

Issue 15
July 2011



NIEG NEWS



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NIFG NEWS 2011

Hi Folks!

Another topsy-turvy year weatherwise! Early drought has been replaced by very mixed weather and in the west in particular, large volumes of rain. It is probably too early yet to predict how this is going to affect the appearance of fungi in 2011.

However, last winter was so cold and April so dry that one can hope for a good season. The theory behind this is that extreme weather stresses fungi, like everything (and everyone) else, and this pushes them to form more fruiting bodies i.e. a good year for foraging.

Our first summer foray at Roe Park, was a little slow, though there were plenty of tiny developing fungi indicating a better show later, so maybe another good year!

Fungi, as nearly always, feature from time to time in daily papers, but usually for the wrong reasons. Recent editions have majored on a kidney transplant for Norman Evans, a major author, who fed himself, and four members of his family a platter of webcap fungi, probably the deadly webcap *Cortinarius speciosissimus*, but

the exact species wasn't given. This species has been recorded recently in N. Ireland but details aren't given on the website.

On an other matter, has anyone noticed the sheer number of cypress hedges and trees with red-brown dead parts recently? This appears to be due to a radical increase in the fungal disease *Seiridium* or Coryne canker. Has the noble Castlewellan Gold and other varieties of the 'battling neighbours' tree met its match at last? [For a small consideration I can let interested readers into the secrets of infection or how to enhance the spread of this pathogen—no!, only joking!].

Hon. Editor

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Chairman's Report 2011

Hi NIFG Members.

Another year has arrived and already finds are popping up in gardens, parks and forests. It is great to see so many still so keen after all these years and that the enthusiasm is not fading. Again last year we had some new faces who have returned this year and as always we welcome you all along.

I must admit that, personally, last year without Gerry Shannon's remarks, comments and stories of past forays and finds, it did seem like a part of the group was missing..

This year, we have a good variety of sites which should make for interesting forays and with any luck get us a few more new species for Ireland and UK.

Progress on the BMS Big Foray in 2012 is slow at the moment as finding a suitable location for accommodation is difficult for so many but fingers crossed this will be a great event for NIFG to be taking part in..

On a final note I just want to thank you all for braving the weather, getting soaked to the bone, climbing through the forests and undergrowth to collect specimens, going home

covered in a good proportion of mud and dirt, doing your own personal studying and teaching yourselves about Fungi in your own time and showing everyone what a great little group we are..

Debbie
NIFG Chairperson

DISCLAIMER

The contents of NIFG NEWS are as accurate as can be achieved within the constraints of a small newsletter. The editorial staff take no responsibility for views expressed about the edibility or otherwise of fungi described by contributors. Edibility is a relative term and what may suit one person may react badly with another. The identification of fungi for consumption is entirely the responsibility of the individual reader. Guidance given in these pages is not definitive and regardless of the degree of expertise available, infers no guarantee of edibility. Therefore the management accept no responsibility for the consumption of fungal fruiting bodies based on information presented here, whatever the advice or ultimate consequences.

Member's photos 2010



Arcyria demudata



Dumontinia [Heidi]



Coprinus micaceus



Camphrellus lutescens



Psilocybe fimetaria, Clandeboye



Matthew with *Boletus luridiformis*



Bulgaria inquinans



Killegar House; residential

Foray and other finds 2010/11

Foray Records

2010 began with a foray to Straidkilly NNR on the Antrim coast, on 5 May. Spring forays are usually lacklustre but on this occasion several interesting fungi turned up, including the anemone cup *Dumontinia* and a morel, *Verpa conica*. The former was abundant in several spots and the latter by a clearing, under bordering shrubs.



Hollymount NNR near Downpatrick was visited on 24 July and although fungal fruiting bodies were abundant, most were of common species. Several cup fungi caught the eye, including *Otidea onotica* which



had fresh fruiting masses under lime by the path, and *Peziza depressa* and *P. micopus*, the former under lime, the latter on dead beech wood. The very local oak wood wart was found on fallen oak trunks near the end of the path.

On 7 August Prehen Wood in derry was visited. This is quite a small area but yielded a couple of baskets of chanterelle, the first good collection for quite some time. Russulas of various kinds were present in abundance: *aeruginea*, *nitida*, *versicolor* (birch); *fragilis*, *grisea*, *nobilis*, *violeipes* (beech).



Russula versicolor has no previous record on club forays and *violeipes* is rarely seen.

Kilbroney Park at Rostrevor was visited on 21 August. Roy managed to get stung in the mouth by mis-

taking a foraging wasp for lunch! It was otherwise a quiet day and Roy survived, but painfully. Pickings in the mainly coniferous woods were sparse but *Asterophora parasitica* was common on larger decaying *Lactarius* by the path. *Russula integra* was found with some good ceps under spruce and several small *Phaeolus schweinitzii* were discovered on spruce roots by the path.



A visit to Peatlands Park on 4 September bagged a very large haul of *Lactarius* including: *blennius*, *deliciosus*, *rufus*, *syringinus*, *tabidus*, *torminosus*, *turpis*. It later transpired that the large, purplish 'syringinus' was in fact *Lactarius trivialis*, apparently an easy mistake to make.





Next up was Clondeboye Estate on 2 October, a joint meeting with Belfast Naturalists' Field Club. This was one of the highlights of the year and a great variety of interesting fungi were encountered. New to Ireland were: *Byssonectria terrestris* on deer dung etc.; *Cudonia confusa* in soil and litter under ornamental holly. Both are Ascomycetes with *B. terrestris* not on FRDBI and probably un-recorded in the British Isles. It occurs in association with deer latrines in Scandinavia and North America.



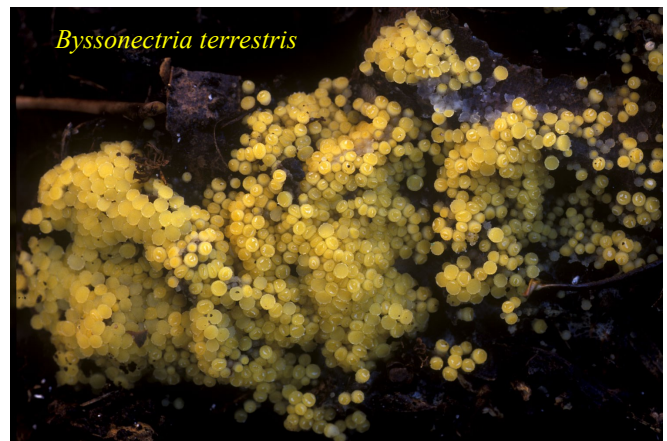
Cudonia confusa is a very rare cup fungus which looks just like *Laccaria laccata* but has no true gills when you peer under the 'cap'.

Among the Russulas *R. exalbicans* under birch by the lake and *R. vinosopurpurea* under beech were notable. *Russula vinosopurpurea* has only previously been recorded in Ireland, from Co. Fermanagh, during the Millenium visit by the Mycological Society (2000). It is very rare in Britain also. Also new to Ireland were *Psilocybe fimetaria* found on rabbit



dung, with *Tricholoma arvernense* new to N. Ireland, under beech. A small thicket of the NI Priority Species, *Trichoglossum walteri* was found in

the garden of Clondeboye House. The grand total for the visit was 97 species.



The 2010 Residential was held at a Buddhist Retreat in Co. Leitrim on 22-23 October but the foraging was done in Killegar Demesne Co. Cavan and at Killykeen Forest Park on the River Erne. Both venues produced interesting finds. The Retreat was nothing if not unusual but we didn't lose any members either to frostbite or to the appeal of karmic meditation.

At Killegar we were treated by Lady Sue Godley to a tour of her residence and morning coffee. The estate was explored and produced three new Irish records, all Ascomycetes (as usual!). Roy Anderson was pleased to find, at last, the eyelash fungus *Scutellinia setosa* on fallen poplar timber. As it turns out, this tiny species is not so much rare in Ireland, as overlooked. The other additions were *Calycellina ochracea* on beech cupules and *Hypomyces spadicca* on mummified *Lactarius torminosus*. Mummification of *Lactarius* and other fleshy fungi is something to look out for as there is a range of under-recorded ascomycetes parasitising them.

The big find at Killykeen Forest was a large number of the birds' nest fungus *Cyathus striatus* in litter under birch. Everyone was taken by this picturesque species and its discovery made the day.



Scutellinia setosa



Cyathus striatus

Ireland, an alder woodwart *Hypoxylon fuscoides* Fournier, Leroy, Stadler & Anderson, on grey alder at various sites in N. Ireland and one in Germany.

were recorded, which must be a record for an early season foray. *Gymnopus ocior* (formerly *Collybia ocior*) was found in some abundance

The last but one foray was to Mount Stewart in Co. Down, on 6 November. It was a pleasantly dry, sunny day which yielded a lot of fruit-bodies but few real rarities. Among the nicer finds were *Cortinarius cinnamomeus* under pine and *Russula solaris* under oak. Attendees were also pleased to find large numbers of *Mutinus caninus* in litter under holm oak.

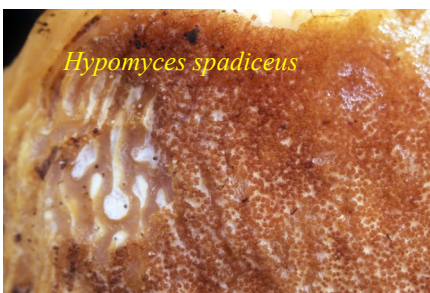
The final foray was on a chilly 20 November, to Slemish Mountain in Antrim. Very little was seen here, except for several specimens of *Cantharellus friesii*, under hawthorn and new



Mutinus caninus



Xylaria cinerea



Hypomyces spadiceus

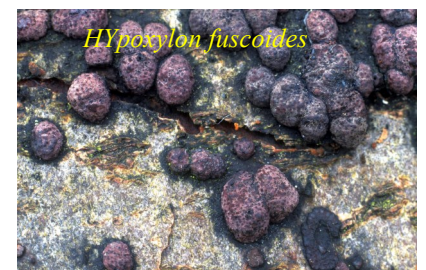
at one spot under beech, and is a new Irish record. It is spring fruiting and resembles *Gymnopus dryophilus*. The long list was partly due to Chris whose new-found passion for ascos resulted in a lot of records from dead herbs, nettles etc.

Other finds of the year included the ascomycete *Xylaria cinerea*,



Cantharellus friesii

Fournier & Stadler, recently described from France, found on gorse at Sandy Cove near Kinsale. Also a new species from



Hypoxylon fuscoides

to Ireland. Members drove on to Knockdhu Hill carpark in east Antrim and much better fare was found there, including 11 *Hygrocybe* spp., with a single cap of the rare *H. ovina*.

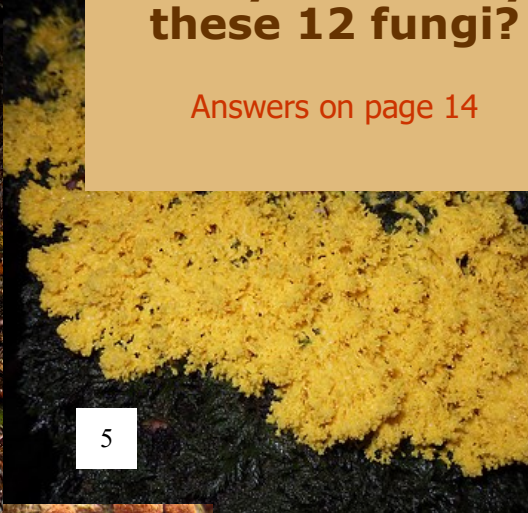
2011 started with a modest bang, with the spring outing to Rash Estate near Omagh (28 May). A total of 57 species

Fungi Picture Quiz



Can you identify these 12 fungi?

Answers on page 14



Fungal Miscellany

'SpongeBob' Mushroom *Spongiforma squarepantsii* discovered in the Forests of Borneo [Science daily, June 2011]

Its discovery in the forests of Borneo, says San Francisco State University researcher Dennis Desjardin, suggests that even some of the most charismatic characters in the fungal kingdom are yet to be identified.

Shaped like a sea sponge, *S. squarepantsii* was found in 2010 in the Lambir Hills in Sarawak, Malaysia. It is bright orange -- although it can turn purple when sprinkled with a strong chemical base -- and smells "vaguely fruity or strongly musty," according to Desjardin and colleagues' description published in the journal *Mycologia*.

Under a scanning electron microscope, the spore-producing area of the fungus looks like a seafloor carpeted in tube sponges, which further convinced the researchers to name their find after the famous Bob.

The new species is only one of two species in the *Spongiforma* genus. The



other species is found in central Thailand, and differs in color and odor. But close examination of the fungi and genetic analysis revealed that the two were relatives living thousands of miles apart.

"We expect that it has a wider range than these two areas," said Desjardin, a professor in ecology and evolution in the SFSU Biology Department. "But perhaps we haven't seen it in more places because we haven't collected it yet in some of the underexplored forests of the region."

Desjardin said *Spongiforma* are related to a group of mushrooms that includes the tasty porcini. But the genus sports an unusual look that is far from the expected cap and stem style.

"It's just like a sponge with these big hollow holes," he explained. "When it's wet and moist and fresh, you can wring water out of it and it will spring back to its original size. Most mushrooms don't do that."

Spongiforma's ancestors had a cap and stem, but these characters have been lost over time -- a common occurrence in fungi, Desjardin noted.

The cap and stem design is an elegant evolutionary solution to a fungal problem. The stem lifts the fungus' reproductive spores off the ground so that they can be dispersed more easily by wind and passing animals, while the cap protects the spores from drying out in their lofty



but exposed position.

In its humid home, *Spongiforma* has taken a different approach to keeping its spores wet. "It's become gelatinous or rubbery," Desjardin said. "Its adaptation is to revive very quickly if it dries out, by absorbing very small amounts of moisture from the air."

S. squarepantsii now has another claim to fame: It joins the five percent of species in the vast and diverse Kingdom Fungi that have been formally named. Researchers estimate that there may be anywhere from 1.5 to 3 million fungal species. "Most of these are very cryptic, molds and little things, most of them are not mushrooms," Desjardin said. But even mushrooms -- which are sort of like the big game of the fungal world -- are mostly unknown.

"We go to underexplored forests around the world, and we spend months at a time collecting all the mushrooms and focusing on various groups," Desjardin said. "And when

we do that type of work, on average, anywhere from 25 percent to 30 percent of the species are new to science."

Desjardin and his colleague Don Hemmes of the University of Hawaii at Hilo will describe five new white-spored species of mushrooms from the native mountain forests of Hawaii in an upcoming issue of *Mycologia*.

The Hawaiian species are among the diverse set of organisms found on the islands and nowhere else in the world. Desjardin and his colleagues are racing to discover and study the islands' fungi before native forests succumb to agriculture and grazing.

"We don't know what's there, and that keeps us from truly understanding how these habitats function," Desjardin said. "But we think that all this diversity is necessary to make the forests work the way they're supposed to work."

Sing it with us: What lives in the rainforest, under a tree? *Spongiforma squarepantsii*, a new species of mushroom almost as strange as its cartoon namesake.

Fungus Among Us Could Become Non-Food Source for Biodiesel Production

In the quest for alternatives to soybeans, palm, and other edible oilseed plants as sources for bio-diesel production, enter an unlikely new candidate: A fungus, or mold, that produces and soaks away large amounts of oils that are suitable for low-cost, eco-friendly biodiesel.

That's the topic of a study in ACS' journal *Energy & Fuels*.

Victoriano Garre and colleagues point out that manufacturers usually produce biodiesel fuel from plant oils -- such as rapeseed, palm, and soy. However, expanded production from those sources could foster shortages that mean rising food prices. In addition, oilseeds require scarce farmland, and costly fertilizers and pesticides. To meet growing demand for biodiesel fuel, scientists are looking for oil sources other than plants. Microorganisms such as fungi, which take little space to grow, are

Fungal Miscellany (contd.)

ideal candidates. But scientists first must find fungi that produce larger amounts of oil.

In the study, scientists describe a process for converting oil from an abundant producer called *Mucor circinelloides* into biodiesel without even extracting oil from the growth cultures. The resulting fungus-based biodiesel meets commercial specifications in the United States and Europe and production could be scaled to commercial levels, they note.

The Whiskey Fungus

The air outside a distillery warehouse smells like witch hazel and spices, with notes of candied fruit and vanilla—warm and tangy- mellow. It's the aroma of fresh cookies cooling in the kitchen while a fancy cocktail party gets out of hand in the living room.

James Scott encountered that scent for the first time a decade ago in a town called Lakeshore, Ontario. Just across the river from Detroit, Lakeshore is where barrels of Canadian Club whiskey age in blocky, windowless warehouses. Scott, who had recently completed his PhD in mycology at the University of Toronto, had launched a business called Sporometrics. Run out of his apartment, it was a sort of consulting detective agency for companies that needed help dealing with weird fungal infestations. The first call he got after putting up his website was from a director of research at Hiram Walker Distillery named David Doyle.

Doyle had a problem. In the neighbourhood surrounding his Lakeshore warehouses, homeowners were complaining about a mysterious black mold coating their houses. And the residents, following their noses, blamed the whiskey. Doyle wanted to know what the mold was and whether it was the company's fault. Scott headed up to Lakeshore to take a look. When he arrived at the warehouse, the first thing he noticed (after "the beautiful, sweet, mellow smell of aging Canadian whiskey," he says) was the black stuff. It was everywhere—on the walls of buildings, on chain-link fences, on metal street signs, as if a battalion of Dickensian chimney sweeps had careened through town.

"In the back of the property, there was an old stainless steel fermenter tank," Scott says. "It was lying on its side, and it had this fungus growing all over it. Stainless steel!" The whole point of stainless steel is that things don't grow on it.

Standing at a black-stained fence, Doyle explained that the distillery had been trying to solve the mystery for more than a decade. Mycologists at the University of Windsor were stumped. A team from the Scotch Whisky Association's Research Institute had taken samples and concluded it was just a thick layer of normal environmental fungi: *Aspergillus*, *Exophiala*, stuff like that. Ubiquitous and—maybe most important—in no way the distillery's fault.

Scott shook his head. "David," he



said, "that's not what it is. It's something completely different."

Leave fruit juice on its own for a few days or weeks and yeast—a type of fungus—will appear as if by magic. In one of nature's great miracles, yeast eats sugar and excretes carbon dioxide and ethanol, the chemical that makes booze boozy. That's fermentation.

If fermentation is a miracle of nature, then distillation is a miracle of science. Heat a fermented liquid and the lighter, more volatile chemical components—alcohols, ketones, esters, and so on—evaporate and separate from the heavier ones (like water). That vapour, cooled and condensed into a liquid, is a spirit. Do it to wine, you get brandy; beer, you get whiskey. Distill anything enough times and you get vodka. When it's executed right, the process concentrates a remarkable array of aromatic and flavourful chemicals.

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ScienceDaily (Sep. 17, 2010)

In the quest for alternatives to soybeans, palm, and other edible oilseed plants as sources for biodiesel production, enter an unlikely new candidate: A fungus, or mold, that produces and socks away large amounts of oils that are suitable for low-cost, eco-friendly biodiesel.

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Fungi Reduce Need for Fertilizer in Agriculture

ScienceDaily (May 26, 2011)

The next agricultural revolution may be sparked by fungi, helping to greatly increase food-production for the growing needs of the planet without the need for massive amounts of fertilizers according to research presented May 23 at the 111th General Meeting of the American Society for Microbiology in New Orleans.

"The United Nations conservatively estimates that by the year 2050 the global human population is expected to reach over 9 billion. Feeding such a

Fungal Miscellany (contd.)

population represents an unprecedented challenge since this goes greatly beyond current global food production capacity," says Ian Sanders of the University of Lusanne, Switzerland, speaking in a session entitled "How Microbes Can Help Feed the World." Sanders studies mycorrhizal fungi, a type of fungus that live in symbiosis with plant roots. When plants make symbioses with these fungi they tend to grow larger because the fungi acquire the essential nutrient phosphate for the plant. Phosphate is a key component of the fertilizers that fueled the Green Revolution in middle of the 20th century that made it possible then for agriculture to keep up with the growing global population.

"In most tropical soils plants have enormous difficulty in obtaining phosphate and so farmers have to spend a huge amount of money on phosphate fertilizer. Farmers have to add much more fertilizer than in temperate regions and a very large amount of the cost to produce food is the cost of phosphate," says Sanders.

Phosphate reserves are being rapidly depleted. Increasing demand for the nutrient is driving up prices and some countries are now stockpiling phosphate to feed their populations in the future, according to Sanders.

While mycorrhizal fungi typically only grow on the roots of plants, recent biotechnological breakthroughs now allow scientists to produce massive quantities of the fungus that can be suspended in high concentrations in a gel for easy transportation.

Sanders and his colleagues are currently testing the effectiveness of this gel on crops in the country of Colombia where they have discovered that with the gel they can produce the same yield of potato crop with less than half the amount of phosphate fertilizers.

"While our applied research is focused on Colombia it could be applied in many other tropical regions of the world," says Sanders.

I can breathe!

Student from Dublin with fungus on her lungs has double transplant in world first

A young woman is able to breathe freely again after a world-first opera-

tion to cure her lung condition.

Becky Jones, 20, is the first person to have a lung transplant while suffering from two fungal conditions that left her housebound. Now out of intensive care following surgery, Becky said: 'I can't, for the life of me, remember feeling so well. The world is officially my oyster!'

She was airlifted from her home in Dublin, Ireland, for the groundbreaking treatment by world leading experts at University Hospital of South Manchester (UHSM) in Wythenshawe.

Ms Jones made history twice by being the first patient to have a lung transplant while suffering from multi-resistant *Aspergillus*, a common airborne fungus, and multiple fungal balls in her old lungs.

Lung transplant patients have never before been able to have the operation while suffering from either of these conditions.

Aspergillus is a large number of diseases involving both infection and growth of fungus as well as allergic responses. It is estimated to affect around 150,000 people in the UK.

The condition had left Ms Jones virtually house bound, unable to walk properly, climb stairs or go out with friends.

She had been on the waiting list for over a year and was accepted for



transplant only because the hospital at Wythenshawe also houses the National Aspergillosis Centre, which specialises in treating the condition.

She underwent the historic operation on May 29 and just 18 days later is out of intensive care, tucking into her food and making plans for a future.

'Words simply cannot begin to describe the pure relief I feel,' Ms Jones said.

'The chains have been lifted; I can breathe! I can't, for the life of me, remember feeling so well!

'I now plan to travel and study fashion design at college.'

Reishi mushrooms benefit people stricken with a variety of ailments, from high blood pressure to AIDS

Hailed in ancient Eastern medicine as the "mushroom of immortality" and the "medicine of kings," you'd expect reishi to offer you some pretty astounding health benefits, right? Your assumptions are correct. This prized fungus may be able to boost your immune system, fight cancer, ward off heart disease, calm your nerves and relieve both allergies and inflammation.

"Reishi indeed sounds like a cure-all," writes Rebecca Wood in her book "New Whole Foods Encyclopedia." She goes on to explain reishi's wide range of uses: "An immunostimulant, it is helpful for people with AIDS, leaky-gut syndrome, Epstein-Barr, chronic bronchitis and other infectious diseases. It is used as an aid to sleep, as a diuretic, as a laxative and to lower cholesterol." It almost seems too good to be true.

How can one fungus help the human body in so many ways? Traditional Eastern medical science explains reishi's wide range of medicinal applications better, perhaps, than mainstream medicine ever could. According to Eastern thought, the body needs to defend itself against threats to its "equilibrium." These threats can be physical, such as viruses and bacteria that cause infection; emotional, such as stressors that cause anxiety; or energetic, in that they reduce alertness. Whatever the threat, reishi helps the body maintain its defense against these threats to its equilibrium, helping the body to maintain balance. In this sense, diseases like heart disease and cancer mean that the body is out of balance, which is why an equilibrium-enhancing remedy such as reishi can help so many diverse ailments.

Skeptics can doubt the previous explanation as Taoist "mumbo jumbo," but laboratory research proves many of

Fungal Miscellany (contd.)

reishi's medicinal applications. As Dr. Andrew Weil writes, reishi "has been the subject of a surprising amount of [scientific research](#) in Asia and the West." Research shows that the polysaccharide beta-1,3-D-glucan in reishi boosts the [immune system](#) by raising the amount of macrophages T-cells, which has major implications for people suffering from AIDS and other immune system [disorders](#).

This immune-boosting action also works wonders in the [prevention](#) and treatment of [cancer](#), as the T-cells are then able to fight [cancer cells](#) more effectively. However, reishi may help the body defeat cancer in not just one, but four ways. In addition to boosting the immune system, the glucan in reishi helps immune cells bind to [tumor cells](#). Many experts believe that it also actually reduces the number of cancerous cells, making it easier for T-cells and macrophages to rid the body of them. Another substance in reishi, called canthaxanthin, slows down the growth of [tumors](#), according to "Prescription for Dietary Wellness" author Phyllis A. Balch and other [experts](#). As a result of these amazing anti-cancer abilities, laboratory research and traditional medicinal usage of reishi to fight cancer is so positive that the Japanese [government](#) officially recognizes it as a [cancer treatment](#). Besides cancer, reishi can help and treat another of America's top killers: [cardiovascular disease](#). The protection reishi offers against heart [disease](#) and stroke is truly remarkable because it helps prevent so many different [risk](#) factors, due to its high content of heart-saving substances like sterols, ganoderic acids, coumarin, mannitol and [polysaccharides](#). Experts believe that the ganoderic acids in particular lower triglyceride levels, remove excess [cholesterol](#) from the blood, lower [blood pressure](#), reduce platelet stickiness and even help correct [arrhythmia](#). In fact, for 54 people with hypertension unresponsive to [medication](#), taking reishi extract three times a day for four weeks was enough to significantly lower [blood](#) pressure, according to a study reported by Burton Goldberg in "Heart Disease." Just imagine how the incidence of [cardiovascular](#) disease could be reduced if using reishi really caught on in the Western hemisphere.

While you protect your body against [infectious disease](#), cancer and heart disease, your use of reishi can also

help relieve your everyday discomforts. Do you have [allergies](#)? Japanese researchers discovered that the lanostan in reishi acts as a [natural](#) antihistamine. Do you suffer from muscle aches or [arthritis](#)? Dr. William B. Stavinhoa of the University of [Texas](#) Health Science Center found that reishi is as powerful as five milligrams of hydrocortisone, but with minimal [side effects](#). What about anxiety or [insomnia](#)? According to "Mind Boosters" by Dr. Ray Sahelia, the reishi mushroom can calm the mind, as well as improve memory, concentration and focus. With all these [benefits](#), reishi truly is the "medicine of kings."

Different types of reishi

Though there are six different types of reishi, all classified by [color](#), herbalists generally call red reishi the most



potent and medicinal variety, and thus it is the most commonly used form of reishi in North [America](#), Japan, China, Taiwan and Korea. In the wild, the mushroom grows on deciduous [trees](#) in heavily forested areas of China and [Japan](#), but it's now easily and widely cultivated commercially, so you don't have to venture into the forest to enjoy the benefits of what "Herbal Medicine-Maker's Handbook" author James Green calls a "remarkably beneficial [fungus](#) for the human body."

However, keep in mind that reishi isn't exactly the kind of mushroom you'll want to put in your next salad, either. Since it's more than 90 percent indigestible [fiber](#), reishi has an extremely wood-like texture and to top it off, it's unpleasantly bitter. In spite of this bitter flavor, many reishi enthusiasts use ground reishi to make a life-enhancing tea or even use the [mushrooms](#) in soups. For the less daring, many [health food stores](#) offer reishi capsules, tablets and extracts, and Japanese research suggests taking vitamin C along with it may enhance reishi's medicinal effects.

So, how much reishi should you take? Dr. Linda B. White recommends up to three 1,000-milligram tablets up to three times per day in her book "The Herbal Drugstore." You should be aware that reishi does have some side effects, including abdominal upset, dizziness, nose bleeds and dry mouth and throat, according to "Natural Pharmacy" author Schuyler W. Linger. In other words, it's up to you and your naturopath to decide which dose of reishi is right for you.

[PS. Known here as *Ganoderma lucidum*—not recorded from Ireland but in southern half of Britain & NE Scotland.

Conservation news, articles

YEAST FEAST

[or, what do we mean by 'yeast'?]

The very interesting report in last year's Newsletter about *Cryptococcus gattii* calls for amplification and clarification about yeasts. For starters, the micrograph is not, per se, of *C. gattii* but of *Filobasidiella bacillistospora*, its (sexual phase) teleomorph <www.mycology.adelaide.edu.au/Fungal_Descriptions/Yeasts/Cryptococcus/C_gattii.html>. Although the term 'yeast' in general parlance has become the common name for ascomycete forms, particularly *Saccharomyces cerevisiae* — brewers yeast and the microbial 'mouse' of genetics and experimental microbiology — the term also includes a number of superficially similar forms in the basidiomycetes.

Most of the genera in the Ascomycetes, including such other familiar genera as *Candida*, *Blastomyces* and *Histoplasma*, are budding yeasts meaning that new (daughter) cells are formed in a manner that can be visualised as inflating the ears on a Mickey Mouse balloon: A small hole forms in the homogeneous parent wall, the cell's plasma membrane pushes out, like an arterial embolism, and the duplicated cell contents, including a daughter nucleus, ooze into the bud which as it inflates develops a new cell wall; at maturation a septum partitions the cells and the daughter is freed to repeat the growth cycle. The number of daughter cells is limited by the accumulation of bud scars on the parent cell. Sexual development sees meiotic (reduction) division of the (diploid) nucleus to produce four or eight daughter nuclei followed by their encapsulation within new cell walls to become ascospores.

The fission yeasts whose box-car or brick-shaped cells divide cross ways (like cutting a sausage in half) are also ascomycete yeasts but much less well known. *Schizosaccharomyces pombe* is the most noted species and, weirdly, is placed by current molecular systematics in the *Taphrinomycetes* [2], making it a very strange bed-fellow of the dimorphic *Taphrina/Lalaria* leaf-curl complex. It has been extensively studied by Paul Nurse for which enterprise he received a Nobel Prize, was knighted, and made an Honorary member of the BMS. The fission yeasts also, of

course, produce endogenous ascospores.

The basidiomycetes, like the ascomycetes, accommodate a large number of yeast genera and species and like the ascomycete forms their taxonomy — characterisation, identification, and classification — is arrived at by a battery of physiological and biochemical tests, but, microscopically, they are easily distinguished by their multilayered cell walls, hyphae with dolipore/parenthosome septa (ascomycetes have simple perforate septa with accompanying Woronin bodies), and a very distinctive and critically different mode of cell division [3]. Daughter cells are produced acropetally, that is, iteratively from one end of the parent cell on a broad



base; the indeterminate number of successive daughter cells leaves a distinctive frayed collar around the budding site. Another distinction is that the nucleus from the parent cell enters the bud where it divides and then a daughter nucleus re-enters the parent cell. The union of two cells of opposite mating type (+/-) initiates hyphal formation and the start of the sexual, teleomorphic, basidiospore producing phase, such as that of *Filobasidiella bacillistospora* (above). Closely related is *Filobasidium neoformans* /*Cryptococcus neoformans*, also a human pathogen <www.mycology.adelaide.edu.au/Fungal_Descriptions/Yeasts/Cryptococcus/C_neoformans.html>.

Cryptococcus is a very large genus and its teleomorphs, mostly cryptic, include those of the many *Tremella* spp. According to Roberts [4]: "... in Britain we have over thirty [*Tremella*] species parasitizing other jelly fungi, corticioid fungi, polypores, pyrenomycetes, and lichens"; the Wikipedia account [8] provides a comprehensive list of 109 worldwide *Tremella* spp. with their respective type localities and hosts; Fenwick [1] describes the culturing of *Tremella mesenter-*

ica. Roberts in his series of papers describes and illustrates with drawings 14 British species: five conspicuous [4, 5] that are also accompanied by colour photograph; five interhymenial species of corticioid fungi [6]; and [7] three interhymenial species of *Dacrymyces* and one, probably common and widespread, parasitic in the hymenium of various poroid *Postia* spp.

Readers interested in a more fullsome and technical analysis of this corner of mycology are directed to the Wikipedia account [8] of the *Tremella* complex and its references which are linked to online copies; recent, comprehensive biosystematic reviews will be found in its references 5, 6 and 7.

REFERENCES

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- [3] Moore, R. T. 1998. Cytology and ultrastructure. In C. P. Kurtzman & J. Fell (Eds.). *The Yeasts, a Taxonomic Study*. Ed. 4, pp. 33-48. Amsterdam: Elsevier. ISBN 0-444-81312-8
- [4] Roberts, P. 1995. British *Tremella* species I. *T. aurantia* & *T. mesenterica*. *Mycologist* **9**: 110-114.
- [5] Roberts, P. 1999. British *Tremella* species II. *T. encephala*, *T. stedleri*, & *T. foliaceae*. *Mycologist* **13**: 127-131.
- [6] Roberts, P. 2001. British *Tremella* species III: *Tremella callunicola* sp. nov., *T. invasa*, *T. sarniensis* sp. nov., *T. simplex* & *T. versicolor*. *Mycologist* **15**: 146-150.
- [7] Roberts, P. 2007. British *Tremella* species IV: *Tremella obscura*, *T. penetrans*, *T. giraffa* & *T. polyporina*. *Field Mycology* **8**: 127-133.
- [8] *Tremella* <<http://en.wikipedia.org/wiki/Tremella>>.

Roy Moore

FORAY PROGRAMME 2011

Foray layout:

A days foraying begins, for those wanting a full day, at 11am at the designated meeting point. Returning to the car park for lunch between 12.30 & 1pm. Then foraying again from 1 – 4pm. You are welcome to join at either of these starting times.

1. We recommend highly that you WEAR SUITABLE OUTDOOR CLOTHING.. that is sensible footwear (high heels or sandals are not recommended). Trainers, wellies or waterproof walking boots are a must for some sites. Please bring a raincoat and/or waterproof bottoms. It can suddenly start raining and you'll regret not having some form of waterproofs with you. If you don't need them at least you've come prepared.

2. Some sites may be hilly! Please do check the sites before you plan to come along. We have tried to give you as much detail regarding the site ie grid ref and O.S. map no's so you can find them and check the terrain on your maps. If you need more advice please contact us. It can be off putting if you arrive to find a mountain site and you are unable to cope physically with it.

3. If you are planning on spending the whole day with the group do bring a packed lunch as some venues are 'out of the way' and may not have shops nearby.

4. If you are wishing to collect a few specimens to take home and identify yourself bring a collection container of basket (mushroom boxes from your local green grocers are good! And you are recycling which is good for the environment too!!!). Craft tubs or small plastic tool boxes from

your local hardware shop are good as they have handles as well and are relatively cheap.

5. A small guide book is also recommended. These can be obtained from any local bookstore. The Collins Field Guides are very good but will only have the very commonly found species in them. This is good for beginners and helps you establish which ones you may come across on a regular basis. Once you feel more confident you can invest in more advanced books.

Apart from those main points the day is pretty relaxed. Join in, make friends and have fun and learn a bit about our environment and habitats while your there.

[PLEASE NOTE - Space is limited and it has not been possible to reproduce the site maps in the Newsletter— please consult the maps, if needed, at www.nifg.org.uk]

28 May 2011

Rash Farm, Omagh. .

OS map No. 12. H434758

On the way out of Omagh towards Newtownstewart one crosses the bridge over the Fairy Water just past the old site of the Nestles factory. After the Fairy Water Bridge, it's the first entrance on the right. The entrance looks pretty ordinary then there's a very long drive to the house. You drive past the parent's house with the stone lions on the door step and swing round

the back to the left into the very muddy farm yard. There's a great kitted out beaters shed for lunch.

16 July 2011

Roe Valley Country Park, OS map No.4 4 C670210.

From Belfast, take M2 North. Follow for Londonderry. At Dungiven take right, sign-posted for Limavady and Roe Valley Forest Park. Situated 1mile south of Limavady on the B192.

6 August 2011

Ballinrees Reservoir. OS map No. 4 C795300

Coming from Coleraine, the car park is on the left hand side of Windy Hall ['Murder Hole'] Road, B201, exactly 3 miles from the roundabout where Greenhall Highway crosses Carthill Road. (Go beyond the main gated entrance to Ballinrees Reservoir.)"

20 August 2011

Gosford Forest Park.

OS map No. 19, JH965405
Follow M1 to Armagh. Once in Armagh follow directions for the A28 to Markethill. This is the Gosford road. You will see signs for the entrance to Gosford Forest.

27 August 2011

Loughermore Forest, Co. Derry.

OS map. No. 7 C584125
Travel up the M2 towards

Londonderry and onto the A6. From Londonderry follow A6 to Claudy. If travelling from Claudy, take the B69 (Baranait Road) towards Limavady. Continue driving until a mature forest on your right hand side, car park is on left after the next bridge.

**4 September 2011
Carnfunnock Park**

(not part of the main group timetabled forays.)

OS Map No. 9 D385068

Group asked to guide walk. Chairperson will guide the walk. Members are welcome to attend. Follow M2 to Templepatrick. Take slip road and take right for Larne. Follow to town. Follow Coast Road to Glenarm. Pass Drains Bay and see Carnfunnock entrance on your left.

**17 September 2011
Tollymore Forest Park**

O.S. Map. No. 29 J346325

From West/South. From Newry follow Signs for Newcastle. From North/Belfast, follow Knock Carriageway to Carryduff Road (situated at Forestside Shopping Centre. Follow all signs for Newcastle. When in Newcastle Tollymore is well signposted.

**24 September 2011
Springhill (NT) Estate**

O.S. Map no. 14 H866827

From East/North: Follow Coleraine: take A37 then A29 to Maghera, Follow A6 to Castledawson R'bout.* Take A31 to Maghera-felt. Stay on A31 to Moneymore. take B18 Loup Rod. At fork take R onto Springhill road. Follow to Estate. From Belfast: M2 to Castledawson R'bout and follow as above*.

1 October 2011

Montgomery Estate

O.S. Map no. 14 H8666827

From North/East/South: Follow to Belfast. Follow directions for Newtownards. Once in Newtownards follow signs for Portaferry A20. Follow to Greyabbey. Follow to the mini r'bout in Greyabbey. Take Right for Portaferry. Follow to Estate entrance on LHS.

8 October 2011

Hillsborough Castle

O.S. Map No. 20 J251575

South/West, Follow to the M, take slip rd for Hillsborough. and follow to Hillsborough roundabout. From South follow A1 to H'brgh. North: Follow M2 to Belfast and take M1 South to H'brgh. After Lisburn take turn off motorway for South A1. Follow to H'brgh. Take slip rd into main village. Follow road through the town B177 bearing right. Follow to the top of the hill and see the courthouse in front of you. 'Your folk can park outside our main gates in the forecourt - that's just behind the old Court House.'

**22nd -23rd October; Residential
TBA**

5th November 2011

Lissan House.

O.S. Map No 13. H797823

North/West Follow to Cookstown from your location. From North entering top of Town. Take right onto the B162 Lissan Road. *From South/East. Follow from Belfast onto M1 to Cookstown. Follow to Cookstown. Up main street of town at top take left onto B162. *Approx 3 miles turn right onto the Tullynure Road.

Entrance to the Estate is on your right.

12 November 2011

Slievenacloy (UWT) Reserve

O.S. Map No. 14 J245712

M1 take Junction 9 (Moirar'bout). Follow A26 to Nutts Corner R'bout. Nth: Take M2, junction 5 to T'patrick. Follow signs for Int. Airport. At r'bout take 1st turn on L to Nutts Corner. At Nutts Corner R'bout, take Dundrod turnoff, (5th from south, 3rd from North). Follow to Dundrod cross roads. Turn R.(posted Lisburn) B101. Follow for 3-4mls. Past Ballymacward P.Sch on L, pass yellow road sign take 1st road on L (Flow Bog Road). Follow Rd for 1.2mls. Reserve on Left. Gates to old farm up on left will be opened for parking off road.

Its a Fungi Old World

Difference Between Cats and Dogs

A dog thinks: Hey, these people I live with feed me, love me, provide me with a nice warm,

1. *Arctia denudata*
2. *Clavulina cinerea*
3. *Bulgaria inquinans*
4. *Phallus impudicus*
5. *Fuligo septica*
6. *Coprinus micaceus*
7. *Hypoxylon fragiforme*
8. *Trametes gibbosa*
9. *Lactarius torminosus*
10. *Dumontinia tuberosa*
11. *Lycoperdon echinatum*
12. *Lycogala terrestris*

PICTURE QUIZ