



Herefordshire Fungus Survey
Group

News Sheet N° 29: Spring 2015



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Welcome to the Spring 2015 News Sheet

In the last couple of News Sheets I have been bewailing the fact that there has not been enough material coming in to make it worth doing two 'normal' News Sheets each year. This time, however, you have all come up trumps - thank you - with the result that I have now sufficient for this issue and made a good start for the next one, as well - we do still need more contributions, though!

Our stalwart Recorder, Jo Weightman, has not only contributed her regular report on our forays of the previous six months, but has given us a rundown of the events leading to the exciting identification of the new Earthstar species, *Geastrum brittanicum*, (p9) first collected by Patricia Morgan in Cusop churchyard. In another article, (p18) she has also highlighted four especially beautiful fungi in 'Some Conifer Species to Die for' and challenges us to name some of our own in a beauty contest. Any takers

Ted Blackwell and Tom Preece have both written about some much overlooked - and very difficult to spot - bryophilous fungi (p10). Tom's article was originally published in Field Bryology, (No. 111, May 2014) and we are very grateful to the Editors for allowing us to reprint it here.

Welsh Rust Group

"Rust Fungus Red Data List and Census Catalogue for Wales"

by Ray Woods, Nigel Stringer, Debbie Evans and Arthur Chater



I would like to bring our new book to your attention and hope it might be of interest.

Below is a bit of background to the book:

Rust Fungi have played an important part in the ecosystem for 1000s of years and even today can cause huge problems for horticulturalists and farmers. However, there are also many Rust Species that live on wild plants without causing problems. There are many common ones but also some, which for one reason or another are rare in Wales. These Red Data List species have been identified and are discussed in the book, many accompanied by a photograph.

The book also contains a Census Catalogue of all the Rust Species recorded to date in Wales along with their host plants and the VCs where they have been recorded. Therefore, it should be easy to check if a find is a new VC record, (but all

A new member of our Group, Michael Valentine, who lives in Lancashire and is a member of the North West Fungus Group, tells us how to use "Focus Stacking" to produce exceptional images of fungi - a subject very near to my own heart! I am green with envy at the results he achieves and know that many other photographers will read this article with great interest.

Our intrepid 'Ruster', Debbie Evans, has been poking about in hedgerows (p14) and come up with a plethora of rusts that we should all be looking out for, described with her usual passion and enthusiasm. Debbie has also been very much involved with the Welsh Rust Group's "Rust Fungus Red Data List and Census Catalogue for Wales" and has asked me to include the letter printed below.

We also have two short pieces:

- one sent in by Rupert Higgins (p11), who said that last February he and Dawn Lawrence had found the remains of a pony hoof on Black Hill SO282 336 with a fine growth of *Onygena equina*, Horn Stalkball. This is a Red Data List species and so is an extremely interesting record.
- the other is written by one of our newer members, Patricia Morgan (p17) who tells us that she has really become a fungus fanatic and waxes lyrical about the winter species, *Flammulina velutipes*.

The deadline for the next News Sheet will be September 20th. Don't forget that the Editor is always looking for **your** contribution(s) to the News Sheet. It is by no means too early to start sending these to me - it does help a great deal if you can send me your articles, photos, etc. as far as possible in advance of the deadline!

Happy reading!

Mike Stroud

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records are useful!) There is a large amount of background information at the beginning explaining the importance of Rust Fungi and more.

The authors' aim is to raise the profile and recording of the Rust Fungi especially with botanists and other naturalists who are most likely to encounter these plant fungi while out recording.

The book has only just been published with a limited print run and we aim to disseminate these to organisations in Wales and beyond and to individuals who have contributed records. Any surplus copies will be available later at a nominal charge. However, the whole book is also available to view and/or download at www.aber.ac.uk/waxcap/downloads/Woods15-RustFungusRedDataListWales.pdf

We hope you might take a look at the document and that you will find it an interesting, well illustrated, (lots of photos), and informative read. There are very few similar books available in GB containing photos of Rust Fungi.

Unfortunately, as said before, hard-copies will be fairly limited but we would still aim to publicise both the book and the on-line version to as many people as possible.

Best Regards Debbie Evans (on behalf of the authors)
debbie.evans@btopenworld.com

RECORDER'S REPORT - September - December 2014

Jo Weightman, Recorder

FORAY RECORDS

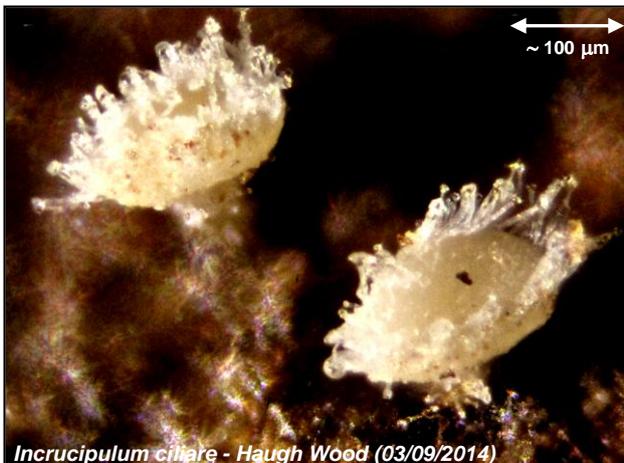
Haugh Wood 03.09.2014

Number of species recorded 149

New site records 19

This all-day foray was well-attended and we were very pleased to welcome back John and Denise Bingham and to be joined by new members Helen and Sue Parkinson. We forayed on the north side in the morning, crossing to the south side after our picnics and a table session with the morning's finds.

New to site species included the Ascomycete *Incrucipulum ciliare*, a tiny fringed white cup and the powdery mildew *Blumeria graminis*.



Incrucipulum ciliare - Haugh Wood (03/09/2014)



Rhodotus palmatus - Moreton Wood (17/09/2014)

For once agarics handsomely outnumbered other groups. Among the most interesting were:

Amanita eliae, recorded here in 1951 and 2001 but nowhere else in the County and rarely recorded in Britain.

Entoloma chalybaeum var. *chalybaeum* one of the charming blue-black Entolomas with black mascara on the edges of its gills, first collected here in 2013.

Entoloma sinuatum - a small colony on the south side along the edge of a path - rarely recorded in the County with nearly half the records dating from the 19th century. Entolomas are all but impossible in the field but *E. sinuatum* has useful macro characters being unusually robust and having yellow gills.

Lactarius azonites is one of the Lactarii with red-staining milk. None of these is common.

Lepiota clypeolaria is a large cream *Lepiota*, the entire cuticle disrupted into scales.

Pluteus leoninus was on the Provisional Red Data list but, although now removed, remains a significant record. It is a yellow-capped species easily mistaken for the much commoner *P. chrysophaeus* but differing in the structure of the cuticle.

Russula pseudointegra a large, red, apple-scented *Russula* associated with oak was locally abundant.

Moreton Wood 17.09.2014

Number of species recorded 48

New site records 28

Conditions were dry and the 14 forayers did well to find anything. The major groups of mycorrhizal species – Amanitas, Russulas, Lactarius etc being absent, most of

the fungi recorded were saprophytic on litter or dead wood.

Host - two species that most usually occur on oak were noted, *Fistulina hepatica* and *Hymenochaete rubiginosa* but on this occasion they were on the closely related sweet chestnut.

Beauty - Two species of remarkable appearance were *Rhodotus palmatus* and *Tricholomopsis rutilans*. The first is a fleshy, richly salmon-coloured agaric with a curiously wrinkled surface – like fingers after a long soak in the bath. It was thought to be on elm which is its preferred host - but fortunately can occur on the dead wood of other broad-leaved trees so the demise of elm does not mean the loss of this beautiful fungus also.

The second was Plums and Custard *Tricholomopsis rutilans* (see front cover), which usually occurs on dead pine.

Size - *Calvatia gigantea* is indeed the giant among British fungi, commonly football-sized. If not kicked! or eaten!, it can grow to be more than an armful. It seems to like a rich feed, tending to appear in vegetable patches and nettle beds.

Rarity - *Coniochaeta velutina* has only been recorded once before in the County (Moccas 2007) and is rarely recorded nationally. It occurs in large numbers as minute 'black dots' each encircled by black hairs. The same piece of rotten wood showed traces of *Eutypa scabrosa* which seems to be even rarer. Both det. Ted Blackwell.

Croft Castle 08.10.2014

Number of species recorded 62

New site records 4

The morning was initially fine and as the desert-like conditions continued, we headed down to the damp bottom of Fishpool Valley. We had some luck but not a lot. Nothing was in abundance, and there was barely a mycorrhizal species to be seen. Most fungi recorded were saprophytic on litter or dead wood.

Clitocybe phaeophthalma could at a glance be one of several *Clitocybe* spp but is readily identified by its sharp smell, said to be reminiscent of chicken coops.

Coprinopsis (formerly *Psathyrella*) *marcescibilis*. The close relationship between *Psathyrella* and *Coprinus* *sl.* has long been known so it is no real surprise that some *Psathyrella* have jumped genera. This particular taxon is very strongly hygrophanous and has many rhizoids at the stipe base but a microscopic examination is necessary to confirm the ID.

Hymenoscyphus vitellinus has a yellow or cream cup no more than 3mm across on a pale stalk. It is usually but not exclusively found on meadowsweet *Filipendula ulmaria*.

Mycena polyadelpa is not rare but very easily overlooked, being pinhead-sized. It has few gills and is fluted like a parachute. It occurs on or under rotting leaves, usually oak.

Pholiota aurivella was in a damaged area high up on a living beech. It is a splendid golden fungus with brown scales, wholly coated with a sticky dripping glaze.

Trichosphaeria notabilis: there are very few records nationally for this pyrenomycete. It occurs on dead wood of broad-leaved trees as tiny rounded black mounds topped by a pointed ostiole. Det. Ted Blackwell. K.

We had time for a picnic lunch and discussion of the morning's finds before the heavens opened, washing away all thought of the planned afternoon session.

Queenswood Arboretum National Fungus Day 11.10.14

Conditions were very dry but a combination of sharp eyes and enthusiasm garnered about thirty species from the site. The most impressive was the second County collection of *Melanoleuca verrucipes*, a recent arrival on our shores. It favours wood chip mulch or, as here, a rich compost. Cap, gills and stipe are white but the last is liberally spotted with fine black scales. K.

Ast Wood 15.10.2014

Number of species recorded 58

New site records 32

As the season remains very unproductive following the warmest September on record, we were relieved to find that recent rain had triggered some activity among, for example, small litter species such as *Mycena*.

About half of the fungi listed above were new site records, mostly of common species – this despite the site featuring frequently in our programme, proving yet again the value of repeat visits. The most rewarding spot was in and around sawdust and wood chips in the working area near the gate. We were otherwise more or less confined to the managed rides as bramble is rampant under the oaks.

The most interesting records were:

Parasola kuehneri - this is one of several 'Japanese parasol' species, formerly called *Coprinus*. They include *P. auricoma* - also on the list - and can only be distinguished under the microscope by spore shape and size.

Periconia cookei – is visible under the hand lens as a 'fur' of dark hairs each tipped with a minute black sphere. It is common on dead nettle stems lying on the ground but often escapes notice.

Phaeohelotium geogenum (see photo on next page) - this is an unremarkable white, top-shaped asco with remarkable spores, three to four times larger than others in the genus. It occurs on rotten wood or, as in this case, rotten acorns. A 2nd County record for a rarely recorded species.

Pseudocraterellus undulatus (see photo on next page) - this greyish fungus is somewhat resembles a smaller more clustered Horn of Plenty, *Pseudocraterellus cornucopiae*, but the funnel, although deep, does not extend into the stalk. 2nd vc36 record.

Small, scattered white spots on a stick were identified by Ted Blackwell as *Trichothecium roseum* – as the name suggests, the fungus is pink at maturity. This is only the fourth Herefordshire collection since the nineteenth century but the species is probably overlooked rather than uncommon.

Mycorrhizal species were all but absent – so the find of a solitary *Russula pseudointegra* ended the day on a high.



Melanoleuca verrucipes - Queenswood Arboretum (11/10/2014)



Phaeohelotium geogenum - Ast Wood (15/10/2014)



Pseudocraterellus undulatus - Ast Wood (15/10/2014)



Leucoagaricus serenus - Homme House (29/10/2014)



Entoloma scabiosum - Homme House (29/10/2014)

Homme House 29.10.2014

Number of species recorded 104

New site records 71

A good, well attended foray. We were very happy to welcome three new members Jules Agate, Sophie Cowling and Helen Reeves.

This new site is very large, comprising woodland, grazed parkland and gardens and we did not get very far. Among the many fungi recorded were *Geastrum triplex*, *Helvella atra*, *Macrocyttidia cucumis*, *Lepiota subincarnata*, *Leucoagaricus serenus*, *Tarzetta catinus*....

Notes below on just a few:

Chlorophyllum brunneum - 2nd vc36 record.

Chlorophyllum is the new name for those *Macrolepiota* spp with a naked stipe -ie lacking zigzag scales - and flesh which reddens on cutting or bruising – loosely, the inedible Shaggy Parasols. *C. brunneum* differs from the others because it has a distinctly marginate bulb, often grows in clusters and is not uncommon under conifers. The cap has brown scales in the centre and in this respect looks more like the edible Parasol Mushroom, *Macrolepiota procera*, but the ring is simple, not double.

Clavaria straminea - 1st vc36 record. This club (coll/det. Peter Roberts) is listed as Near Threatened in the 2006 Red Data list. The yellow *Clavarias* were written up by Peter in *Field Mycology* 9(4) p144 where he describes *C. straminea* as "pale, straw-coloured"...with "a more deeply coloured yellow to orange-brown stipe". It typically occurs in unimproved grassland and may prove to be more common than originally thought.

Entoloma infula - 2nd vc36 record - a yellow-brown species with a deeply striate margin when moist, a small central papilla (bump) and a slender stipe. It occurs in broad-leaved woodland as well as in unimproved grassland. Coll/det. Peter Roberts.

Entoloma scabiosum - 2nd vc36 record. Nearly all *Entoloma* spp are smooth-capped but the cap of *E. scabiosum* has conspicuous grey-brown scales. Widely scattered in the British Isles but rarely recorded.

Nether Wood 12.11.2014

Number of species recorded 68

New site records 39

The site comprises a conifer plantation on a hillside sloping down to a boundary stream. There is some scattered broadleaf along the main track and present naturally as a fringe to the stream.

Previous visits have been in the summer and earlier in the autumn, so this was the first November foray. Fungi were not prolific, even when it was possible to get off the forestry track. An attempt to reach the broadleaf bottom proved hazardous in the thick mud. The more interesting species seen included *Hemimycena lactea*, which was frequent in the litter under some mature conifers, the bright orange *Lactarius aurantiaca*, *Poculum firmum*, a mini-goblet which occurs on fallen oak branches and the

green-black growth of *Helminthosphaeria clavariarum* over the base of *Clavulina cristata*.

A large example was found of the myxo, *Mucilago crustacea*, which hangs like a sagging white bag on grass or herbaceous stems before turning black and crusty. It seems to have been common in 2014. *Capronia pilosella*, det. Shelly Stroud, is a new County record, has only a few entries on the FRDBI and is probably overlooked. It is visible as tiny black spherical to pear-shaped mounds emerging through decorticated wood, each with a single ostiole (opening for the spores) surrounded by black hairs.

The 39 new site records attest to the overall success of the visit even if there was little to get wildly excited about.

Barnett Wood 26. 11. 2014

Number of species recorded 46

New site records 9

We went in at the top of the wood under the oaks and were welcomed by the owner, who had opened the gate for us.

Three of the species found had only been recorded once before at this site, one - the Jelly Baby, *Leotia lubrica*, is easily overlooked as it occurs among fallen leaves. *Tremella foliacea* hangs off branches in loose clusters of leaf-like brown jelly, but only when conditions are suitably damp. The third, *Lactarius uvidus*, one of the violet staining milk caps, is far from common, but has also been recorded across the road in the Wigmore Rolls.

There were some surprises among the new records. *Biscogniauxia nummularia*, *Scleroderma citrinum*, *Crepidotus epibryus*, *Hymenoscyphus repandus* and *Phlebia tremellosa* are all common species, but this underlines the value of repeat visits.

Interesting new records included four basidiomycetes:

Cortinarius anomalus is a medium-sized species with a silky, greyish cap, violaceous gills when young and faint lilaceous or pale yellow girdling on the stipe.

Lachnella alboviolascens is a cross-dresser – ie it looks like an asco as it has a saucer-like structure with very hairy, in-rolled edges and a flat greyish-white disc.

Mycena polyadelpa is also common, but is only found by burrowing in damp, dead leaves, usually of oak. It is a minute white species with hardly any gills and those it has are decurrent.

Hygrophorus nemoreus - this fungus can be mistakenly recorded as *Hygrocybe pratensis* since they look so much alike. Its occurrence in oak woodland should serve as an indication that it is not the meadow waxcap - but, as we know, waxcaps do also occur in woodland. Indicators for *H. nemoreus* are its more fibrillose or squamulose cap and a mealy smell. It is listed as Near Threatened on the

2006 Red Data List. In Herefordshire, there are just five other known sites.

Moccas Park 10.12.2014

Number of species recorded 30

New site records 2 (including NNR) or 30 (taken alone)

This, the last meeting of the year was set up as an 'indoor foray' with an option to go into the NNR if weather permitted.

In the event, the day was bright and breezy and the ground all but frozen. We tried for a lively dash in the Park across the road, but as entry to the NNR itself was unwise (shooting within), we opted for a quick look in the parkland on the north side of the road where there are mature and veteran trees. Consequently, all the records could be considered 'new' but it is of interest to compare our findings with the usually visited NNR. In that context, there were two new overall site records - *Sporidesmium altum* (det. Ted Blackwell) for which there is just one previous County record – from Yatton Common, during our survey of several commons in 2005. This was growing in/over/with some *Hyphodontia sambuci*. The second was the dung fungus *Pilobolus kleinii* (also det. Ted) which has larger spores than the more frequently recorded *P. crystallinus*.

Also interesting: *Chlorophyllum brunneum*, a species which has emerged from the complex around the reddening parasol mushrooms previously placed in *Macrolepiota* (see notes from Homme House, above). *Agaricus litoralis* (formerly *spissicaulis*) is a robust, species with a white scaly cap and rather poor ring.

Several members brought in specimens for the indoor session held in Moccas Village Hall. Species included *Stropharia inuncta*, Sned Wood (a new site record) and *Marasmius epiphyllloides*, Upper Grange Bacton.

OTHER HEREFORDSHIRE RECORDS

A quick body count has turned up at least 15 people, members and friends, who have contributed records – all are most gratefully received, be it of a single species or 200+. Many are the all-important base line species without which no County records make sense, others vary from uncommon to rare. Very many thanks to you all. Some appear below – it grieves me that I can include only a few. (N.B. One or two date from the first half of the year).

Boletus legaliae – under oak, Upper Grange Bacton 06.08.14. Coll. C. & S. Hunter, det. G. Kibby.

Entoloma bloxamii – a very uncommon species of unimproved grassland, Nupend, 09.09.14. Det. S. Spence.

Geastrum triplex – Ashley Moor, 13.01.14. coll/det. Steve Rolph.



Gomphidius maculatus - Wigmore Rolls (21/09/2014)



Lactarius volemus - Crow Wood & Meadow (11/10/2014)



Paecilomyces marquandii - Hanway Common (07/10/2014)



Phylloporus pelletieri - Brimfield Common (08/11/2014)

Gomphidius maculatus - under larch *Larix decidua* in close company with a large population of *Suillus tridentinus* with which it may have a relationship. County scarce and nowhere common. Wigmore Rolls, 21.09.14. Coll/det. J. Pitt & J. Weightman. K. Also recorded but with *Suillus grevilleiae* in Fishpool Valley 25.09.14. Coll/det. J. Weightman.

Gyromitra esculenta (almost certainly, from photo), garden Stapleton Castle, 23.03.14. Coll/det. T. Griffiths.

Hygrocybe calyptiformis Awnells Farm, Much Marcle, 21.11.14. Coll/det V. Geen.

Hygrocybe citrinovirens - Colwall, 27.08.14. Coll/det C. Greenway.

Lactarius volemus (almost certainly, from photo by B. Davis) Crow Wood and Meadow 11.10.2014. Coll. B. Davis, det. J. Weightman

Leccinum aurantiacum Great Doward 18.09.14. Coll/det. I. Draycott.

Lyophyllum connatum – white, clustering species smelling of pea shucks – Penyard Hill, 21.10.14. Coll. Judith Oakley, det. J. Weightman.

Melanotus horizontalis – like a small brown *Crepidotus* - Bodenham Moor 11.10.14 coll. M Hawkins, det. J. Weightman.

Morchella esculenta – in vegetable debris, Little Marcle, 30.04.14. Coll/det. J. Wynne-Jones.

Paecilomyces marquandii – colonises the common waxcap *Hygrocybe virginea* and turns it violet, Hanway Common 07.10.14. Coll/det. J. Weightman. K.

Phylloporus pelletieri – This is a bolete that looks like an agaric as the pores are so stretched as to resemble gills with interconnecting ridges. Cap is red-brown and the 'gills' bright gold. Brimfield Common 08.11.14. Coll/det. J. Weightman. Rarely recorded in Herefordshire and a national BAP species.

Postia guttulata- first recorded in Herefordshire and the UK in 2013. A further site in the County at Wapley Hill 17.10.14. Coll/det. J. Weightman. K.

Psathyrella maculata - (see photo next page) A species with dark scales appressed to the cap, on indet. broadleaf stump Wigmore Rolls, 21.09.14, a new County record, nationally very rare and classed as Vulnerable on the Red Data List (2006). Coll/det. J. Pitt & J. Weightman. K.

Russula pelargonii A small species with a violet tones on the cap and a characteristic, strong smell of *Geranium*. In the valley bottom, Wigmore Rolls, 21.09.14, another County first and nationally rare. Coll/det. J. Pitt & J. Weightman. K.

Sarcodontia crocea – (noted as a Stop Press in the last newsletter.) –occurring in a long crack in a living apple tree near Much Marcle. Found by Viv Geen, Representative of the Countryside Restoration Trust and coll.det.conf. by JW on 06.11.14. A County first record for a nationally rare species. K.

Sparassis crispa – Bircher Coppice, 21.09.14. coll/det. A. Paterson.

Taphrina tosquetii – this fungus causes gross deformation and enlargement of alder leaves, especially on young trees, Bodenham Lake 23.08.14. Coll/det. E. Blackwell.

Tapinella (formerly *Paxillus*) *panuoides* – a sandy-coloured bracket with golden gills, on a pile of mixed logs, Lea and Pagets Wood 07.10.14. Coll/det. J. Weightman.

OUT OF COUNTY RECORDS

Chromocyphella musicola on the moss *Hypnum cupressiforme* over bark, nr Wootton Bassett, N. Wiltshire, coll. M. Rayner, det. E. Blackwell.

Favolaschia calocera – orange ping pong fungus - in Devon (reported in The Times).

Geastrum sp – (re the apparently ‘new to science’ species reported in the last News Letter) - further collections have been made in Wales and, in December, in Surrey. This has now been named as *Geastrum britannicum* - see also below, ‘The *Geastrum* Saga’.

Laccaria fraterna a species only known from *Eucalyptus* litter, November, RBG Kew, coll/det A. Henrici and G. Kibby. Do you have a *Eucalyptus* in your garden?

Leucocortinarius bulbiger during BMS foray based at Gregynog Powys October 2014. The first known collection for 137 years! Recorded at Dinedor (south of Hereford) in 1875!

Volvariella surrecta on *Clitocybe nebularis* (photo by Les Hughes) Lancashire November 2014, (coll/det Les Hughes). Not yet recorded in Herefordshire.

A very warm THANK YOU to John Bingham, Ted Blackwell and Shelly Stroud who have given much time and dedication to identifying specimens.

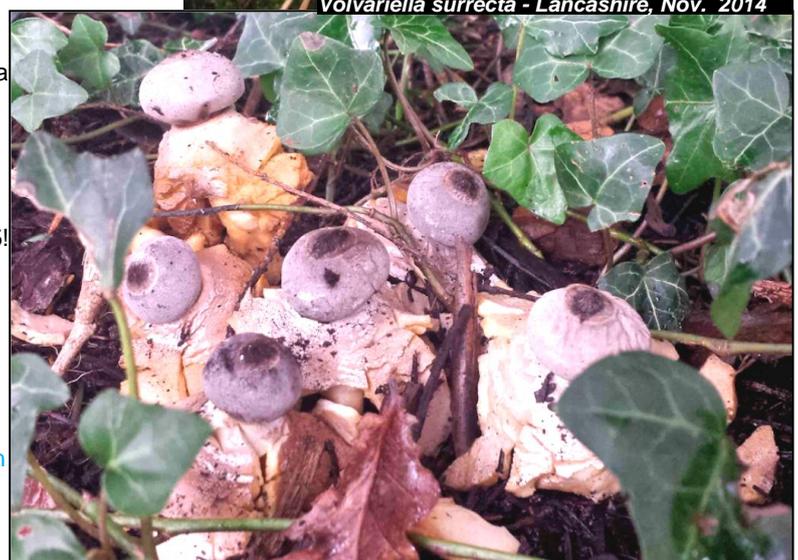
My thanks also to all at Kew who have helped with advice and identification of the more critical species.



Psathyrella maculata - Wigmore Rolls (21/09/2014)



Volvariella surrecta - Lancashire, Nov. 2014



Geastrum britannicum - Cusop Churchyard (13/11/2013) Photo by P. Morgan

THE GEASTRUM SAGA

Jo Weightman

The saga travels in time and across the UK.

Patricia Morgan wrote the first page when she showed me a photograph she had taken of an earthstar spotted under a yew in the churchyard at Cusop. The subject was indeed an earthstar - a *Geastrum* - but it was not possible to identify it to species. This was on 13.11.13.

On visiting Cusop where, thanks to Patricia's description of the site, I was able to locate the colony of earthstars, I collected a sample specimen. The fungus was not in its prime, but enough remained for me to be puzzled. In particular, the small spores (3 - 3.5 µm) matched no species within the range of 'possibles'.

More thoughtfully, on 09.12.13 I returned to the site to collect a second and less distraught specimen. After consultation with Ted Blackwell, who agreed that we had a problematic collection, I posted off the material to Alick Henrici.

Staff at Kew were soon also involved and Alick kept me posted with the progress of investigations, which involved wider consultation and a trawl through all British and then the latest European literature on the subject – all to no avail. Nothing fitted our material. The search moved to the Herbarium where boxes holding possible species matches were carefully checked.

By March 2014 two more examples of this 'mystery' *Geastrum*, from Hampshire and Powys, had been found in the *G. fornicatum* box and a further three from Norfolk were lodged under *G. quadrifidum* - all, I believe, with a note that the ID was provisional.

Early in 2014, while visiting the churchyard at Ashford Carbonel in Shropshire to enjoy the ancient yews, I found a colony of this same unknown species and submitted my sample to Kew.

To turn the pages back a year: early in 2013 I had been referred by the HBRC (Herefordshire Biological Records Centre) to the churchyard at Ashperton where a local resident, Wendy Myles, had been intrigued by earthstars growing under a yew. At the time, I tentatively ascribed it to a fairly common British species, but niggling doubts remained. Tidying up my study, early in 2014 and while excitement was mounting, I came upon my labelled sample from that visit, checked the spores and realised



that I was holding a good example of the 'mystery'. This specimen joined the others at Kew.

The consensus of opinion was that the earthstar was new to science and would have to be formally described. This is not something that can be dashed off and there is always a backlog of new species awaiting formal description. Patience was required.

Meanwhile, and turning the pages back another few years: the dried *G. quadrifidum* specimens at Kew (including the three now considered not to be *G. quadrifidum*, but the same as the Herefordshire and Shropshire collections) had been subjected to DNA analysis and the results published in Genebank.

Then J.C. Zamora, a Spanish PhD student, noting the discrepancies in the Genebank data between the 'true' *G. quadrifidum* and those now recognised at Kew as different and distinct, requested material from Kew for study.

Leaping now to the last page: in February 2015 a formal description of the new species was published in *Persoonia* 34:143 (2015) by Zamora et al. The earthstar has been named *G. britannicum* in recognition of the fact that, to date, it has not been found outside the British Isles.

Geastrum britannicum

You will all be hoping to find your own! Here are the diagnostic field characters, starting at the top:

- Erect, grooved pointed 'beak' when fresh
- Distinct halo around the beak which is surrounded by a rim
- Sac may be coated with fine mica-like scurf (see adjacent photo)
- Sac may have a hanging collar-like shape at the bottom
- Sac is raised on a stalk
- 4 - 5 ERECT 'legs'
- Whole structure standing on a saucer of matted hyphae and debris
- Habitat: mostly under churchyard yews, but also known under roadside oak and pine.

It is the **combination** of these characters that is important. If only one or two characters are present, your find may be *G. fornicatum*, *striatum*, *quadrifidum*, or even *berkeleyi*. If you think you have found *G. britannicum*, examination of the spores is essential as they are smaller than all other UK species.

A 'be aware' note: earthstars, unlike the fleshy toadstools, hang about for months, drying out and losing bits. The beak may collapse, the legs may lose their anchoring saucer and then spread, star-like.

Please contact Jo if you think you have found it.

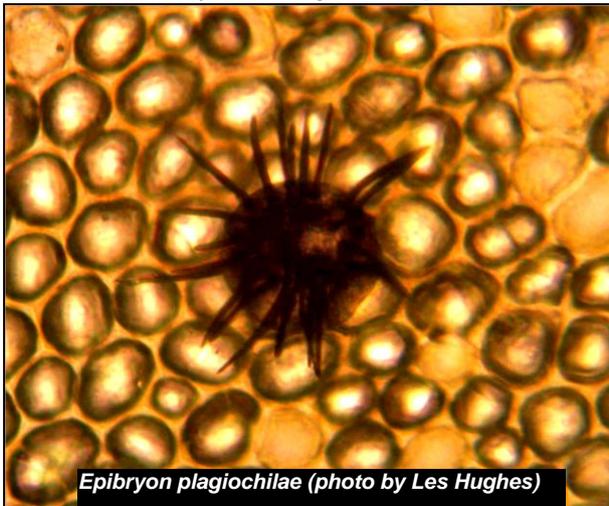


HIDDEN FUNGI ON MOSSES AND LIVERWORTS (BRYOPHILOUS FUNGI)

Ted Blackwell

There is a group of diminutive fungi on mosses and liverworts that go unnoticed and are seldom recorded. These moisture-loving plants are a fruitful source of small-to-very-small fungi, and of even smaller microfungi. In fact, Spooner & Roberts in their book *FUNGI* say that some bryophilous Ascomycetes have the smallest known fruitbodies, less than 50 µm in diameter and sometimes as small as 18 µm across. Indeed, some other Ascomycetes have spores larger than these fruitbodies.

A microscopic example being studied by Dr Tom Preece, who kindly sent it to me, is *Epibryon plagiochilae*. Its fruitbody is about 60 µm diameter with spidery 'legs' about 35 µm in length. In the illustration the bubble-like background are cells of the liverwort leaf on which it is growing. (*Epibryon* means 'on Bryophytes'; *plagiochilae* means 'on the leafy liverwort genus *Plagiochila*').



Epibryon plagiochilae (photo by Les Hughes)

It has been remarked by a leading specialist on Bryophilous Fungi (Dr. Peter Döbbeler) that very few bryophilous species are detectable under field conditions because the fruitbodies are often less than 100 µm diameter, are often hyaline or light coloured and tend to be concealed below or between the leaves. In consequence, moss and liverwort specimens collected as potential hosts

must be examined using a stereo microscope. There are more details on the link, from which additional links take you to illustrations of these microfungi:

http://www.sysbot.biologie.uni-muenchen.de/en/people/doebbler/why_study_bryophilous_ascomycetes.html

In addition to micro-Ascomycetes there are several moss-colonising Basidiomycete fungi, which being generally larger and more conspicuous are perhaps better known. A small cup-shaped fungus *Chromocyphella musicola* (about 3 mm diameter) found growing on moss was sent to me for identification. It is a parasite of bark-colonising mosses ultimately killing affected fronds. The *Chromo-* component of the scientific name implies colour, but in this instance refers not to the fruitbody but to the reddish-brown spore print. This in contrast to the white spore prints of species originally grouped with it in the genus *Cyphella* (the name means 'the hollow of the ear'). A number of the latter have changed genus and can now be found in *Aleurodiscus*, *Arrhenia*, *Calyptella*, *Flagelloscypha*, *Rimbachia*, etc., all tending to be cup- or disc-shaped. The species name *musicola* means living on mosses (nothing to do with music!).



Chromocyphella musicola (photo by Paul Bowyer, Bath)

RIMBACHIA NECKERAE: A RARE MOSS FUNGUS

(First published in *Field Bryology*, No. 111, May 2014)

Tom Preece

The mycologically definitive "Ainsworth and Bisby's Dictionary of the Fungi" (Kirk *et al.*, 2008) tells us that bryophilous fungi "seem to be a very frequent, universal phenomenon" and that they are "generally totally neglected, despite their number and frequency".

Having enjoyed finding and doing some simple experiments with fungi on lichens around our house near Oswestry (Preece, 2011; 2013) and spurred on by the notion that moss fungi are common, I decided to search for these near our house and in the nearby Nature Reserve. After 2 years of drawing a blank,



Rimbachia neckerae (photo by Gilbert Bovay, Société Mycologique Vaudoise)

Sam Bosanquet helped me by loaning me a lot of papers by Döbber about bryophilous fungi. Döbber has drawings of many moss fungi, in particular ascomycetes. These are usually incredibly small (1.0 to 1.5mm or less) and on a single leaf of a moss. In an important paper he writes (Döbber, 2002) "very few bryophilous fungi are ever detectable in the field" and states in several others that

large quantities of mosses should be carefully examined using a stereomicroscope. I am now continuing to search as he suggests. Since BBS members examine vast numbers of mosses, it must be that these universally occurring fungi are very difficult to see, and this accounts for the rare finds reported in *Field Bryology* (Fisk, 2000; Bosanquet, 2007).

However, I had a surprise on January 1st 2012. Looking at a mixture of *Didymodon rigidulus* and *Scleropodium cespitans* growing on an unusually damp set of paving stones under our north-facing bedroom window, I saw a quantity of what looked like fine pure white dust. Microscopy quickly showed this was a fungus, many individuals cup-shaped, not an ascomycete, but plenty of very small basidiospores. Sent to Kew, Martyn Ainsworth identified it as *Rimbachia neckerae*, a rare cyphelloid and clamped basidiomycete, and pointed out that Shropshire is one of two English counties in which this fungus has been found – in 1976. There are very few other records (Herefordshire, 1965; Glamorganshire, 2000; two records from West Sutherland, 2003 and 2005). You too may find it. Look out for “white dust” or tiny white crumbs! My material is at Kew: K(M)17374.

Acknowledgments. I wish to thank Martyn Ainsworth for his prompt work; Sam Bosanquet for confirming my shaky moss identifications and help with reprints; and Ceridwen Stringer for the typing. The Editor is grateful to those at

Field Bryology for permission to reprint the article and Gilbert Bovay for providing the image.

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ONYGENA EQUINA ON THE BLACK HILL

Rupert Higgins

On 18th February 2015 Dawn Lawrence and I were walking across the bracken-covered eastern slope of the Upper Olchon Valley, on the side of the Black Hill (SO282 336), when I noticed the detached hoof of a long-dead pony. Close examination showed an abundant growth of small, stalked, club-headed fungal fruiting bodies growing from the keratin. The heads, which like the stalks were off-white, bore short spines or pyramidal warts. The object had an unpleasant smell, suggesting that decay was ongoing.

Searches of reference material quickly showed the fungus to be Horn Stalkball, *Onygena equina*, one of only two British members of the genus - the other recorded from feathers and owl pellets. *Onygena equina* grows on old hoofs and horns and is a Red Data Book near-threatened species, presumed to have declined due to regulations governing farm hygiene and the disposal of dead livestock. The National Biodiversity Network gateway has records from 28 10km squares in Britain, concentrated in the eastern Scottish Highlands and the Pennines. The closest record to the Black Hill is near Dolgellau, Gwynedd, although it was also found in 2012



near Kidderminster, Worcestershire, a record not shown on the gateway. I was fortunate enough to be contracted by Natural England to carry out field work across the Herefordshire portion of the Black Mountains in 2013. At that time there were large numbers of recently dead ponies scattered across the site, I assume as a consequence of poor foraging during the exceptionally late spring of that year. Most of the corpses were in small stream gullies at the bottom of the common land, presumably where the unfortunate

creatures had sought shelter. This suggests that the area might produce records of other fungi growing on horn or bone; the remains will be much easier to locate before the bracken has grown.

Often, when showing my fungi photographs to others, and when “focus stacking” is mentioned, I have been asked to explain the process. Focus stacking uses the principle of combining several separate photos, each focussed at a slightly different distance, into one resultant image, thus enabling a much greater depth of focus than would otherwise be possible. It is a technique which has only become available since the advent of digital cameras and personal computers, and requires specialist software, purpose designed for the task.

The technique can be applied to any type of shot, but is most suited for use with what are loosely termed close-up or “macro” photographs, and particularly with smaller fungi and myxomycetes, where the subject is to be reproduced at life-size or greater. Focus stacking software is commercially available from several sources, but my initial attempts were made with



Photo 1: *Microglossum viride*

software by the name of CombineZM. The results of which were so successful, I have never felt the need to change to anything else.

To his great credit, Alan Hadley, the software developer, has made CombineZM, (along with its successor CombineZP), available as completely free, none time limited – full version downloads, from his website at:

<http://hadleyweb.pwp.blueyonder.co.uk/>

The specific CZM download which I always use is:

<http://www.hadleyweb.pwp.blueyonder.co.uk/CZM/CombineZMFull.msi>

Note: In order to have the best chance of obtaining a successful focus stack, it is essential that the series of images used is taken with stacking in mind. – CZM will only successfully stack images that are properly aligned.

Care should be taken to ensure that the entire depth of the subject to be stacked is fully covered by taking sufficient individual exposures, each one having its focus adjusted slightly.

It follows that the camera / lens combination must not be moved during the whole sequence, and a good solid tripod along with the best possible positioning of that tripod on hard ground, is more or less essential.

For preference, the series of images needs to start very slightly in front of the subject, (to ensure that the front-most part is properly in focus), and work further and further into it. Take the first shot, and then look through the viewfinder for the point on the subject at which the image is just going out of focus. Refocus on that point, (being extremely careful not to move the camera/subject alignment), take another shot, and repeat as necessary until the whole depth of the subject has been covered.



Photo 2: *Isaria farinosa*

The full series of photos may then be opened and stacked in CombineZM in accordance with the step by step instructions below:

- Open CombineZM.
- Click on – File.
- Click on – New.

The small browser window opens.

- Browse for the images you want
- highlight them and
- click on – Open.

The small “Progress” window opens and your photos load up.

Once they have loaded, the main CZM window opens again with one of your photos showing.

- Click on – Macro.
- Click on – Do Stack.

The small “Progress” window opens again and stays there showing the various processes going on.

When the stack is complete, the “Progress” window disappears, and your stacked photo is displayed in the main CZM window.

photo is displayed in the main CZM window.

- Click on – File.
- Click on – Save Frame/Picture As.
- Give the stacked photo a name.

Note: - At this point, make sure that you specifically designate, and know which folder the image is saved to, as it may not automatically go into the same folder that the individual photos came from. When I first used CZM I had not appreciated this and had to search the computer to find where the stacked image had gone.

- Click on – Save.

A small box opens up asking what quality you wish to save at - I always say 100%

When you click on that box, the photo is then saved to wherever you designated.

- Click on the red X (exit tab) at top right hand corner of screen to exit the programme altogether.

A small box comes up saying, "Do you wish to save anything else before quitting CombineZM?".

- Just click "No", and the programme closes.

You may then navigate to your stacked photo and open it in your image editing software of preference to edit or "tweak" it as necessary.

General points:

- i. There will always be a distorted "fringe" around the extreme frame edges of the stacked image. This is due to the stacking process. A small crop of the frame edges is all that is required to remove it.
- ii. Although the number of individual frames that can be stacked is not limited, the speed of the stacking process will depend upon that number, along with the processor speed of the computer. I would suggest trying initial stacks of not more than three individual frames until you are conversant with the speed of the overall process on your specific computer.

- iii. Badly misaligned frames may result in "digital artefacts" appearing on the final stacked image. These artefacts might manifest themselves as coloured streaks, fringes, blobs, etc., but their presence will always seriously diminish the quality of the final image. They can sometimes be easily removed by cloning out with suitable image editing software, but it is much more preferable to prevent their occurrence in the first instance by taking sufficient numbers of frames for the depth of focus required and ensuring that the camera remains completely unmoved during the sequence.

- iv. I have previously installed and used CombineZM without problems on PC's using WindowsXP (Service-pack2), and Windows Vista, and am currently using it on a Windows8.1(64bit) machine.

Some of my photographs - focus stacked as described above:-

- Photo 1 - *Microglossum viride* (a focus stack of 4 images).
Photo 2 - *Isaria farinosa* (a focus stack of 6 images).
Photo 3 - *Scutellinia scutellata* (a focus stack of 5 images).
Photo 4 - *Ophiocordyceps ditmarii* (a focus stack of 11 images).
Photo 5 - *Physarum album* (a focus stack of 27 images).
Photo 6 - *Arcyria denudata* (a focus stack of 33 images).



Photo 3: *Scutellinia scutellata*



Photo 4: *Ophiocordyceps ditmarii*



Photo 5: *Physarum album*



Photo 6: *Arcyria denudata*

What could be more pleasant than a lazy stroll down a sunny lane in spring, summer or autumn, admiring the hedgerow plants and flowers? For the dedicated ruster an enjoyable walk can also yield a bumper harvest of rust records. The plants present will vary considerably with the type of hedgerow or verge, the soil and part of the country. Many may be potential hosts to a rust fungus. Thus, the scope for recording a number of different rust species from this habitat is enormous and far too extensive to be included in a single article. I intend to describe some of the more common ones, my favourites and a few rarer ones. All are well worth looking for when suitable hosts are present and I want to encourage everyone to just go out and look!

Violet Bramble Rust, *Phragmidium violaceum* is a very common species wherever Blackberry, *Rubus fruticosus* agg. is growing. There are 2 other possible rust species on the host, but this is the most obvious one with the leaves often displaying bright crimson-red and purple spots on the upper surface, with yellow uredinia and groups of black telia on the underside. The large, dark-brown, mostly 3-septate, (4-celled) teliospores, are well

worth looking at more closely under a high-power microscope, and even with a good hand lens or macro photo it is possible to see individual spores.

For the expert botanist who can identify the *Rubus* to individual species, the number of records generated could be huge. In GB the effect of the rust on the Bramble is usually minimal, but aggressive strains have been identified and used with variable results as biocontrol agents in Australia, New Zealand and Chile, where the introduced non-native plant has become a serious weed problem. Of the 2 other rusts,

Phragmidium bulbosum can also sometimes produce red/purple leaf spots, although a more diffuse colouration and infection is more usual. It is far less common, only occurring on a small number of *Rubus* species and it has mostly 5-septate spores.

Pale Bramble Rust, caused by *Kuehneola uredinis*, occurs more commonly on the Bramble stems as well as the leaves; the tiny uredinia are pale yellow and the telia are whitish or yellowish containing hyaline teliospores. (See suggested texts for full descriptions of these and the other rusts).



Phragmidium violaceum on *Rubus fruticosus* agg.

Puccinia annularis on *Teucrium scorodonia*

Frommeëlla tormentillae on *Potentilla x mixta* and spores

The pungent leaves of Wood Sage, *Teucrium scorodonia*, a frequent plant of hedgerows, can carry a microcyclic rust *Puccinia annularis*, evident as pale spots on the upper surface and corresponding tan-brown pustules underneath. This rust seems to be very attractive to certain insects and their larvae and it's very common to just find holes where the telia were on the leaf. However, a careful scrape of the area and examination under the microscope can often still

demonstrate the teliospores to confirm the record.

An uncommon rust to look for is *Frommeëlla tormentillae*; this rust occurs on members of the Tormentil Complex including *Potentilla erecta*, *P. reptans* and *P. anglica* and I have records on the crosses *P. x suberecta* and *P. x mixta*.

The plants often spill over walls and banks along the lane and discoloured leaves with reddish marks should be examined underneath for the orange uredinia and later the brown telia of the rust. This is probably a very under-recorded species and needs to be carefully searched for as it is not as obvious as some rusts. The brown teliospores have 5-7 cells, (mostly 5) with orange contents and are slightly constricted at the septa. They somewhat resemble those of the genus *Phragmidium* to which *Frommeëlla* is related. There is a much rarer rust *Phragmidium potentillae* which can also infect some *Potentilla*

species and is difficult to differentiate from the former rust if only uredinia are present, but it differs in the teliospores that are produced.

Where Oak trees are growing in the hedgerow keep an eye out for another uncommon/rare rust *Cronartium quercuum*. The yellow uredinia can be searched for in

the autumn on the undersides of Oak leaves and, in my experience, the rust generally occurs on the softer leaves of saplings or suckering growth. I have only ever found quite light infections and have had to scan lots of leaves to find infected ones. However, Ray Woods has seen much heavier infections, including on the acorns, (pers. comm.). I myself have records on Turkey Oak, *Quercus cerris*, as well as Sessile Oak, *Q. petraea* and it has been recorded on other Oak species. There are no recent records from England, but there are several from Wales and, with the Welsh border so close to Herefordshire, it could well turn up there. (Woods *et al* 2015).

Nettle Clustercup Rust, *Puccinia urticata*, on Common Nettle *Urtica dioica* must be one of the most spectacular of rusts. The rust can gall the leaves and stems and often evokes beautiful pink, orange or yellow reactions on the infected plants. This rust is actually a complex of heteroecious rust species using 2 hosts. The aecia are produced on the Nettle and the second host is a Sedge (*Carex* species), where the brown uredinia and telia are formed. The rust can be named when found on a Sedge, but it is not possible to identify the specific species of rust from the aecia on the Nettle, (although DNA analysis is possibly now a viable option for the researcher). In some seasons Nettle rust is particularly prevalent and every patch of Nettles I visit exhibits heavily infected plants, suggesting that perhaps more virulent strains are present in that year? It is an excellent 'demonstration rust' and viewing the lovely yellow, flower-like aecial cups with a hand lens never fails to amaze people. Definitely a favourite of mine and very photogenic!



Cronartium quercuum on *Quercus petraea*, Sessile Oak



Puccinia urticata on *Urtica dioica*, Common Nettle



Puccinia difformis on *Galium aparine*, Cleavers or Goosegrass



Puccinia chaerophylli on *Myrrhis odorata*, Sweet Cicely

Cleavers (or Goosegrass), *Galium aparine*, renowned for its sticky seeds is another very common hedgerow plant. Yet, despite the huge number of plants around, it is only occasionally found infected by *Puccinia difformis*. This is considered to be a rare rust in Wales and I have only three VC49 and four VC52 records. (Woods *et al* 2015). It can be easy to spot when the plants are heavily infected, as the narrow leaves exhibit pinky-purple lesions and there are small yellow aecial cups and characteristic black, tarry telia on their undersides, as well as on the stems. No uredinia are formed, in contrast to *P. punctata*, which commonly infects other *Galium* species. In lighter infections, only a few leaves may exhibit any signs, so one needs to be aware as it is probably under-recorded.

Few verges are free of the showy white flowers of Umbellifers in spring and summer and there are rusts to look for on them. Where Sweet

Cicely, *Myrrhis odorata*, and Cow Parsley, *Anthriscus sylvestris*, grow they should be checked for *Puccinia chaerophylli*. This rust is common on the former, but rarely found on the latter - even where the 2 species grow side by side, suggesting that the rust may have different races infecting the 2 hosts.

The highly poisonous Hemlock, *Conium maculatum*, is actually an attractive plant, with its feathery leaves which have a distinct mousey smell when crushed, lacy white umbels and hollow, purple-spotted stems. Once established it will readily spread along any 'corridors', such as cycle tracks and along road verges. It is occasionally infected by its own rust, *P. conii* (see photo on next page) and I have several records of this rust from my area. However, it is considered rare in Wales. (Woods *et al* 2015).

Typically, the fine leaves are found covered underneath with brown uredinia and telia. I have never seen *P. heraclei* infecting the very common Umbellifer Hogweed, *Heracleum sphondylium* and there are no recent Welsh records. In contrast there are 2 recent records from

Herefordshire, so definitely a rust to be aware of when out walking.

The pale-yellow Primrose, *Primula vulgaris*, is a delight to see flowering *en masse* on sunny banks in the spring and I have discussed the rust, *Puccinia primulae*, which can infect them in a previous article. (HFSG News Sheet 15, Spring 2008, p12). Last year I was surprised and pleased to find some infected mauve-pink coloured Primroses alongside more typical plants in an old, long abandoned garden near Holyhead. Wild Primroses can occasionally have coloured forms but I have not heard of any similar record with the rust infection and would be very interested to hear of other finds.

Greater and Lesser Stitchwort, *Stellaria holostea* and *S. graminea* both abound in hedgerows and can be hosts to *Puccinia arenariae*, a microcyclic rust more commonly recorded on a further hedgerow plant Red Campion, *Silene dioica*. On inspection the *Stellaria* leaves and stems can exhibit dark-brown pustules crammed full of the dark-brown teliospores. In contrast, the telia are smaller, more discreet and often arranged in small circles on the Campion leaves (see photos on next page). Other *Stellaria* species like Chickweed, *S. media* may also be infected occasionally, as well as Mouse-ear Chickweeds - *Cerastium* species - although I have personally failed to find any rust on the latter.

In 2011 Gill Brand initiated a survey of the 2 rusts, *P. arenariae* and *P. behenii*, infecting Red Campion to determine the relative abundance of the species. She found that they were quite similar despite a preponderance of *P. arenariae* records in the FRDBI, suggesting this was far more prevalent. (Brand, 2012). *P. behenii* is easily differentiated by the presence of uredinia and different teliospores.

A much rarer rust, *Melampsorella caryophyllacearum*, can also infect the *Stellaria* and *Cerastium* species (see photo on next page). I find this rust quite frequently in North-west Wales, especially on Lesser Stitchwort, yet there are surprisingly only two other records for the rest of Wales in the last 50 years and only 20 records for the rest of Britain. (Woods *et al* 2015). I have no explanation as to why there is a honey-pot of records for my area, unless the rust is very under-recorded in other parts? - or it's a super-ruster effect! It needs to be looked for, as signs of infection on the leaves may be minimal, at most a slight

paling of the leaves; the tiny yellow uredinia are produced on the undersides of the leaves which need to be actively turned over and checked.

There are several species of Cranesbill, *Geranium*, that grow on walls, banks and verges. In limestone areas the larger plants of Wood and Meadow Cranesbill, *G. sylvaticum* and *G. pratense* with their beautiful blue or mauve-blue flowers are frequent on road verges. In my area, though, the common species are Herb Robert, *G. robertianum*, Dovesfoot Cranesbill and Hedgerow Cranesbill, *G. molle* and *G. pyrenaicum*. All can succumb to infection by *Uromyces geranii* (see photo on next page). Initially, yellow aecia are formed: however, it is more usual to find the dark-brown uredinia, later accompanied by the dark-brown telia containing the single celled teliospores.

This is just a small sample of a 'Hedgerow Rust Harvest' and there are many more plants and many more rusts waiting to be discovered on a walk - and that is the excitement for the ruster never knowing what might be found on any outing..... Happy Rusting!

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Suggested Texts

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Puccinia conii on *Conium maculatum*, Hemlock



Puccinia primulae on coloured *Primula vulgaris*, Primrose



Puccinia arenariae on *Silene dioica*, Red Campion



Puccinia arenariae on *Stellaria graminea*, Lesser Stitchwort



Memampsorella caryophyllacearum on *Stellaria graminea*, Lesser Stichwort

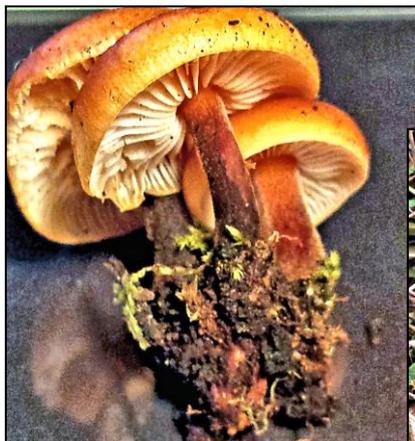


Uromyces geranii on *Geranium robertianum*, Herb Robert

NOTES FROM A NOVICE

Patricia Morgan

Having joined the Hereford Fungal Survey Group about a year ago out of a curiosity and fascination with fungi, I was hoping to learn a little more about identification. Now I am a fungal fanatic like the rest of you! It is wonderful to join in on the forays and have widely respected mycologists on hand especially when the finds are displayed at the end of the foray. I have discovered the joys of seeing so much detail using a hand lens, as well as roaming around beautiful country estates, followed by a pub lunch! I have even started to take note of the latin names.



As I am now always on the lookout for fungi on my winter walks, this one, the Velvet Shank, I noticed makes an appearance in the winter months between forays. It even withstands freezing...! So here is my tribute to *Flammulina velutipes* found in the months December to March .



Flammulina velutipes, Velvet Shank - Cusop Dingle, Jan.2015 (photos by Patricia Morgan)

Cap 2-10 cm, darkening towards the centre, slimy and smooth.
Stem dark brown, hollow and velvety below.
Gills pallid yellow, adnexed
Spores are white and the smell is indistinctive.

Withstands freezing and, on thawing, produces more spores!
Here it is in frozen form growing on dead gorse wood and a tree stump.
Edible and used in Japanese cooking, known as Inotake or *Enoki-take*.

SOME CONIFER SPECIES TO DIE FOR

Text & photographs - Jo Weightman

I am not in love with the plantations of alien conifers that march across much of the County, but there can be the occasional hidden blessing. In Scotland last autumn, four species restricted to conifer set me thinking about possibilities for our woodlands. Two species were life ticks: one I had seen just once before in Britain when it was a major excitement and the fourth is one of my passions.

Of the four, one has been recorded from Herefordshire in the distant past, another may have been and two not at all – or not yet. I cling to the thought that if one or two can be here, why not the others? Although all the examples I saw in Scotland were in pine *Pinus sylvestris* litter, or on pine wood, they have also been recorded with other conifers.



Xeromphalina caucinalis

The two with ancestral roots in Herefordshire are both species of *Xeromphalina* - *X. caucinalis* and *X. campanella*.

X. caucinalis is a small, mycenoid, litter species with a yellow-ochre cap and deeply decurrent gills. 2014 must have been a 'good year', as we recorded it at four sites - Loch Garten, Anagach Woods in Grantown, the Culbin forest (two locations) and Boat of Garten – all areas I have scoured for fungi in recent years but without seeing this one.

X. caucinalis was cited as Vulnerable in the provisional Red Data List (1992), but removed from the current RDL (2006). To date, there are forty or so records on the national database, mostly in Scotland, but including one from Surrey in 1995, S. Wiltshire in 1999, W. Gloucestershire in 2000 and in Monmouthshire between 1995 - 2010, where it was recorded by Shelley Evans and subsequently by Isabel Winstanley. To me, however, the earliest known record of all is the most fascinating.

When I was studying the paintings by W. G. Bull in the Mycology section RBG Kew, I came across one which Bull labelled, after several attempts at the then latest name, *Marasmius caucinalis* – one of the old names for what we now know as *X. caucinalis*. The location was given as,

“Merryhill Common under Scotch fir in the centre on the south side (undated)”.

In addition, underneath this Dr Bull has written,

“Holm Lacey – Mynde Park – Welford”.

Presumably these were other sites where the species was then known.



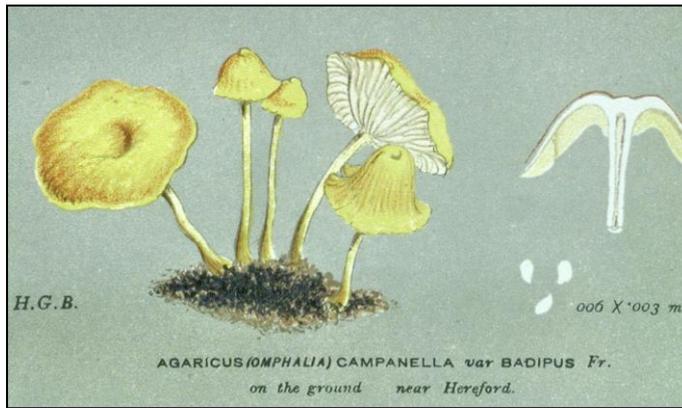
Xeromphalina campanella

He also notes the size of the spores. The fungi are shown growing from a pine cone.

The story continues in a letter dated November 9th, 1870, which accompanied a box of samples sent by Bull to Broome in which his description tallies with his painting:

“.... an elegant little yellow bell-shaped *Marasmius*, growing on half-buried fir-cones which seems to [amount?] to *M. caucinalis* [sp?] (p383). It is very abundant under one small clump of Scotch fir on Merryhill Common but not under the other clumps there in clusters”

and continues further with a look at an image published by M. C. Cooke in *Illustrations of British Fungi*, captioned “*Agaricus (Omphalia) campanella* var. *badipus* Fr.”. This image (see next page) is clearly the same painting as the one mentioned above and is acknowledged as such with Bull's initials (Cooke regularly used work by other artists), but the fungi have been re-named and are also depicted and described as arising from the ground - not a cone. Today, we would agree with Bull and use the epithet *caucinalis* and up-date the genus to *Xeromphalina*.



The story finishes in the Kew Herbarium where among the collections of *Xeromphalina caudicinalis* are some labelled:

Dr Bull, Herb Broome 1870:
 Dr Bull, Herb Plowright 11 Oct 1871
 And a third from "nr Hereford" Herb Phillips 1876

Merryhill Common is not marked on modern maps but the open access woodland on the south side of the A465 opposite Belmont is shown as Merryhill on the 1891 map and is likely to be the area visited by the Woolhope Club. If a clump of pines can provide the right conditions, it would seem that fairly exposed sites can also be productive.

Xeromphalina campanella

This is not the same species as *X. caudicinalis* despite the confusion generated by Cooke's (mis)use of the name. Perhaps matters were less clear in his day. *X. campanella* is differently coloured and with a different habitat, is bright orange-red throughout and occurs on dead conifer trunks and stumps. Both species share similar rather flared caps and very decurrent gills and have hyaline spores (see photo at the beginning of the article). Although there are many more records nationally for this species than for *X. caudicinalis*, it remains a rarely seen fungus – earning itself a place on the Provisional RDB list where, like its cousin, it was classed as Vulnerable and later removed.

Xeromphalina campanella is apparently more or less restricted to Scotland, with intermittent records from Yorkshire up to 1909 and one from Westmorland in 1995. The FRBDI lists a "Hereford 18xx" from Rea's contribution to the Victoria County History for Herefordshire but, given the juggling of names at that date, this could have been *X. caudicinalis*. Or, maybe the name is correct and we can hope for a magic find.

Mycena rosella is a small, delicate, mini coolie hat species that occurs in damp, often mossy, conifer litter. The cap is pink with a darker pink to red-brown centre; the gills are also pink, with a deeper pink edge and are adnate to subdecurrent and the stipe is pale pink.

Among pink *Mycena* spp., this one is closest to *M. capillaripes*, being of similar size, ie cap is 1-2 cm across, rosy tones are present and the habitat is conifer litter. Smell is of prime importance in the field - *M. capillaripes* smells like a swimming pool and *M. rosella* does not.

They can be further distinguished as follows:

- cap colour – *M. rosella* is pink to coral with a darker pink centre; *M. capillaripes* is reddish grey-brown;
- gill colour - *M. rosella* has pink gills with a subtly deeper pink edge; *M. capillaripes* has pallid gills and a contrasting red gill edge;
- stipe tones – *M. rosella* has a pale pink stipe, while the stipe of *M. capillaripes* is vinaceous to grey, darker than the cap.

This seems to be an extremely rare species in Britain with collections from Scotland between 1927 and 1988 and just a few English records from Wiltshire in the 19th century by Broome. We saw it this year at four sites between Grantown and the Moray Firth – was this truly serendipitous (right place, right time), or has no-one in the intervening years thought to back up a record with a collection? Do we pass too quickly by without looking properly?

Pleurocybella porrigens

This, my fourth species is not a rarity, or a notable, or even a special in the frequency stakes. I expect to see it at least once and, with luck, several times if I visit a conifer wood in Scotland. The host is a fallen and rotting trunk or stump. Records from elsewhere are rare – so far. The fungus never fails, however, to make my hair stand on end. This is, quite simply, the most beautiful fungus in Britain. I think of it, fancifully, as Sidney opera house.



I invite you to submit your own 'most beautiful'. Heaven will come to earth if you find mine in Herefordshire.

FUNGAL FRAGMENTS

An article from The Times (21st Oct. 2014)

Ladybirds hit by fungal sex disease

Simon de Bruxelles

Ladybirds have been hit by an outbreak of a sexually transmitted disease. Researchers are appealing for sightings of insects with the sinister green fungus after a survey found 15 per cent of ladybirds in London parks were affected.

Most of the victims are harlequins, an invasive species that has been attacking native ladybirds for ten years. Harlequins have more spots and are bigger than the British species.

The harlequins are believed to have brought the fungal disease from east Asia when they were imported for commercial pest control.

The fungal outbreak was noticed by Katie Murray, a PhD student at the University of Stirling. "We've seen ladybirds that were very highly affected," she said. "The mobility of one was very compromised because it had [the fungus] not only on its wings, but also its mouth parts and antenna.

"We don't yet know the impact, but we are going to measure the mortality and also how many eggs an infected female is able to lay."

The fungus, Laboulbeniales, could have a serious impact on the native ladybird, which was already struggling to survive the harlequin invasion.

Helen Roy, from the Centre for Ecology and Hydrology in Oxford, who is Ms Murray's supervisor, said that the fungus was being spread either by the ladybirds having sex or when they cluster together. "In their dormant period ladybirds can huddle together in a group, and these can be mixed species groups," Dr Roy said.

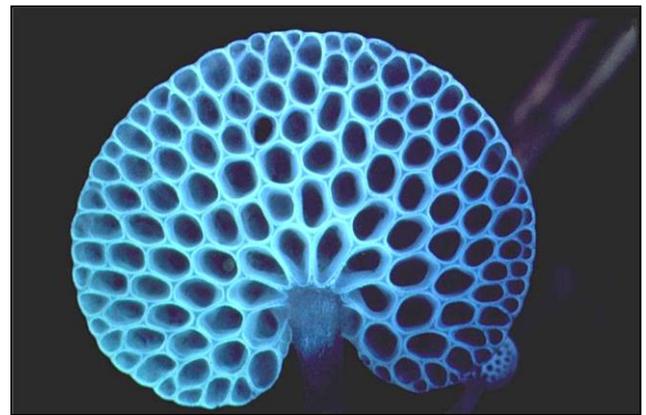
Ted Blackwell (who found this article) comments that "The Laboulbeniales fungi are specific to insects. They don't usually adversely affect those they infect, almost "epiphytic" in life style, so mobility being compromised is an unusual development. It will be interesting to see if eventually it has any effect on Ladybird populations'.

Roger Evans found this photograph in The Times (Nov. 25th 2014):



Orange alert Orange ping-pong bats have been spotted in Devon. Experts are asking the public to help track the rare fungus

which Ted suggests might be a *Favolaschia*, which glows in the dark - see below - or closely related to it.



Margaret Hawkins sent in this photograph of a typical HFSG member. Who is it?

