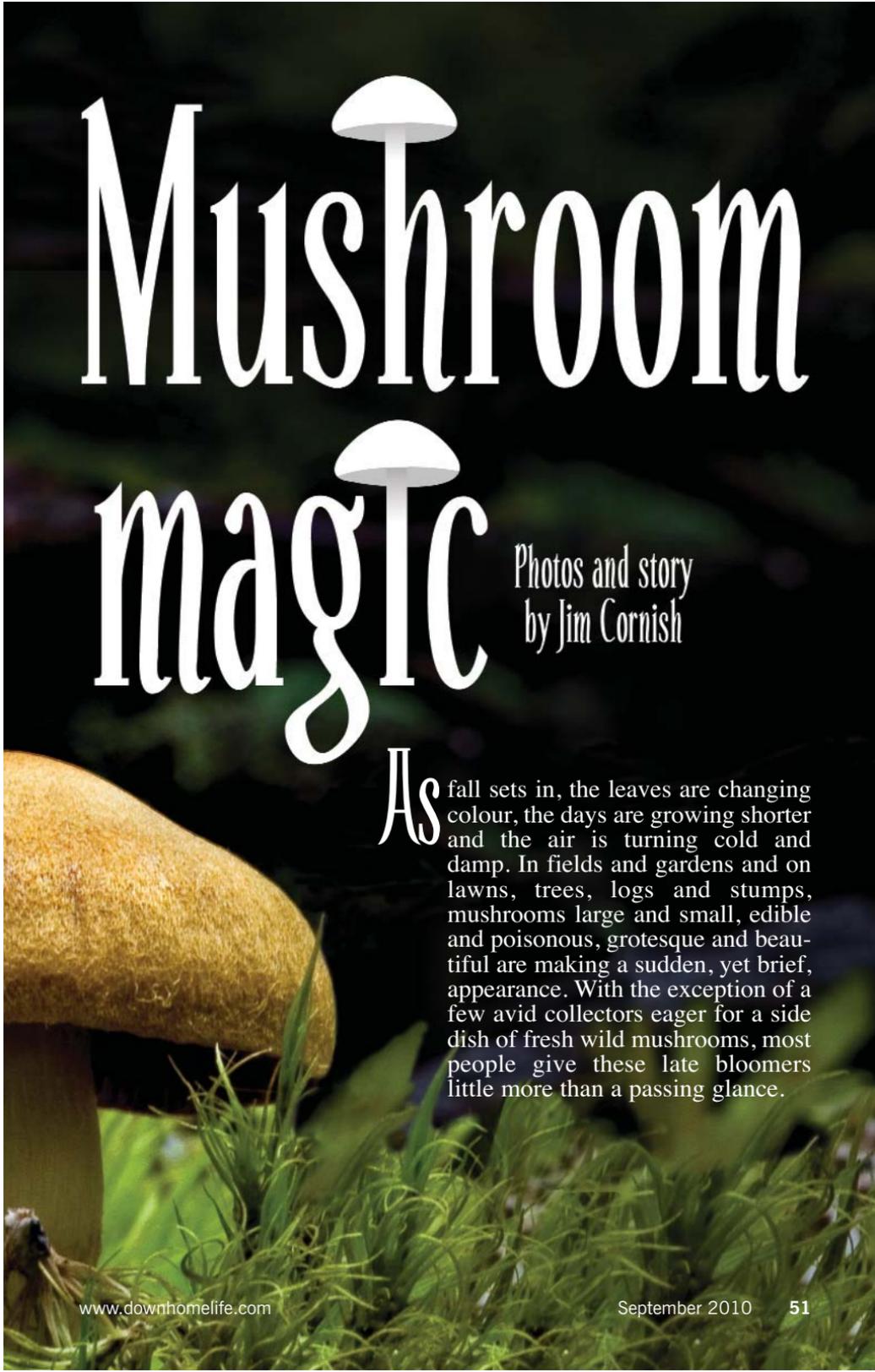


discovery

A different, beautiful and
mysterious world lies at our feet.





Mushroom

magic

Photos and story
by Jim Cornish

As fall sets in, the leaves are changing colour, the days are growing shorter and the air is turning cold and damp. In fields and gardens and on lawns, trees, logs and stumps, mushrooms large and small, edible and poisonous, grotesque and beautiful are making a sudden, yet brief, appearance. With the exception of a few avid collectors eager for a side dish of fresh wild mushrooms, most people give these late bloomers little more than a passing glance.



Coprinus cromatus

This one is found on lawns and fairways. *Cromatus* means “hair,” hence their common names: Shaggy Mane or Lawyer’s Wig. Since its cap extends to the ground and its gills are tightly packed, the mushroom has to self-digest to release spores. Insert: the same mushrooms five days later.



Coprinus atramentarius

An inky cap mushroom like the Shaggy Mane, this one grows in grassy fields near ponds. It is toxic when eaten within a few hours of drinking alcohol, hence its common name: Tippler’s Bane.



Cortinarius armillatus

Armillatus means “armbanded,” a reference to a series of orange-brown rings around its stalk. It is commonly called the Banded Cort. It grows in association with birch trees and is very frequently found in Newfoundland.

Our disinterest in mushrooms is surprising given we have used them for millennia. Evidence of prehistoric use was discovered in 1991, when the remains of a man frozen some 5,000 years ago were found in a retreating glacier in the Italian Alps. An analysis of his belongings revealed two varieties of mushroom – one probably used as tinder to start a fire, and another likely used to treat stomach parasites.

In ancient times, mushrooms were considered food for the gods and kings. During WWII, Russian peasants ate them to avoid starvation. Today, collecting mushrooms for food is a family outing in much of Asia and eastern Europe, and from an early age children are taught which ones are edible.

The shunning of mushrooms began in western Europe during the early Middle Ages. Pagan Anglo-Saxons believed mushrooms were supernatural, linking them to elves, fairies, leprechauns and the underworld, and using them in religious rites and magic shows. Once pagans converted to Christianity, the mushroom was demonized by the church, probably to keep new converts from slipping back to old beliefs and practices. Centuries later, descendants of these western Europeans emigrated to the New World and brought their mycophobia with them. Aversions to wild mushrooms linger in Newfoundland and Labrador today, probably as a result of our upbringing (we are generally not wild mushroom eaters), old wives’ tales and misunderstandings about mushrooms.

What are Mushrooms?

Mushrooms are a small part of something much larger and well hidden. They are the fruiting buds of fungi networks of cobweb-like fibres,

collectively called mycelia, that tunnel through organic matter on, above and below ground.

Although fungi share plant habitats, they are not plants; they lack roots, leaves and flowers. Fungi also lack chlorophyll and cannot produce food through photosynthesis. Instead, they acquire nutrients by secreting special enzymes to digest chitin (insect exoskeletons), keratin (skin, hair, horn and feathers), cellulose (most plant debris) and lignin (wood). This act defines their vital role in nature: to decompose and recycle organic matter.

Forest fungi secure nutrients by partnering with trees. Their mycelia either penetrate or commingle with root hairs, then trade nutrients they have digested for carbohydrates produced by the tree. Without this mutually beneficial relationship, called symbiosis, neither the tree nor the fungi can survive. Some fungi, though, are nasty feeders. They are parasitic and produce pathogens that infect and kill living organisms, even insects and other fungi.

Fungi are classified separately from plants and animals in a third kingdom called Eumycota. There are about 100,000 described mushrooms in this kingdom but mycologists, scientists who study mushrooms, believe there could be a million or more, most of which are microscopic and likely to remain anonymous. Of the described species, only about 1,000 are edible. The remaining are poisonous, capable of making people mildly or violently ill. Some are even lethal, causing death within minutes of a single bite.

Often, there is nothing obvious to distinguish the edibles from the poisonous. If you plan to collect them, bring along someone knowledgeable and follow the rule: when in doubt, toss the mushroom out.



Dacrymyces palmatus

This gelatinous mushroom is commonly called Orange Jelly. Its convoluted lobes seem to ooze from the bark and butt ends of dead conifer logs and stumps. It is often confused with Witches Butter, which only grows on hardwoods. It is visible anytime from spring to late fall.



Lycoperdon pyriforme

Newfoundlanders call these "horse farts." Lacking gills, the spores are stored in a pear-shaped (pyriforme) body. When mature, disturbed puffballs will send a puff of spores jetting through a hole at the top.



Xerocomus badius

Here is an example of a bolete – a toadstool-shaped mushroom that has a sponge-like tissue filled with tubes instead of gills to hold spores. This species grows from dead wood and spruce and birch trees, and is a favourite of slugs.



Fomitopsis pinicola

Commonly called the Red Banded Polypore, pinicola means “inhabiting pines” and these can be seen growing out of the base of trees and logs of the pinus family, such as fir and spruce. Fomitopsis is derived from the word “fomes” meaning warmth, a reference to their use as tinder.



Russula paludosa

The inverted bowl-shaped cap will flatten as the mushroom matures, revealing its white gills. Also a favourite of slugs, insects and squirrels, it’s hard to find one that doesn’t have feeding marks. Be careful when handling these. A little pressure will snap their brittle stems and caps.



Armillaria

These vary greatly in size and shape, and grow singly or in clusters. They are collectively called Honey Mushrooms for their colour and nutty, sweet flavour. Proper identification is crucial, as they have several poisonous look-alikes.

Reproduction

Fungal reproduction is very complex and, in some varieties, still poorly understood. Put simply, most fungi reproduce by spores. Produced sexually and asexually, each microscopic spore has either a male or a female cell inside a protective coating. When the mushroom is mature, millions of spores are catapulted from its gills and fall to the ground or travel on air currents. The few that survive to germinate create a hyphae – a single, long microscopic fibre. After encountering a compatible fibre of the same species, the two fuse and grow into new hyphae, which digests organic material as it branches outward. When enough hyphae amass, a new mycelia (fungus) is formed. The cycle is complete when the right conditions stimulate the fungus to produce buds that grow rapidly and emerge from the substrate to form mushrooms.

Identification

In the world of mushrooms, appearances are often deceiving. Consequently, identification is usually difficult, often technical and sometimes impossible. Guidebooks, while helpful, contain just a small percentage of the hundreds of mushrooms likely to inhabit a region. Unless it has a tell-tale feature or matches the guidebook photo exactly, naming a mushroom to the species is nearly impossible without training, experience and a microscope.

Mushrooms can, however, be easily grouped. The familiar capped varieties can be divided into three groups based on the nature of the underside of their caps – gilled, toothed or pored. Most pored ones are called boletes. Equally easy to group are the cup, coral and jelly fungi. They look just like their names suggest. The woody conk and

bracket-like perennials growing out of trees and logs form another group called polypores. While they vary in size, shape and colour, they are all pored underneath.

NL Mushrooms

Andrus Voitk knows a lot about mushrooms in his region. Since 2003, he has led Foray Newfoundland and Labrador members on mushroom hunts across the island and through southern Labrador. He estimates that there are 2,000-8,000 species of mushroom in this province, fewer than the 10,000 found on the adjacent mainland because we have fewer plants.

Each year, Foray members find about 200 species, “60 per cent of which were not found the year before and 35 per cent that were not found on any previous foray,” says Voitk.

As for edibles, he says we have

about 100 varieties, only six of which can be collected in any quantities, the chanterelles being the most plentiful. He believes there are about an equal number of poisonous mushrooms, six of which are lethal. His pocket-sized book, *A Little Illustrated Book of Common Mushrooms of Newfoundland and Labrador*, is written for the “neophyte amateur” and contains photographs and short descriptions of 300 common species.

Enjoy the Magic

Appreciating fungi requires more than a passing glance. When out walking this fall, keep your head down. If you spot a mushroom, stop, get close to the earth and discover something truly magical at your feet. 🍄

For tips on photographing mushrooms in nature, visit DownhomeLife.com and click on “September Hot Links.”

SW Energy
Solar Winds Energy Inc.

Renewable & Energy Efficient Solutions

Our services include

We have been providing systems to Newfoundland and Labrador for nearly 15 Years, with the highest quality service and design.
Industrial Certifications

Innovative, Integrated System Designs	Specialty Lighting/Efficiency Appliance Concepts
Energy Management	Battery Supply & UPS Systems
Wind Energy and Tower/Pole Systems	Heat Pumps and Efficient Air Conditioning
Solar Electric & Solar Thermal Energy Systems	Cable, Wiring & Bracket Mounting Systems
AC/DC Power Conversion Equipment	Power Distribution Panels and Protection

9 Myers Avenue, Clarenville NL A5A 1T5 Telephone: (709) 466-5411
info@solarwindsenergy.com www.solarwindsenergy.com