

Fungus Survey of Oxfordshire

Newsletter 2013

Editor's News

www.fungusoxfordshire.org.uk

Our new website has created a lot of interest. We have had a number of enquiries throughout the year and it was good to see new faces join our Forays. Despite the awful weather in 2012 some interesting finds were made (see our recorder's report and that of our President Richard Fortey). Grateful thanks to all those who passed on their images to me for inclusion on the website. Thanks also to Peter Davis (BFG) who very promptly updates the website for us and to Marketa for help with production of the Newsletter.

Molly Dewey



Cortinarius sanguineus by Caroline Jackson-Houlston

Notes from our President

Richard Fortey FRS

Every year is different 2012 was a very curious year for fungi in Oxfordshire. The drought came at the wrong time, and the rain, when it came, was either too early or too prolific. The combination of factors seemed specially designed to put off all those fungi that have mycorrhizal associations with tree roots. The result was that those genera that normally make autumnal foraging such a pleasure – *Boletus*, *Russula* and *Lactarius* for a start - were represented only by their commonest species. It would be an amazing year indeed if *Russula ochroleuca* or *Lactarius blennius* or *L. quietus* failed to appear, but they were often the only examples of their respective genera, in forays in South Oxfordshire at least. Stalwarts of the Chiltern Hills like *Craterellus cornucopiae* remained undiscovered. Indeed all relatives of the chanterelle and the *Hydnums* were also noticeable by their absence. This was bad news for those who like to mix gastronomy with field mycology. At least in the South of the county there was hardly a record of *Boletus edulis*, in stark contrast to 2011, when what Scandinavians call the 'king of mushrooms' was abundant almost everywhere. Things started to pick up by the very end of the season, but by then the first frost was looming.

So bad news, one might say? Well, actually no, not by any means. For the fungi, as for almost all life, what was bad news for some seems to have been good news for others. Some of these beneficiaries were probably saprobes. There were lots of *Lepiotas* around, for example. These are always attractive mushrooms to find, and some species have few British records. For example, I discovered *L. ochraceofulva* for the first time in my life, adding it to only a handful of previous collections in Kew. The normally rare *L. xanthophylla* and *L. ignivolvata* came up at several sites, while the handsome but poisonous *L. aspera* appeared in numbers. Genera allied to *Lepiota* like *Leucoagaricus* also had a good year – again, these are saprobes. *Coprinus sensu lato* seemed to like the wet weather, while those who like 'small brown jobs' were rewarded with lots of *Inocybe* species. It was a good year for *Mycena*. Rather mysteriously, on some of the forays I attended, brown *Cortinarius* species (mostly *Telamonia*) literally carpeted the ground under oak trees. These are (presumably) mycorrhizal species, so what was bad for *Russula* must have been favourable to *Telamonia*. The downside to this is that the latter are extremely hard to identify! A few have funny smells or interesting reactions to reagents, but many are very hard to

name, even by the experts. Still, it would be a poor science that didn't still have some challenges.

A rather good demonstration of fluctuating fortunes is provided by *Geastrum quadrifidum* in Shiplake churchyard.



Geastrum quadrifidum

Photo R. Fortey

I have been collecting this species for more than a decade in the same place under *Cedrus* by the 'garden gate'. Some years there are a dozen examples, other years it is a struggle to find more than two fruitbodies. 2012 was its *annus mirabilis*, with at least thirty fine examples spreading around the base of the tree and in the surrounding needle duff (Fig. 1). I have never seen it so prolific. So whatever didn't like 2012, earth stars were not on the list.

So on to rarities. In this case, of course, one cannot say whether some particular feature of the year was, or was not responsible for the occurrence of the species in question: a sample of one is not statistically significant! Your president had two important finds during 2012. The first was growing very early in the year on elder wood in Lambridge Woods, near Henley-on-Thames (the bit I own is called Grim's Dyke Wood). A superficially rather ordinary-looking black encrusting ascomycete (Fig.2) had very peculiar spores, and defied identification. Hence Kew became involved, and Alick Henrici recognised it after some research as the first occurrence 'in the wild' in Britain of the elegantly-named *Byssosphaeria schiedermayeriana*, a species with a bizarre, almost worldwide distribution. It had previously been found in the British Isles on rope in a greenhouse! This was duly written up and published in the BMS journal *Field Mycology*. See also the early report in our 2012 Newsletter.

At the other end of the year, on December 3, I re-found a white poroid fungus growing on a cut end of a conifer log next to Crowsley Park. I say "re-found" because it had been on the same log a year and a bit earlier (Oct 25th), and then I had not been able to identify it, because I could not obtain a spore print. I had recognised it was something out of the ordinary, which is why I went back. In 2012 I was luckier, and thanks to Ryvarden & Gilbertson's books on European polypores ran it down to *Antrodia carbonica*. However, I was also somewhat nervous about declaring it as such to Kew, since *A. carbonica* (a known North American species) had previously been reported only from the Atlas Mountains on this side of the Atlantic Ocean. So I was delighted when Martyn Ainsworth confirmed my ID, but what was even more surprising was that Martyn had just received a paper recording it from the Netherlands! The Dutch occurrence was found just three days after my discovery in 2011 in Crowsley Park Wood. So we have a new British, but sadly not European, record to add to our lists. It will also be written up for *Field Mycology* to make it 'official'.

Third, the rare parasite *Volvariella surrecta* demands a mention.



Volvariella surrecta on top of *Clitocybe nebularis*
Photo R. Fortey

This extraordinary pink-spored agaric grows on top of the caps of *Clitocybe nebularis*. Its mycelium is what produces the 'cloud' on the top of the 'clouded agaric', but it hardly ever fruits. I must have looked at tens of thousands of *C. nebularis* during my lifetime of mycology and always wanted to see it – but was deprived of the chance until last year. My wife spotted the first one, not more than 200 yards outside our own wood. It is a strange thing to see mushrooms popping out of a white volva atop another mushroom. This species has records from Blenheim Park back in the 'sixties', but does not

seem to have been recorded from Oxfordshire since then – or indeed before. Apparently it is loyal to site, so it might be back this year.

So despite the absence of old fungal friends 2012 turned out to be full of surprises. Maybe some of the rare species need special conditions to stimulate them to fruit. So odd weather patterns, may, in the end, add to the diversity of our mycota. The moral might be that there are no such things as bad years – there are only different ones. The main thing is to be attuned to spot species that do not seem familiar, and then to determine them before they fade away.

News from our outgoing Chairman

Max Peterson

After quite a few years as Chairman of FSO, I have retired and look forward to Prof Alison Banham taking the helm. I am not sure how many years ago I was elected, but I would think it is about six, and it is time for me to go. I have enjoyed it and it is true to say that the job has been less than onerous with the backing of a keen and efficient committee

This has been a momentous year for the group firstly with the installation of our new President, Richard Fortey who has embraced the role with alacrity.

Secondly, the setting up of our website is very exciting. The opportunity to post up to the minute photographs of rare and interesting finds is great. Various of this year's rare and interesting finds are described in this newsletter.

The government reaction to the arrival in the UK of Ash dieback, *Chalara fraxinea*, is probably too little too late and we will be faced with major problems over the years ahead. Whether this slow response is due to the relative lack of prominence given to mycology in university plant science departments or to cuts in government spending within the government backed organisations and research establishments is bound to cause heated debate, but one possible positive outcome is that it is likely that mycology will raise its profile (and funding?!) within academic circles.

Climate change gets a mention every year and this year is no exception. After a dry winter it rained for the whole summer following the introduction of drought restrictions, until finally the hosepipe ban was lifted! The rain stopped eventually

leading to a dry early autumn and the appearance of very few fungi. However by the end of October and beginning of November the fungi that we had been eagerly waiting for arrived in profusion we had some very good forays.

The smooth running of this group is only possible as the result of hard work behind the scenes. Thanks are due especially to Molly Dewey not only for her tireless secretarial skills but also, with Marketa Samalova, for editing this newsletter and steering us through the introduction of the website, not forgetting the input from Joanna Dodsworth and Peter Davis.

Last but not least, huge thanks to Judy Webb our recorder, whose encyclopaedic knowledge and boundless enthusiasm is infectious!

I have very much enjoyed my spell in the chair but feel that it is time to step down to make way fresh blood, and wish the group all the best. I am not ducking out entirely and am still entrusted with the weighty responsibility of looking after the group's finances.....!

A word from our new Chairman

Alison Banham

I am sure that everyone will join me in thanking Dr Max Peterson for his contributions as Chairman of the Fungal Survey of Oxfordshire. I am sure that we are all looking forward to an interesting year in 2013, although its going be hard to top the discovery this year of the new poroid by Richard Fortey. I look forward to seeing you all on forays in 2013.

2012 Foray round up news from our Recorder

Judy Webb

2012 was a very interesting year for fungi. 12 forays were planned and 11 actually happened. The foray dates were preceded by a winter drought and hot and dry weather until the end of March. Then followed rain and cold weather in April, so much so that our first foray on 29th April to Pinsley Wood had to be cancelled. Rain and cold for the most of the rest of the year (the wettest year in England since records began) would seem to have been good news for fungi, however there was great variability. The pale brown leaf spot fungus on sycamore leaves (caused by *Cristulariella depraedens*) was very

noticeable - some areas had leaves heavily spotted.

I saw very few *Russulas* and Boletes but later on in the autumn large numbers of Trooping funnel, *Clitocybe geotropa* and Clouded Funnel, *C. nebularis*, were evident in woods. Also very large numbers of buttercaps, *Collybia butyracea* (we now need to call this *Rhodocollybia butyracea*). Amethyst Deceivers & Earthstars, *Geastrum* sp. had a good year. Every site seemed to have the orange bleeding Saffrondrop Bonnet *Mycena crocata* and there were enormous swarms of the Slender Club *Macrotyphula juncea* (almost like a carpet of buff grass leaves). So species of litter and dead wood seem to have been the winners, but some mycorrhizals had mixed fortunes, with the exception of some webcaps, as mentioned below.

Just a few personal highlights from the year's forays:

The Worton Wood foray was memorable to me for the chance to photograph a good specimen of the Deathcap, *Amanita phalloides*. Whitecross Green Wood was hard work to hunt things out (long list of things on leaves) but I'm always pleased when it produces one of my favourites, the tiny Ear-pick fungus, *Auriscalpium vulgare*.

The Cumnor Hurst foray, joint with Cumnor Conservation Group and the Ashmolean Natural History Society, was remarkable for the number of species found in a relatively small site, no doubt due to the plethora of experts on hand for the day. Not only did we have Richard Fortey and Caroline Jackson-Houlston but also the help of Dave and Jenny Shorten of Cotswold Fungus Group. Large numbers of *Scleroderma* Earth-balls of three species were in the mainly ash woodland on the slopes. Many fungi using dead wood were recorded, from *Mycenas* and *Psathyrellas* to a good number of the encrusting types which are identification challenges.

Grey's Court produced a very long list, due to the variety of habitats which included coniferous and deciduous woodland with beech. New to me were the roundhead fungus *Stropharia squamosa* and the woolly-foot toadstool, *Gymnopus fagiphila*. Others were very pleased to see good examples of attractive Plums and Custard, *Tricholopmopsis rutilans*.

Common Wood in the Chilterns, joint fungal foray with Woodcote Conservation Group, was remarkable for the five sorts of beautiful yellow to

red *Cortinarius* species associated with the abundant beech (these gave Caroline Jackson-Houlston some taxing hours in attempts at identification). *C. sanguineus*, *C. croceus* and *C. croceocaeruleus* seem certain, but a re-visit might be necessary to confirm *C. infractus* and *C. elegantissimus*. This was one place that did have lots of yellow *Russulas*, but many of them had been eaten off by the one slug that I actually like – the small, beautiful Slender Slug, *Malacolimax tenellus*, which is a fungus specialist of ancient woodland and has a lemon yellow body with lilac tentacles. This is actually a rare thing these days, but here there were good numbers, therefore an important discovery.

Bagley Wood was notable to me for red fungi - stunning red fruitbodies of the Vermillion waxcap, *Hygrocybe miniata* and the two rare webcaps: Blood-red webcap *Cortinarius sanguineus* and the more purple-red *C. purpureobadius*. I enjoyed Dave Shorten showing me *Cortinarius camphoratus* with its 'cheesy feet' smell.

North Leigh Common produced its normal crop of Fly Agarics but will stick in my memory for the largest troop of Jelly Baby, *Leottia lubrica*, that I have ever seen in 13 years of forays with the group. In Frilford Fields I again was again astonished at the fishy smell of the Cucumber Cap, *Macrocystidia cucumis* and at the large numbers of Lead grey puffballs, *Bovista plumbea*.

Our last foray of the year to Shotover grassland and woodlands was cancelled as a group activity due to heavy frost for the couple of nights before. None the less, I and Caroline Jackson-Houlston had a walk around on the day and were surprised to find we produced a useful list of fungi, including five waxcaps, even though some were quite frost-damaged.

Finally a big thank-you to Wendy MacEachrane for working hard on the 2011 foray data entry to MycoRec on the group's laptop. Perhaps another volunteer could help out with the 2012 forays and give Wendy a rest this year?

Botrytis- the Ying and the Yang of the Wine world

Molly Dewey

Botrytis cinerea is a weak opportunistic fungal pathogen, which, under certain conditions, can become invasive and cause serious crop losses.



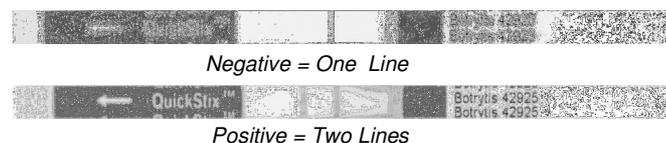
B. cinerea on Chardonnay grapes in California
Photo M. Dewey

In the wine world *Botrytis* infections on grape berries are generally undesirable. In cooler climates species of *Penicillium* are commonly associated with such infections and in warmer climates species of *Aspergillus*. Wine made from the juice of such berries has poor keeping qualities, off odours and taints and, in the case of red wines, loss of colour, hence, the undesirability. In contrast, late harvest berries infected with *Botrytis* alone are much sought after. It is from these berries that we get our sweet dessert wines with their characteristic honey aroma.

It's a long story but while working at Oxford, raising monoclonal antibodies to plant pathogenic fungi for diagnostic purposes, a Swiss colleague of mine, Rolf Bossi, and later a Danish graduate, Ulla Meyer, joined me in raising monoclonal antibodies to *B. cinerea*. It was not easy, but eventually we did produce a *Botrytis*-specific monoclonal antibody. Our antibody, BC-12.CA4, recognizes a highly stable glycoprotein (antigen) produced by the fungus both in culture and within plant tissues. The best part of the story, from the wine point of view, is that yeasts do not metabolize the antigen during fermentation so that if *Botrytis* antigens are present in the juice from

late harvest grapes they will be present in the finished wines.

Working with two plant diagnostic companies, Forsite Diagnostics, York UK and EnviroLogix, Maine, USA, we have used the BC-12.CA4 antibody to develop a “*Botrytis*-pregnancy test” which is now commercially available. The technology is based on that developed by Unilever for their human pregnancy test. It is user friendly, takes only 5- 10 min, does not require sophisticated equipment and is semi-quantitative. Two lines indicate *Botrytis* is present in the diluted juice or wine and one that none is present. In the autumn of 2013 Prof Chris Steel from Charles Sturt Univ, NSW joined me in the lab in Oxford to test out various French and Australian Table and Dessert wines. None of the red wines contained any *Botrytis* whereas some of the white Table wines, particularly the French did contain significant amounts but nonetheless tasted good. All the dessert wines contained a lot of *Botrytis* antigens unlike some dessert wines that have been artificially sweetened and clearly have not been made with juice from Late harvest, *Botrytis*-infected grapes.



EnviroLogix *Botrytis*-ImmunoStix Photo:John Baker

(Frances M. Dewey,^{1*} Christopher C. Steel,² and Sarah J. Gurr³, **Lateral Flow Devices to Rapidly Determine Levels of Stable *Botrytis* Antigens in Table and Dessert Wines** American Journal of Enology and Viticulture, 2013, in press).

Notes from John Killick taken from his articles for the Oxford times

TINDER or HOOV FUNGUS

The photo of the bracket fungus (see later), uncommon in Oxfordshire, is from a beech in Bagley Wood; in the north it favours birch and by the Mediterranean it prefers oak. It causes a white heart-rot, creating a niche for many insects, and making the timber worthless. It has long been the source of amadou, much prized as tinder (*Fomes* = fuel) and by anglers for drying soggy dry flies. The “ice-man” found in a glacier in Tyrol carried a sample 5000 years ago. To make it, use the top of the bracket, not the tubes, and soak it in washing soda for a week, dry it and beat it until it is soft and brown, like chamois leather. The tinder

works better with a little sodium nitrate. The fungus has also been used for making paper, dyes and snuff. John Ramsbottom, author of many fungus books over 50 years ago, cited the amadou as “good reason why [the fungus] is rarely left to attain old age”. Linnaeus in 1753 named the fungus as a *Boletus*.

bmit



Fomes fomentarius

Photo John Killick



Peziza vesiculosa

Photo John Killick

From Caroline Jackson-Houlston

A patch made by Caroline as a contribution to the Plantlife's Patchwork Meadow project. Thank you Caroline.

BLADDER CUP

Adam Hager drew my attention to a magnificent colony of *Peziza vesiculosa* at Abingdon's Carswell primary school where a teacher, Mrs Katie David, told me more about it. It was, unintentionally, the most plentiful item in a well composted bed containing plants that are interesting to touch; being poisonous if eaten raw, it teaches the obvious lesson that you don't eat a fungus unless you know what it is and that it is edible. It also does well in wet straw and in compost including, in the past, that used for growing mushrooms. The striking round cups, with scurfy undersides, can be distorted as they press against each other; embedded in their upper surface are tiny bags containing the fungus-seeds (spores). These can all mature at once and respond to changes in air pressure, emitting puffs. A chemical, vesiculogen, has been found to attack a cancer in mice.

