Fungi of the Fletcher Wildife Garden

In the fall, we suddenly start to see fungi everywhere. The season usually starts when someone reports seeing a "baseball" or "soccer ball" in the woods and investigation turns up a giant puffball.

This year we started photographing what we find, and this is a first attempt to sort the photos into divisions and classes. **Any names we've assigned are tentative at the moment.**

ABOUT MUSHROOMS AND FUNGI

by Christine Hanrahan

Mushrooms and fungi appeal to us in part because of the edibility of some species, but also because of their beauty and astonishing variety. However, fungi are more than pretty objects or culinary ingredients. They play a very important role in forest ecology, indeed, one could say, a vital role. Scientists are continually finding new ways in which the complex interactions of fungi in the forest ecosystem work. As Hoff et al. (2004) note,

> Studies of fungal biodiversity in forest ecosystems can provide baseline information for determining interrelationships among organisms and indicate potential roles of fungi in forest ecosystem dynamics. Understanding the role of fungi in forest ecosystem processes is key to characterizing stability and succession of biological components (for example, trees), while information on fungal biodiversity can provide insight on sustaining fungi as beneficial resources.

The two main types of fungi are wood-rotting and mycorrhizal. Of the wood-rotting type, perhaps the most visible are the saprophytic mushrooms, the ones we often see after a rainfall. They serve as primary recyclers in the forest ecosystem. By breaking down woody material and other plant matter such as leaves, they not only help to replenish the soil through conversion of debris to humus, but are important for carbon and nitrogen cycling. Of the saprophytes, polypores are generally considered the best and most efficient of the wood decaying fungi. The real work of these organisms goes on below the surface, and the fruiting bodies, or mushrooms, which we see, are just the visible manifestation of a complex structure.

The mycorrhizal fungi are important because of the symbiotic relation they form with many plants, in particular with trees. Although not all species of trees require this relationship to grow, some cannot thrive without it. Explaining how the mychorrhizal fungi work in relation to trees, Smith et al. (2004) note

> The underground mycelium of the mushroom grows extensively around the root tips of specific trees forming a protective sheath with some mycelium penetrating into the root tissue. The mycelium grows also in the soil mass and, eventually, appears at the surface as typical mushroom fruit-bodies or underground as solid fungal masses.

Many species of fungi have complex relationships with other unlikely organisms. Some insect species are entirely dependent on symbiotic relationships with specific fungi. Some fungi produce chemical defences against herbivores for grasses and trees. One wood-rotting fungus even has a complex mutually beneficial relationship with flying squirrels.

Even parasitic fungi — those that occur on living trees and cause rot to set in, eventually killing the tree — have

a beneficial role in forest ecology. As the tree dies, insects move in and further weaken the tree, but these insects attract species such as woodpeckers which in the process of tapping into the tree seeking insects, create cavities. These cavities provide homes for many species of birds and mammals such as flying squirrels. Downed trees or logs, give shelter and breeding sites for innumerable creatures including snakes, salamanders, toads, and insects which in turn are fed upon by other forest animals. When a tree falls it creates a gap in the canopy allowing more light to penetrate the forest floor, encouraging new growth.

DIVISION ASCOMYCOTA — SAC FUNGI

Spores are produced inside a sac-like cell called an ascus. This large group of fungi includes morels, truffles, mildews, ergots, and many wood-rotting species.

30 Sept 2006

Bisporella citrina — Lemondrops

Only a few millimetres in diameter

1 Oct 2006

Helvella crispa — White Elfin Saddle

4 cm tall; ground, Ash Woodlot

11 July 2007

Xylaria polymorpha — Dead Man's Fingers

4-6 cm tall; growing out of rotted tree stump next to BYG, 10 July 2007

Photo by Brian Turnbull

DIVISION BASIDIOMYCOTA

Spores are produced externally at the ends of specialized cells called basidia.

Class Gasteromycetes — puffballs, earthstars, etc.

Spores are produced inside the fruiting bodies instead of being ejected into the air.

30 Sept 2006

Scleroderma? — Earthball

23 Sept 2006

Bovista pila(?) — Tumbling Puffball?

many, all about 4-5 cm; on ground; northwest corner of Ash Woodlot

30 Sept 2006

Calvatia gigantea — Giant puffball

15-20 cm diam.; Ash Woodlot

5 Oct 2006
0.5-1.5 cm; on buckthorn?; birch grove

Class Phragmobasidiomycetes — jelly fungi

Small, gelatinous. In dry weather these fungi shrivel and almost disappear, but rehydrate rapidly after rain.

30 Sept 2006
Witches' Butter

16 Oct 2006
Dacrymyces palmatus — Orange Jelly
2-3 cm, on downed spruce trunk; southeast corner of Ash Woodlot

30 Sept 2006
Exidia glandulosa? — Black Witches' Butter

Class Hymenomycetes

Coral fungi

Spores are produced by a layer of mother cells that covers the upward pointing branches of these fungi.

1 Oct 2006
Grey Coral(?)
6 cm tall; ground, Ash Woodlot

23 Sept 2007
Clavulinopsis corniculata (?)
Coral(?)
4 cm tall; ground, Ash Woodlot

Bracket fungi or polypores

Grow on wood; usually shelf-shaped; spores are produced in tubes on the underside of the fruiting body, which open via pores, which form a distinctive pattern.

12 Sept 2007
Plicaturposis crispa
1-2.5 cm; on birch log, Ash Woodlot

5 Apr 2007
Plicaturposis crispa
Underside

30 Sept 2006
Polyporus umbellatus

30 Sept 2006

3-6 cm; on Birch; birch grove

30 Sept 2006

6 Oct 2006

Ganoderma applanatum — Artist's conk

About 15 cm diam., but thin; on Birch; birch grove

30 Sept 2006

Ischnoderma resinosum

20 Oct 2006

Daedalea quercina — Oak Polypore

Largest about 10 cm long; pores labyrinthine at centre with band of elongated ones along outer edge; on oak branch, Ash Woodlot

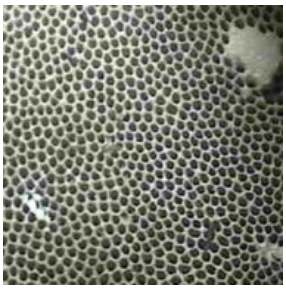
30 Sept 2006

Fomes fomentarius — Tinder Polypore

15 cm, hoof shaped perennial; on Birch; birch grove

30 Sept 2006

Another Tinder Polypore



30 Mar 2007

Pore surface of Tinder Polypore; photo width = 1 cm

23 Sept 2006

30 Sept 2006

Panellus stipticus

12 Sept 2007

Panellus stypticus

1.75 cm across; on birch; Ash Woodlot

11 Sep 2007

Trametes pubescens

3-5 cm diam.; immature cluster on birch snag near ravine

11 Sep 2007

Trametes pubescens

Underside

5 Oct 2006

Cerrena unicolor?

2-7 cm, fuzzy upper surface; on Buckthorn; birch grove

Sept 2007

Trichaptum biforme — Violet-pored Bracket

1-4 cm, smooth, thin; on birch snag; birch grove

5 Oct 2006

Trichaptum biforme — Another view

5 Oct 2006

Under side of bracket at left showing deep purplish pore surface

16 Oct 2006

On birch

16 Oct 2006

1 cm bracket on Cork Elm with many lichens

5 Oct 2006

Trametes versicolor — Turkey Tails

3-10 cm, smooth, thin; on fallen dead wood; Ash Woodlot

5 Oct 2006

Phlebia radiata?

Largest patch about 20 cm; on birch; birch grove

16 Oct 2006

Grifola frondosa — Hen of the Woods

Several, about 10 cm diameter, at the base of a large Red Oak tree in the Ash Woodlot

May 2007

Polyporus squamosus — Dryad's Saddle

4-15 cm diam; small one found in June 2006; very large one in May 2007 on large rotting, but fairly dry, log in the ravine

12 Nov 2007

Irpex lacteus covering one side of a branch of a crabapple

Boletes or sponge mushrooms

Generally grow on the ground near trees; underside is made up of thousands of tubes, through which the spores are released

10 Sept 2007

Gyrodon merulioides — Ash Bolete
About 7 cm diameter; on ground in Ash Woodlot

23 July 2007

Gyrodon merulioides

3 Oct 2006

Suillus americanus? — White Pine Bolete?
About 12 and 7 cm; northwest corner of Ash Woodlot

Jan 2007

Unknown; found at northwest corner of Ash Woodlot; 8-10 cm diam.

Gill fungi

Classification depends on spore colour, among other things.

23 Sept 2006

23 Sept 2006

Stropharia aeruginosa? — Verdigris mushroom
4.5 cm diam., up to 10 cm tall; ground under pines; Ash Woodlot

30 Sept 2006


23 Sept 2006


30 Sept 2006


30 Sept 2006


30 Sept 2006


30 Sept 2006


30 Sept 2006


30 Sept 2006


30 Sept 2006

Coprinus comatus — Shaggy Mane


23 Sept 2006


23 Sept 2006


30 Sept 2006


5 Oct 2006

1-2 cm diam., about 7 cm tall; base of Spruce tree; Ash Woodlot


3 Oct 2006


3 Oct 2006

Hypsizygus ulmarius? — Elm


16 Oct 2006

Same as at left, but 2 weeks later

Oyster?
3-10 cm diam., spores white, gills very deep and completely detached from stem, cap thin; on grafted elm


3 Oct 2006
10 cm diameter; under White Snakeroot in Ash Woodlot


5 Oct 2006


5 Oct 2006
10 cm diam., very soft, disintegrated when spore print tried; under spruce; Ash Woodlot


16 Oct 2006
Clitocybe nuda? — Blewit? 7-12 cm diam., spores pale peach, large "root"; on ground under spruce trees; northwest corner of Ash Woodlot


30 Sept 2006
Schizophyllum commune — Split Gill Fungus


30 Sept 2006
Schizophyllum commune — Split Gill Fungus


11 Nov 2007
Grey mushrooms
1-4 cm; on ground under pines; growing close together


11 Sept 2007
Amanita muscaria — Fly Agaric
8-9 cm; on ground under pines and birches


11 Sept 2007
Mycena sp.
About 2 mm; on oaks in Ash Woodlot

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- Smith JE, Rowan NJ, Sullivan R. 2006. **Medicinal mushrooms: their therapeutic properties and current medical usage with special emphasis on cancer treatments**. Cancer Research UK.

MORE ABOUT FUNGI

- **George Barron's Website on Fungi**. See also George Barron's book, *Mushrooms of Ontario and Eastern Canada*, Lone Pine Publishing, 1999.
- **MushroomExpert.com**
- **Roger's Mushrooms**, United Kingdom
- **The fascinating world of fungi**. Offwell Woodland & Wildlife Trust, UK.

This page was revised 7 December 2007

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Our e-mail address
