North Eastern Fungus Study Group

Newsletter 55 November 2009

Fuligo septica Coate Moor Plantation, June 05
Nikon F80 with Tamron 90mm macro lens, aperture priority, f32 David Smith

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This Newsletter is produced with the assistance of Durham Wildlife Trust

The view from here..

It is October. In previous years we would have been used to chilly mornings by now, with drifting mists and a feeling in the bones that autumn was on the way. As I write, there are few natural signs of the seasonal shuffle towards winter. Apart from the bare fields, harvested several weeks ago and now ploughed and made ready for the next crop, there are only the faintest shifts in leaf colour of the mixed woodlands visible from my window. The odd Horse Chestnut has set the gold standard but it is usually in pole position for the autumn "off" anyway. This year it is a little later than last. No doubt we shall see a catch-up in other tree species as the daylight hours shorten and the nights draw in .... but nonetheless this year, like last, things do seem to be slipping back.

The visible signs of autumn tend to be influenced by "the weather", as we British like to think. It is often said that "weather" is the British version of "climate". Unseasonal night-time frosts, high winds, cold snaps, prolonged dark and cloudy days, cold weather drought and warm weather deluges (with the odd hailstorm thrown in) generate a very confusing ambience for the natural world. For higher order plants this can mean no more than a slipping schedule but with all the necessary activities carried out in the end. Leaf growth, bud formation, flower burst, seed setting, fruit formation, fruit fall and then die-back ..... all completed to plan but not necessarily to a strict time-scale. For fungi, though, it is a different story. Sometimes they just don't appear at all if circumstances are unfavourable. (See AWL's excellent "Random Harvest?" on page 8).

I think we are all aware that last year was not a GREAT year for mycological munificence. I struggled to find even a single meal-sized *Agaricus campestris* in places where historically they had been abundant. All my old favourites were in very short supply and I took to extending my boundaries to Scotland for gratification. Early September in the Argyll Forest was better but not significantly so. A very few *Cantharellus cibarius*, not many Boletes and even less of the usual suspects like *Hydnum repandum* and *Pleurocybella porrigens.* You would be forgiven for thinking that I was looking primarily for edibles, but you would be wrong. There was not much of anything *whilst I was there*. Note the italics.

This year's trip to Scotland was again in early September. I met a few dour and disgruntled Field Mycologists trudging around in the torrential rain and despondently poking about in every nook and cranny to get their species count out of single figures. "A bad year?" I queried. " Oh aye, verrrrry poor .... verrry poor indeed. No a patch on last year, ye couldnae move for fungi last year, no, ye could stond still and find twenty species ... a great year it was. Aye it was, it was".

I was momentarily struck dumb. (This IS a true story, by the way). "Oh?" I responded questioningly, "... and when were you here last year?"

" Oh, maybe a wee bit later we were last year ... Aye, probably late September, aye, aboot then. Verrry good it was, too."

What a difference a fortnight can make, especially *if the difference is favourable*. But it is **not** the time that makes the difference, nor is it the "season". It is the weather. So I went twice to Scotland this year. A bonus camping trip. End of September. Four days of rain, warm gale-force winds and brief sunny intervals. I wandered through forests, river valleys, upper slopes, and tick-infested bracken. I *could* say that nothing of any significance was found if, by that, I meant not enough *C. cibarius* for a decent breakfast omelette. If that *were* my yardstick then this year WAS a bumper year as ye couldnae move for the blighters.

The view from here is not yet autumnal so things are a little behind. If we don't catch up soon we may have a very poor year. It all depends on the weather. Don't get despondent, though. There is always next year. TAK

Armillaria correction

The photograph on p689 of *The Garden* last month (RHS Advice, October) was not in fact *Armillaria mellea* (honey fungus), but a harmless fungus, probably a species of *Hypholoma*. The misidentification was not picked up during editing; apologies to readers, and to the RHS Advisory and Science Departments, for the confusion caused.

Jon Ardle, Technical Editor, *The Garden*

Armillaria mellea (honey fungus)

The article (left) appeared in the RHS organ, "The Garden". It is published here in order to emphasise the difficulties that even the editorial board of the RHS have in the complexities of mycology! That permission has been granted by the publishers to publish the correction is to their credit and for that we thank them. You may struggle to decide which of the hypholomas could be mistaken for honey fungus and would probably be in some difficulty finding a "harmless" and correctly identified hypholoma anyway, but see right!

Consider Charles McIlvaine, author of the classic One Thousand American Fungi. An amateur, McIlvaine was a great popularizer of mycology and tireless promoter of mycophagy. In the latter capacity he achieved a renown not to be matched easily, for his extraordinary appetite for wild mushrooms included several poisonous species, e.g. *Russula emetica* and *Hypholoma fasciculare.* Incredible as it seems, he ate Hypholomas indiscriminately, insisting "wherever and however they grow, Hypholomas are safe." During his lifetime (by the way, he did not die of mushroom poisoning) McIlvaine consumed prodigious quantities of fungi, edible and otherwise, lavished praise on their dietary advantages, and convinced others to enjoy them as he did. He once claimed to have eaten 437species - some say his life total was over 800 - in either case a record certainly worthy of a Mushroom Book of Records.

A READER WROTE……..

A new member (who shall remain nameless, you know who you are) recently e-mailed me with a question. When is the deadline for submission of articles for next newsletter? (sic)

Well, after I had thrown back a brandy I was tempted to reply immediately with words of encouragement and praise for the thought. So emotionally overcome was I that it is only recently that I found the words to reply. It was about then that I realised the reason why articles submitted by the membership are on the Red List! It is because I have never told you all WHEN the deadline is!

I most humbly apologise for this oversight. The deadline is now.

Thanks to Doug for getting the ball rolling. See below. TAK

Those blackening Russulas

Of the six "blackening" Russulas listed in Nordic Macromycetes Vo.2 there are three superficially similar species, common in our area, which soon become suffused or completely blacken, very early in their development. Two of them are frequently encountered on our woodland forays. They are *Russula nigricans* and *Russula densifolia*. The other is *Russula anthracina* which is much less common or is it that it has it been confused with the other two? They can be separated on reliable contrasting characters and here is a simple dichotomous key to aid the process.

It is assumed that the Genus Russula as a whole can be recognised by the mycologist.

1 Gills widely spaced and very brittle in mature specimens. = *R.nigricans*

1a Gills more crowded 2

2 Flesh and gills becoming pink when bruised (5-10 mins) = *R. densifolia*

2a Flesh and gills quickly becoming dark grey to black when bruised or cut = *R. anthracina*

Russula nigricans **Young fruiting bodies soon darkening, mature gills widely spaced. Flesh goes pink when exposed after 5-10 minutes. Extremely brittle.**

Russula densifolia **Cap not darkening completely, gills crowded. Flesh goes pink when exposed after 5-10 minutes.**

Russula anthracina **Cap soon darkening. Flesh and crowded gills quickly bruise black never pink.**

All three species are reported from a wide range of woodlands in Britain and are all rather stout in stature. I have only found *Russula albonigra* once that I know of and it was trooping on a woodland edge and associated with Scotts pine. Any feedback from use in the field would be most welcome.

Doug McCutcheon

The following article was submitted by Gordon in an attempt to give you some idea of what life was like when he was but a lad.

LIFE IN THE 1500'S

The next time you are washing your hands and complain because the water temperature isn't just how you like it, think about how things used to be. Here are some facts about the 1500s:

Most people got married in June because they took their yearly bath in May, and still smelled pretty good by June. However, they were starting to smell, so brides carried a bouquet of flowers to hide the body odour. Hence the custom today of carrying a bouquet when getting married.

Baths consisted of a big tub filled with hot water. The man of the house had the privilege of the nice clean water, then all the other sons and men, then the women and finally the children. Last of all the babies. By then the water was so dirty you could actually lose someone in it. Hence the saying, "Don't throw the baby out with the Bath water."

Houses had thatched roofs of thick straw-piled high, with no wood underneath. It was the only place for animals to get warm, so all the cats and other small animals (mice, bugs) lived in the roof. When it rained it became slippery and sometimes the animals would slip and fall off the roof. Hence the saying " It's raining cats and dogs."

There was nothing to stop things from falling into the house. This posed a real problem in the bedroom where bugs and other droppings could mess up your nice clean bed. Hence, a bed with big posts and a sheet hung over the top afforded some protection. That's how canopy beds came into existence.

The floor was dirt. Only the wealthy had something other than dirt. Hence the saying, "Dirt poor." The wealthy had slate floors that would get slippery in the winter when wet, so they spread thresh (straw) on floor to help keep their footing. As the winter wore on, they added more thresh until, when you opened the door, it would all start slipping outside. A piece of wood was placed in the entranceway. Hence the saying a "thresh hold."

(Getting quite an education, aren't you?)

In those old days, they cooked in the kitchen with a big kettle that always hung over the fire. Every day they lit the fire and added things to the pot. They ate mostly vegetables and did not get much meat. They would eat the stew for dinner, leaving leftovers in the pot to get cold overnight and then start over the next day. Sometimes stew had food in it that had been there for quite a while. Hence the rhyme, " Peas porridge hot, peas porridge cold, peas porridge in the pot nine days old."

Sometimes they could obtain pork, which made them feel quite special. When visitors came over, they would hang up their bacon to show off. It was a sign of wealth that a man could, bring home the bacon. They would cut off a little to share with guests and would all sit around and chew the fat.

Those with money had plates made of pewter. Food with high acid content caused some of the lead to leach into the food, causing lead poisoning death. This happened most often with tomatoes, so for the next 400 years or so, tomatoes were considered poisonous.

Bread was divided according to status. Workers got the burnt bottom of the loaf, the family got the middle, and guests got the top, or the upper crust.

Lead cups were used to drink ale or whisky. The combination would sometimes knock the imbibers out for a couple of days. Someone walking along the road would take them for dead and prepare them for burial. They were laid out on the kitchen table for a couple of days and the family would gather around and eat and drink and wait and see if they would wake up. Hence the custom of holding a wake.

England is old and small and the local folks started running out of places to bury people. So they would dig up coffins and would take the bones to a bone-house, and reuse the grave. When reopening these coffins, 1 out of 25 coffins were found to have scratch marks on the inside and they realized they had been burying people alive. So they would tie a string on the wrist of the corpse, lead it through the coffin and up through the ground and tie it to a bell. Someone would have to sit out in the graveyard all night (the graveyard shift.) to listen for the bell; thus, someone could be "saved by the bell" or was considered a dead ringer.

And that's the truth. Now, whoever said History was boring ! ! !

GS

Finding What's There

Now that I have stepped back from the NEFSG "front line", I have a little more time to spend on what interests me most – seeking out, identifying and recording what has never before been found in the old county of Durham. I know some people are a little puzzled by this priority so I decided to spell it out here. To me it seems perfectly obvious and it may do to you too. If so you don't need to spend time reading any further.

We are all aware of the importance of conservation and some of us are actively involved in the hard work which aims – among other things – to preserve and protect our local biodiversity. It is quite legitimate to ask why but such a question demands a complex, quasi-philosophical answer which I am neither qualified nor prepared to attempt here.

Once you accept the urgent need to conserve, for most people the next step seems easy enough – get involved in doing it! This is fine so long as you know what needs conserving - and even this can be far more difficult to establish than first seems to be the case. For example, an animal may be one person's rarity but another's vermin.

With fungi the difficulty is far more fundamental though the non-mycologist is probably not even aware that it exists! It consists merely, though by no means simply, in finding out what's there. Until this is known, it is arguably impossible to proceed further. If you don't know that something is there, any action you take to conserve other organisms in the vicinity may well lead to the local extinction of something far more rare. All other knowledge about what needs conserving and how to do it must proceed from this basic information. All over the country, important fungi are constantly being destroyed – even driven to the verge of extinction - by the well-meaning activities of conservationists.

Recently the list of British fungal species was calculated to be increasing by about 13% per annum – that is 13% of many thousands. A few of these are new colonists but most have simply never previously been found! Not many people are qualified to deal with this problem at a national level but we can – and I personally try to - address it at the local level. When I first became aware of the problem during the nineteen eighties, I found that there were about eight hundred species of non-lichenized fungi listed for VC66 - the old county of Durham. Later I realised that many of the names were very old, often no longer in use and frequently meaningless because now subdivided, often many times since first coined mainly by nineteenth century naturalists. The parallel total for the (admittedly much larger) county of Yorkshire stood then at about 5,000. Largely due to the efforts of a handful of people, the total for VC 66 (excluding lichens) has recently reached about 2,500. One of my motives for setting up the NEFSG – and I feel no need to apologise for this - was to involve more people in expanding the list. I am glad to say that this objective is slowly being achieved, not least by the willing efforts of NEFSG members in our foray programme. More pairs of eyes help greatly in establishing the presence of more species of fungi. There is no harm in repeating that you cannot even begin to think about conserving something until you have established that it is actually there! In this sense what I have long been trying to do is absolutely basic research.

I thoroughly enjoy the social advantages of being a member of the NEFSG but I must stress my firm belief that our social activities are peripheral to our primary function - the locating and recording of what is actually there – and our secondary function of helping others to identify and record these biological riches.

Finally, in addition to the importance of locating what is present, there is the purely selfish satisfaction of knowing that one is doing something that no-one has done before. I have to admit that this achievement is what gives me the greatest satisfaction – a satisfaction that never palls however many times I do it. Lewis Carroll's Alice was taught that "comparisons are odious" and there is limited truth in this belief, but it could be said that establishing the existence of a fungus in any area is much more important, because it has much more point, than, for example, creating new sporting records. The latter records are constantly being cancelled out by people breaking them. In contrast, new biological records can only be made once and are forever. AWL

A comment on the above...

Alan makes a fundamental point which I hope and believe most of the membership are aware of. It is easy to forget that the joyful gathering of specimens in the "field" is only the first stage in the accurate recording of fungi for inclusion in our, or indeed any, useful database .

Having just returned from a long weekend with the North West Fungus Study Group and observed at first hand the sheer determination and dedication of a few truly worthy mycologists in painstakingly pinning down that obscure detail which can clinch an identification, I can only say I felt humbled. Not a comfortable state for me, I assure you. The Committee has noted that there is something of a demand, perhaps too strong a word right now, for more education in the deeper levels of identification.....wheels are in motion. TAK

Lichen Identification Course at Kindrogan Field Centre

On one of the forays last autumn Alan Bunn told me about his experience of attending a course on *Identifying Fungi* at Kindrogan Field Centre in Perthshire (reported in Newsletter 53). Encouraged by his account I looked up the Field Studies Council website and found that a course on *Lichen Identification* was to be run at Kindrogan 4–11 April 2009, led by two eminent lichenologists, husband and wife Brian and Sandy Coppins. Brian is probably Britain's foremost lichen taxonomist while Sandy is a lichen consultant who has carried out lichen surveys throughout Britain.

Lichens are not now recognised as a taxonomic group and their classification has been assimilated into that of the fungi. They represent a fungal life-style equivalent to the mycorrhizal habit or parasitism. Lichenisation is a nutritional option that has evolved independently in several disparate groups of fungi, mostly among ascomycetes but occasionally in basidiomycetes. I have had a fascination with lichens since I was introduced to them at the age of seven, but despite having a good knowledge of their structure and general biology I have never mastered their identification. So, after reading the synopsis of the Kindrogan course I decided to enrol.

There were fourteen participants on the course, ranging in age from about 20 to mid-70s, with a correspondingly wide range of knowledge and expertise. After supper on the first evening, Saturday, we met in the lab, which was well equipped with microscopes and copies of *The Lichen Flora of Great Britain and Ireland*, whose keys we were to use. Sandy explained the aims of the course, to enable us to come to grips with seeing, recognising and understanding lichens and to acquire confidence in identifying them with the aid of microscopes, chemical spot tests and keys.

Work began in earnest on Sunday morning, which we spent in the grounds no more than 100 yards from the centre. Brian tore specimens from the abundant lichens festooning the trees and reeled off names and salient characteristics. I simply couldn't keep up and so joined the group clustered around Sandy, who explained everything slowly and with great patience. The rest of the day was spent in the lab; Sandy ensured that everyone had specimens of the same set of species and then Brian took us step by step through the key – he read out each couplet of contrasting characters and we, as a group, had to choose which to follow. Along the way we learned new terminology, definitions of characters, how to cut thin sections of thalli and how to use spot tests.

On the next three days we went on field trips, 9.30 – 5.30, to a diversity of lichen-rich habitats, including deciduous woodland, native pine forest, heathland, limestone outcrops and granite boulder scree. In the evenings, after a lecture by Brian, we worked independently on the specimens we had collected. Thursday was consolidation day – independent or collaborative work on specimen identification in the lab with Brian and Sandy providing help on request. Then on the last day, Friday, we had an exam: Sandy provided each of us with a tray of lichens to be identified, selected according to what she considered to be our respective levels of competence. My tray contained 18 specimens, of which I correctly identified 16; one I got to the right genus but wrong species and one, through sheer carelessness, I got completely wrong.

The course was a great success and key to this were undoubtedly Brian and Sandy's expertise and dedication, and also the rich diversity of lichens they introduced us to. However, credit is also due to the participants, all of whom worked hard, asked questions and participated in lively discussions. We all came away more aware of the lichens around us and confident in our newfound ability to identify them. But if I were to pick one outstanding memory from the course it would be a purely fungal one, a single ascus seen through the microscope, beautifully stained in iodine to show the complexity of the apical dome. DS

Random Harvest?

The years are short but, oh, too long,
Frighteningly short for living's work;
Long enough to lose the drift
Of nature's rhythms and themes.

Those early toadstools, often late, surprise
And rouse our wonder annually.
Not all always appear of course
Or wonder would be lost or vitiate
Itself in mere repetition.
Amanitas in large numbers may amaze.
July and August, often bountiful
With boletes or with Russulas,
May just as easily frustrate our hopes
But then confound us with the unforeseen.
There is enough of shape to reassure
In each year's sketchy pattern,
Enough surprise to fill us with delight,
Enough of mystery to charm afresh each year.

What one forgets in soft September-time
Are all those torn and broken fruits
Of Autumn's later days, those malformed things
Defying searches for identity;
Also those cold and draughty times
When fallen leaves obscure or hide our quarry,
Recalling cryptically all our lives,
Those mixtures of predictability
And what no one of us can ever guess,
Of what each year we gain and lose
Or simply never find.

October – November 2008.

Our July Foray in Dryderdale

I was especially pleased when Gordon Simpson told me he was hoping to get permission for the NEFSG to hold a foray in Dryderdale because records exist of forays held by the Darlington and Teesdale Naturalists' Field Club in 1931 and 1934 when 139 and 103 species of fungi respectively were recorded. Moreover, I had recently provided some documenttion of these forays in an article published in YNU Bulletin No. 50 in 2008 under the title *Hands across the Tees*. For its period, the list of 139 species is exceptionally long and well documented and includes *Gomphidius roseus*, *Lactarius zonarius* and the only known VC 66 record of *Rozites caperatus.*

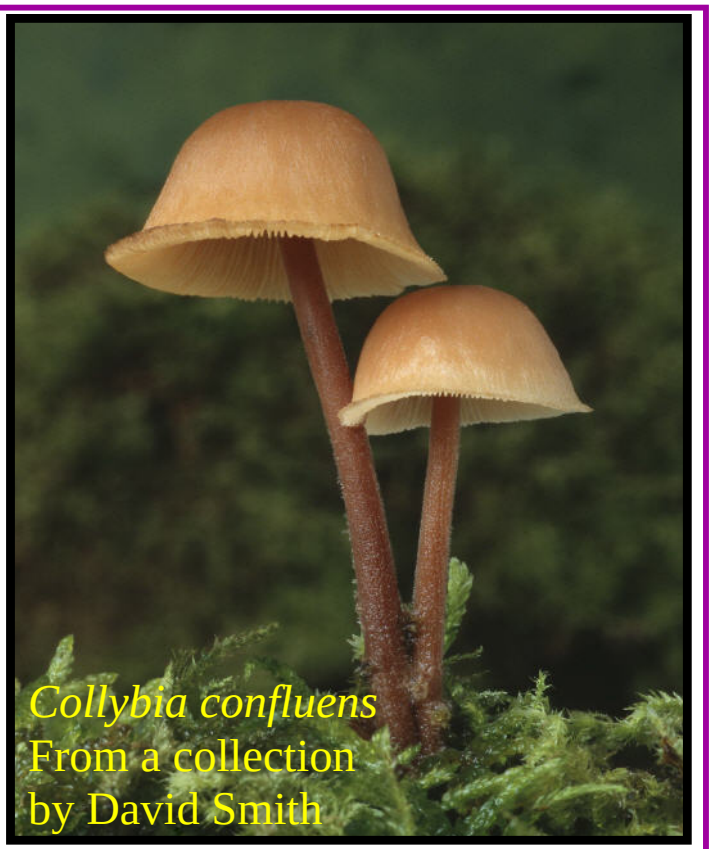
Of course, given the time-lapse and our early foray date, I did not expect to make very meaningful comparisons with two forays, both held in September, so many years before. Since the 1930s, the formerly private estate has been split up and is now partly in the hands of the Forestry Commission.

In the event, it was seen that much of the former wood and parkland has become degraded, at least from the point of view of fungal recording, and access has certainly become more difficult with many impediments to walking which cannot have been present in the 1930s. Nevertheless, to gain access to such a historically important site was in itself a source of great interest to me, a fact which I felt worth pointing out here.

The weather was very fine for our outing but it did prove rather difficult to move about in the site and this difficulty may in itself have contributed to a list of finds somewhat below average for July. One unexpected bonus was that, having unintentionally trespassed at the edge of the privately owned area, we gained on-the-spot permission not only to use the owner's picnic tables for our lunch but also to examine a small remaining , area of garden/parkland to make a few more records. This one small patch has probably changed less than any other since the 1930s.

Only rarely do we make notable records at July forays and this outing was no exception. The final list of 58 species contained nothing unusual though it is worth mentioning the common but little-recorded *Lophomerum ponticum* from dead Rhododendron leaves and Tom's collection of a *Scutellinia* that turned out to be *S. trechispora.* Unlike its better-known relative*, S. scutellata*, this has globose spores and is one of the more frequently found species tending to appear during the summer months.

AWL



Hygrocybes Are Not Too Bad

An open letter to Tom

My heart was troubled by your piece about your difficulty with *Hygrocybe conica* in last month's Newsletter. Of course it is true to say that Before David Boertmann wrote his book we were all in a bit of a mess with this beautiful genus. In his book he terms the name *H. nigrescens* 'misapplied'. *H. conica* is the same as *H. nigrescens.* I am sure your hero and mine, Alan, will help me if I have got any of what follows wrong. I find *Hygrocybes* so fascinating that I always try to work them all out to species and am often surprised at how many we have found on a foray. I encourage everyone I meet to try it.

We used the BMS Quick Key on our Church Walk a couple of weeks ago and were able to name 9 species, there and then, in the open Dales countryside above Settle with its help – but none was *H. conica*. I am told this species is often the first one colonise moss and grass before any other *Hygrocybe* shows its face. If you have one in your grass others will follow if you are lucky. Certainly it is one we do find alone of the genus on some of our walks in somewhat improved grassland, beside paths and in the grass in front of our Church.

To identify a *Hygrocybe,* the trick is to use the BMS Quick Key which you can download from the BMS website at www.britmycolsoc.org.uk Helen and I carry it on every foray as a single sheet, laminated and waterproof. This key is a simple table of the characteristics of the fungus which leads to other short keys. Each of these keys deals with only a few species so you are not overwhelmed by a terrific amount of information gathering. Most identification can be made using macro features. In some species the final diagnosis does come down to micro features but they are often relatively straight-forward spore size measurements and do not rely on any great expertise with the microscope. In any case only a minority of species will end up with a question mark over them such as to need microscopy

Hygrocybe psittacina

Hygrocybe virginea

What we need to know about a *Hygrocybe* is the slipperiness of cap and stem, the colour of the fruiting body and the gill attachment. Then we are away. Some species have a particular character which needs to be sought after narrowing down the options, for instance *H.reidii* has a smell of honey at the stem base. If conditions are very dry it is sometimes hard to know if the cap and/or the stem are viscid or not. Then you apply the 'kiss test' by touching the cap and the stem to your half open lips. One member of our Church walking group describes this as the 'slobber test' but that might be an overstatement. When you do this the fungus will stick to the half open lips if it is of a viscid species. Another good way to test for viscidity is to take the fruit body home, spray it generously with water from a plant spray, then put it in the fridge in a container lined by wet kitchen roll. After several hours or on the next day the fruit body will have recovered its natural features and can be taken to the Quick Key (See Notes at end)

A similar result can be obtained by gathering the fungus with a plug of soil as in the pictures above, wetting the plug of soil and moss and keeping it in a closed container in cool conditions to recover moisture. Then it can be compared with descriptions in a field guide and we can get to its name or at least near it. The final test is to check it with Boertmann.

I am sorry to hear that this book is still awaiting a reprint with no date of publication fixed, but you might be able to get a copy second hand. If I were asked to name a monograph about a genus that I feel cannot be bettered as a help to the amateur, I would name this book among my very short list. Geoffrey Kibby's *The Genus Russula in Great Britain* is not a monograph but is up there with the best of them for helping us identify species in the genus *Russula.*

Tom, I hope this little paper does not offend you by the simplistic line I have taken after all the work you put into that *Hygrocybe conica.*

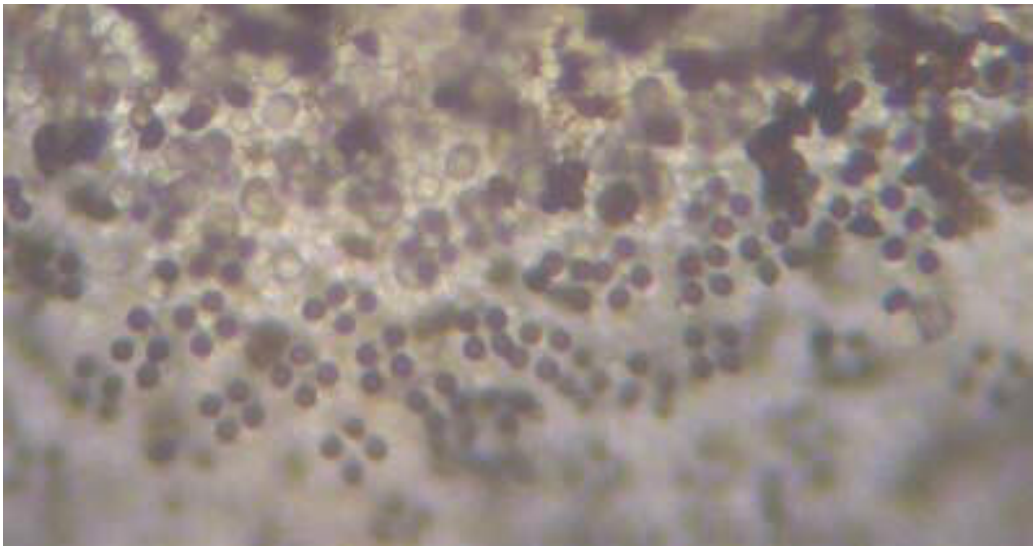
References

Boertmann, D. (2000). *The Genus Hygrocybe*: Fungi of Northern Europe. Svampetryk: Tilst

Kibby, G. (2007). *The Genus Russula in Great Britain This can be purchased online at* www.blurb.com/user/geoffkhere It comes in softback at £25.95 and hardback £34.95, both plus postage. For a *.pdf copy of the Quick Waxcap Key (© Patrick Leonard June 2009 West Weald Fungus Recording Group) please contact TAK.

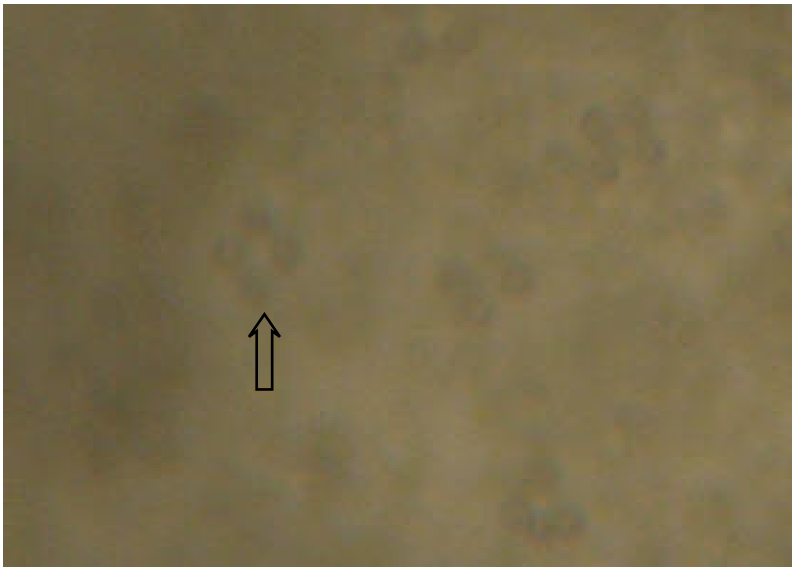
Basididia spores and clamps

Tom, you mentioned in your email to me that you had struggled with the examination of your *Hygrocybe conica,* trying to decide how many spores per basidium it had. At a workshop about 'Little Brown Jobs' Roy Watling taught us the answer to this. First we have to look at a dry gill, plucked from the fruiting body and laid out on a microscope slide under low power. This can be done up to x100. More magnification results in the objective lens touching the gill and all is then lost. What you get are like the pictures here.



4 spored basidia of Lachrymaria

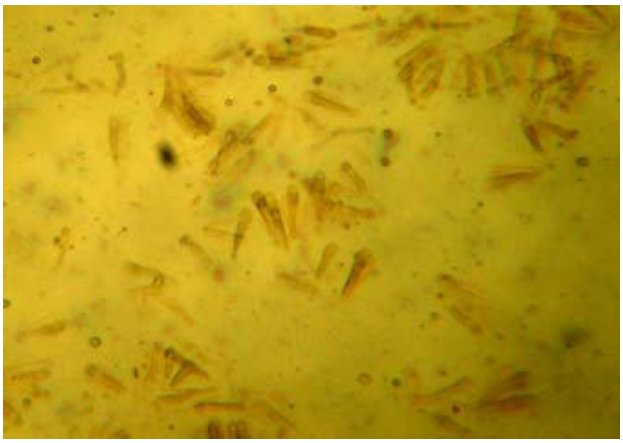
4-spored basidia of Tricholoma



When the spores are dark it is relatively easy to know a 4-spored fungus by the groups of 4 evenly spaced dots as shown above left.
If the fungus has pale spores it is more difficult but still possible (see right).
If you cannot find groups of four you might have a fungus with 2 spores per basidium. Then the only way to be sure is to examine a specimen of basidia at higher power. A tip is that 2-spored basidia often look as if they had a couple of horns on them. 4-spored ones on the whole have more slender sterigmata.

Basidia only specimens

To examine individual basidia you need what I would call a 'basidia only' specimen. This you can get by picking a really tiny piece of gill face up with the sharpest jeweller's forceps, or chopping up a gill with a razor blade till your



Low power and high power shots of "basidia only" specimens

Clamps at the bases of immature basidia at medium power and oil immersion

specimen is not bigger than a pin head. Put the tiny specimen of the gill face (not the edge) in water, or Congo red if you like, cover it with a cover slip and pound it with the rubber-clad end of a pencil till it flattens out into a what looks a bit like a mist on the slide. What you then see at a low power is shown in above left. Then the bunches of basidia are scanned one at a time till you get what you want. Among the basidia are many club-shaped cells which are young or developing basidia. The grown-up basidia have sterigmata. Count these on the top of a few basidia and soon you know if there are two or four per basidium. At high power you have to focus up and down till you are sure if there are 2 or 4 of them there. It is not necessary to see spores on the basidia. After the treatment I have described all of them will have been knocked off in any case.

Helen and Archie McAdam

Notes on submission of mixed-content articles

The article from Archie McAdam was most welcome. It took some effort on Archie's part to satisfy the some-what specific requirements of the fussy publisher!

For the record, it is absolutely fine to send complete and edited articles in *.pdf but unfortunately this format effectively prohibits any further manipulation or specific editing. If you submit any work it is almost certain that SOME editing will be necessary if only to make the article "fit" the newsletter. To make life easy, just send articles in word.doc with any pictures in individual *.jpeg format.

Number or identify the pictures and indicate an insertion point in the document.....that is all.

Looking for mushrooms (but mostly rabbits) on Tunstall Hill with Nico (left)

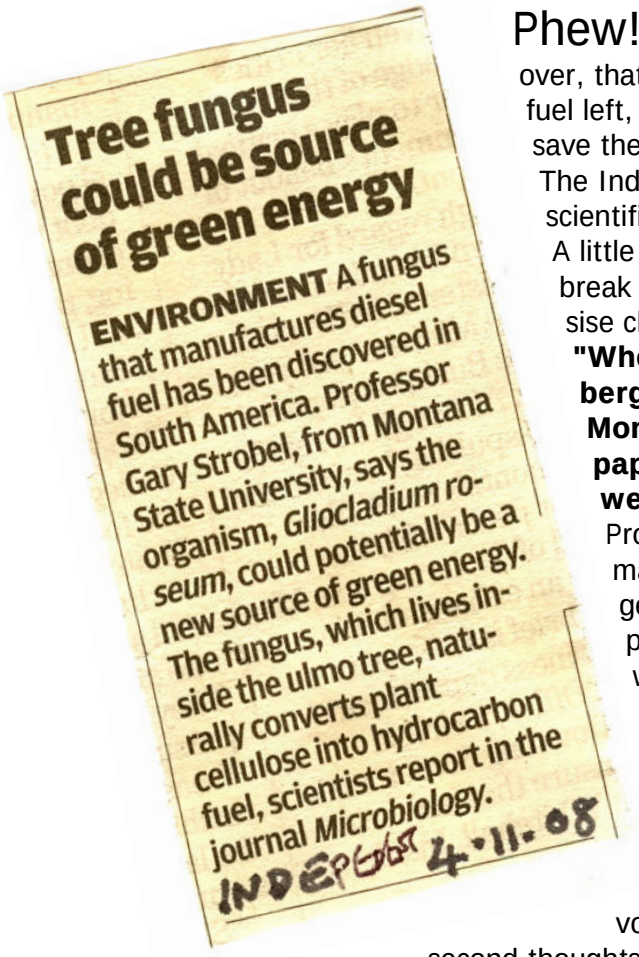
Tunstall Hills Foray 19.9.09

Andrew is a new member based in Sunderland.. He is part of a local Field Group who regularly meet for walks and surveys on Tunstall Hills. (NZ391 543)

A few years ago we happened upon a walk through Chopwell Woods in late September. I think it was the Fly Agarics that drew me in, quite beautiful; afterwards, when I "got my eye in" another world opened up. I must have photographed almost 30 different species that day. I then spent the next month painstakingly trying to identify them with my limited guides. From that day, my favourite will always be 'The Amethyst Deceiver' – I loved the colour of it when I first found it. We attended two subsequent forays at Castle Eden Dene nature reserve hosted by Tom Kirby. We returned home enthused by these walks and the manner in which Tom really brought this subject area to life. Mycology really needs to appeal to youngsters and it was fantastic to see how the younger generation responded on these walks.

Andrew Fox

Just When You Thought it was all Over...



Tree fungus could be source of green energy

ENVIRONMENT A fungus that manufactures diesel fuel has been discovered in South America. Professor Gary Strobel, from Montana State University, says the organism, *Gliocladium roseum*, could potentially be a new source of green energy. The fungus, which lives inside the ulmo tree, naturally converts plant cellulose into hydrocarbon fuel, scientists report in the journal *Microbiology*.

INDEPENDENT 4-11-08

Phew! That IS a relief. Just when you thought it was all over, that we were all doomed to a world of darkness, no fossil fuel left, no cars, no electricity...along comes a tree fungus to save the world ! Alan spotted this most encouraging article in The Independent , known for its no nonsense approach to scientific advances.

A little further research reveals that the fungus is able to break down cellulose into component parts and to synthesise chemicals which are similar to diesel.

"When we looked at the gas analysis, I was flabbergasted," said Gary Strobel, a plant scientist at Montana State University, and the lead author of a paper in Microbiology describing the find. "We were looking at the essence of diesel fuel."

Professor Strobel, flabber totally gasted, has reportedly made what is perhaps an even more revolutionary suggestion. It would seem that there exists a very real possibility that a significant proportion of what the world had always considered to be hydrocarbon "fossil" fuels may be no such thing. Instead, the "crude" oil which is the black gold of our global economy may be the bi-product of a simple fungus just going about its business some half a billion years ago. If you really care about the future then get out there and plant a Poplar tree. This is the favoured "raw" material for future Diesel production. On second thoughts...plant two.

A Special Fungus Foray in Poland 16 to 20 Sep 2010

I have asked Dr Bozena Kalejta-Summers, who lives with her family in Inverness, to arrange a 5 day fungus foray in the famous Bialoweiza Forest. Very little English is spoken in the remote areas of Poland so Bozena, a Polish lady, is needed as an interpreter and she certainly looks after the welfare of the group. This primeval forest adjoining the Belarus border in NE Poland is left to Nature as far as possible. You cannot enter the forest, a strict nature reserve and a World Heritage Site, unless you have an official guide. You cannot take anything into the forest or remove anything so fungi will have to be photographed. This does not mean you enter the forest naked. Do not worry as we will visit the commercial part of the forest with a guide, too, so fungi can be collected in this area. Most naturalists dream of visiting the strict nature reserve which provides a possible view of what lowland Britain would have looked like many years ago. Over 3500 species of fungi have been recorded in the forest some new to science such as *Dendripratulum bialoviesiense* and *Poria albidofusca*. In the forest 9 species of woodpecker breed, numerous plants that are rare or do not occur in Britain can be seen, European Bison make the woods their home but these animals tend to prefer the commercial part of the forest.

The above dates coincide with the annual international fungi exhibition where experts identify and label the species. One of these experts will take us into the strict nature reserve and help in the identification of the numerous species of polypore etc. If you do not mind rising at 0530 hours we will be taken to, hopefully, see European Bison and many other species of animals plus mosquitoes. In 2009 I took part in such an expedition and saw a large bull European Bison and I was back in bed by 0630 hours but it depends on a little luck. Beaver damage and lodges will be seen but the animal itself is quite shy. Wild Boar are usually seen on early morning escapades. A bonfire barbecue has been arranged where burnt sausages held on hazel sticks and wild boar fat pate spread on bread will be available plus the usual vodka or mulled wine. Unfortunately the accordion and horn players seem to have retired but we can dance round the bonfire to our own songs but do not get too drunk beforehand.

We will have to arrive at Warsaw airport around noon for the long drive through the country past ancient agriculture and a few old fashioned wooden houses. On this trip we will stop for snacks included in the trip price. We will arrive at the family guest house in Bialoweiza village in good time for a wash and brush up and maybe a short stroll before the evening meal. Poles like fat food so be prepared for fat bacon and ham. Bread is available in variety but although Bozena gets excited about it I prefer the softer British bread. Never mind it is only a 5 day holiday.

The cost for the 5 days is £660 plus a single supplement of £90 and the air fare which I have to arrange. Normally I fly by KLM from a local airport to Amsterdam then on to Warsaw. The cost might appear expensive but it covers a driver, a guide and almost everything else except private drinks and presents. The provision of wine with our meals and the occasional glass of honey vodka or bison vodka depends on the exchange rate at the time of the holiday. It is very rare that these drinks are not excluded. Tit bits are frequently passed round the minibus.

This is only a brief note and I have full prospectuses. If you are interested please let me know then I will send you the extra details. Already before any publicity two people have registered their interest with me. Places are being offered to NEFSG members and friends first then I will contact other fungus groups. The party size is usually six but a larger minibus can be hired. GS

Here it is..The GREAT WINTER 2009 COMPETITION!!

How you can hide your excitement I do not know....so this is it. A £25 PRIZE for simply spotting as many differences as you can between the two pictures below.

This impressive spread shows only about 30% of the total specimens found on the NWFSG weekend in October.

Whilst it was quite an effort getting the species count up to respectable figures, in a year which has been quite spectacularly low in finds, the display of Hygrocybes was truly magnificent.

The two pictures have been cleverly manipulated using techniques known to only a few. The NUMBER of changes is the question...known to even fewer. Anyone can enter except for those members who work for or who have second-removed cousins who are associated with or directly involved in the development of Adobe Photoshop.

Send in your estimate of the NUMBER of differences to: tectak@aol.com, or telephone 01740 630179 by December 30th 2009. The winner is the NEAREST to the correct number. In the event of a tie, Terry Wogan has been offered the chance to draw the winning participant from a hat....but in the unlikely event of an unscheduled Eurovision Song Contest our Postman will step in. Judges decision is final. Good Luck.

TAK