this isn't the first time a Chinese man has been hospitalized after smelling his own socks in similar circumstances. In a similar incident a few years back, a 37-year-old was also admitted to the hospital with a cough and chest pains after it was revealed he had been addicted to smelling the socks that he had been wearing.