Hi all,

Here’s the July update for the Lost and Found Fungi project, featuring more recent finds, species to look out for, project progress, and announcements. It’s now getting later on into the year, so we’ll be beginning to feature more basidiomycete macrofungi (mushrooms to the layperson). I hope this change in focus will appeal to many of you, and maybe also to some members of the broader biodiversity recording community, who may be more interested in rare mushrooms than obscure ascomycetes or smuts and rusts. Apologies for the report getting later and later as the months pass – but I think this may be a good sign that the project is getting busier and busier as more people get involved!

You may also notice that I’ve combined the “New Finds” and “Species to look for” sections this month. This is because many of you are two steps ahead of me and have been sending in finds before I ask for them. This makes it difficult to neatly format the newsletter into two main sections, but I’m personally extremely impressed, and we’re all extremely grateful for this sort of participation.

I would like to re-emphasise the importance of “unsuccessful surveys”. If any of you have been actively looking or just keeping an eye out for species, please let me know. A notable example of how important this is can be seen with Polystigma rubrum, which despite few previous records is now currently “blooming” in Cornwall. Is it doing the same anywhere else? Is it common in Cornwall but rare elsewhere? We have no idea, and need your found/not found records to find out.

Throughout July we received enough “volunteers in the field” photographs that we would like to start up a Lost and Found Fungi project gallery of participants in the field. We would therefore be very appreciative of anyone who would like to contribute any such photos.

As always, many thanks to everyone who has got involved in the project this month, and in the preceding months!
New finds, and species to look for

*Arimillaria ectypa*

*Arimillaria ectypa* (the Marsh Honey Fungus) was found in late July by the Carmarthenshire Fungus Group at Ffwrdd Fen, Llanelli (Carmarthenshire VC:44) the only known Welsh site known for this species. Philip Jones has been monitoring this site since the first discovery of *A. ectypa* here in 2002, so he knew of several places where it was likely to appear. Even so, the search required “doing the breaststroke through the *Phragmites*” in the search for fruitbodies.

Philip has also forwarded us his notes of this species spanning back to 2002, which will be really important in gaining a better understanding of its ecology, fruiting behaviour, and conservation needs, particularly at this site. One worrying observation by Philip was that Ffwrdd Fen seems to have changed considerably since his recording began. The site has become much drier, with less *Phragmites* and more ground cover plants such as *Juncus*. We have no idea whether this will substantially affect the survival of *A. ectypa* at this site, but it seems likely to do so if habitat changes continue or increase. Changes in site conditions are particularly worrying because Ffwrdd Fen is the only known site for *A. ectypa* in Wales; there are only six known sites in the whole of GB&I; and the situation appears to be the same in other European countries where it occurs.

For those interested in looking for this species over the next few months, *Armillaria ectypa*, the “Marsh Honey Fungus”, can be found between July and October, growing amongst *Sphagnum* mosses in very specific marsh microhabitats with low nitrogen availability. Its fruitbodies comprise yellowish-brown, small to medium sized agaric mushrooms, cap diam. 3-6 cm (up to 10 cm?), initially domed with a downwards curved margin, possibly becoming flat with central depression and wavy margin, with a relatively thin cap verging towards translucent at the edges when wet. It is a very recognisable fungus in a distinct habitat, and we would hope that even the most novice mushroomers would be able to identify it reliably in the field.

Like some other members of *Armillaria*, *A. ectypa* glows in the dark (see Ainsworth 2004), and could be one source of the will-o’-the-wisp legend (S. Evans pers. comm. in Ainsworth 2003). Its precise ecological requirements are not well understood, but would be expected to be vulnerable to even small changes in hydrology, nitrogen levels and habitat. Given its rarity in all 13 countries from which it is known
it is particularly important to monitor known populations and discover new sites if this species is to be conserved.

All current known sites are relatively recent, beginning with the first recognition of its presence in the UK in 1995. Two known sites are in England, two (comprising three plots) in Scotland, and one in Wales. Two general localities are known in Northern Ireland, one comprising five recent records within a bog in Garron, County Antrim (VC:H39). A further two records are from 1885 in County Down (VC:H38) which are probably dubious and if not, are associated with now-unsuitable habitat. The currently known distribution can be seen here: link.

We have very recent records from two UK sites: Malham Tarn Moss, Mid-west Yorkshire (VC:64); and Ffwrdd Fen, Llanelli, Carmarthenshire (VC:44), Wales. We would encourage anyone willing to visit any of the other localities over the next few months, in order to get an idea of the current state of the sites, these being: Insh Marshes NNR, Easterness (VC:96), Scotland; Lochan Iliter, Isle of Luing, Argyll (VC:98) Scotland; and Sunbiggin Tarn, Westmorland (VC:69), England.

More detailed information regarding this species and its conservation concerns can be found in:


**Chrysomyxa pyrolata** (see datasheet and map)

A contrasting picture is slowly developing regarding the rarity of the rust *Chrysomyxa pyrolata* (on *Pyrola rotundifolia* ssp. *maritima*) in GB&I. Mark Steer of the Glamorgan Fungus Group has continued his month-after-month pursuit of this rust in coastal areas of Glamorganshire (VC:41), Wales, providing valuable data that this species appears to be absent at all sites surveyed. Martyn Ainsworth reported the same outcome in Braunton Burrows, North Devon (VC:4), despite turning over thousands of leaves. Together with past surveys, these records are beginning to provide good evidence that *C. pyrolata* may be restricted to only a few sites in GB&I.

**Lichenochora epifulgens** (see species page)

David Harries and Robin Crump have refound the lichenicolous fungus *Lichenochora epifulgens* (on *Fulgensia fulgens*, the “Scrambled-egg lichen”) at Stackpole in Pembrokeshire. *Fulgensia fulgens* is considered to be nationally rare, Endangered, and a Species of Principal Importance under Sect. 41 (England) and Sect. 42 (Wales) of the Natural Environment and Rural Communities Act (2006).
More details of *Fulgensia fulgens* can be found at the following sites: [link1](#), [link2](#).

*Lichenochora epifulgens* appears to be restricted to *F. fulgens*, and so must by definition be at least as rare or (if numerous individuals happen to occur on lichen thalli) as vulnerable. Although *L. epifulgens*’ perithecial fruitbodies are minute (about 200 µm diam), they are fortunately black and so visible against the yellow lichen thallus. Notably, David and Robin’s find is only the third record of this fungus in the UK, with the first and second records from the same site in 2009 and 2012.

The species has been searched for in populations of *Fulgensia fulgens* in the West Country (its primary centre of distribution in GB&I) without success (information from Peter Lambley), but further survey work would be valuable. If anyone else is interested in undertaking such surveys, please let us know and we’ll try to help make it happen.

*Mollisia fuscoparaphysata* (see [datasheet](#) and [distribution map](#))

Arthur Chater has been hunting for the discomycete *Mollisia fuscoparaphysata* (on *Trichophorum*), and other LAFF target species, in the Aberystwyth area (Cardiganshire, VC:46). Arthur found one site in May, and has since found a further five new sites. Its occurrence appeared to be so frequent (nearly every clump examined), that Arthur has now given up looking for *M. fuscoparaphysata* in the Aberystwyth area, and has moved on to more challenging species. Similar high rates of occurrence have also been observed at the other sites where this species has been recently recorded, supporting the idea that it may be commonly associated with *Trichophorum*, and until now greatly overlooked.

Other reports of this species have also been slowly trickling in, beginning with Paul Cannon from Shetland near the very start of July. However, our distribution map of this species is still very patchy. We would appreciate as many further records from other localities of this discomycete, especially now that we suspect it’s not a difficult species to find. I would recommend anyone with a microscope and an interest in discomycetes to have a look for this species – it is quite a lovely species, and the dark-pigmented paraphyses are well worth a look. Personally, I’m still very excited to find out exactly where it’s phylogenetically placed.
**Polystigma rubrum** (see datasheet and distribution map)

Paul Gainey has been providing details of *Polystigma rubrum* populations in Cornwall throughout July (briefly mentioned in the last report). Records from Paul, Pauline Penna, and Ian Bennalick have so far produced an impressive total of 14 new sites, many with multiple patches, falling into five main areas distributed throughout the coastal areas of Cornwall. A number of sites were heavily infected, while others consisted of only single spots on individual leaves. A further record by Ken Preston-Mafham in 2013 brings the total to 15.

It does look like *Polystigma rubrum* is in “bloom” in Cornwall this year, but we still don’t have enough evidence that this is not the case elsewhere. So if you have been looking for this species (or even just keeping an eye out) and not finding it, please tell us!

Gary Easton, Lucy Hill and I surveyed a substantial proportion of the blackthorn bushes in Aberstwyth, Wales, and also a large inland site of old blackthorn (with Sarah Tvedt), without any sign of the fungus. However, Lucy found a substantial population of *P. rubrum* at Penybwlch (nr. Tanybwch beach) the next morning, on two bushes straddling the coastal path. These bushes are heavily overgrown and will probably be pruned back soon, so we’ll be alerting the site management to the presence of *P. rubrum*, in the hope that we can help protect the population from being damaged or removed entirely.

Further dense populations have not been found so far, although Arthur Chater and Lucy Hill have since found a few scattered infected leaves nearer the cliffs at a distance from the core population.

Martyn Ainsworth has also searched further north up the coast in Ilfracombe (the locality of a previous record). After hours of searching, he managed to find one single tiny spot on one leaf. As with other similar records, this was presumably a secondary infection from a more developed population whose whereabouts are as yet unknown.

Based on the records we’ve had so far, *Polystigma rubrum* appears to be found as either very extensive infections colonising numerous leaves on a host plant, or as single spots on individual leaves. The most obvious explanation for this is that the former represents long-established populations producing
conidiomata and conidia within a bright red stromata, and later black ascomata in stromata on older fallen leaves. In contrast, the latter probably represents secondary colonisation events from aerial infection by spores. Curiously, heavy infections can also be highly localised, being present on one stretch of hedgerow yet a complete absence nearby (D.A. Evans, pers. comm.). This could perhaps reflect genotypic differences between henges in their susceptibility to *P. rubrum*. Needless to say, it is the extensive heavily infected bushes, rather than secondary infection sites, that would need to be conserved and protected if this species does turn out to be genuinely rare in the UK.

**Puccinia scorzonerae**

July has seen two successful attempts to rediscover the rust fungus *Puccinia scorzonerae*, which occurs on leaves of *Scorzonera humilis* (“Viper’s grass”), a plant restricted in GB&I to only a few moist meadow sites. Both host and rust are sufficiently rare that they’re treated as species of Species of Principal Importance under Sect. 41 (England) and Sect. 42 (Wales) of the Natural Environment and Rural Communities Act (2006). Of course, *P. scorzonerae* is by definition at least as rare as its host, since it’s host-specific with no known alternate host.

*Puccinia scorzonerae* has not been recorded in England since 1914. In an attempt to rediscover it, Martyn Ainsworth, six RSPB volunteers, and others (11 people in total) lined up and systematically searched a meadow at Wareham, Dorset, which contains one of the few *Scorzonera* populations in the UK. After a thorough three-hour search, they found between them one cluster of six infected plants, and a single nearby infected plant.

*Puccinia scorzonerae* is also known to occur in Wales, with most recent records in 1997 and 1998. This July, Sam Bosanquet, Julian Woodman and Nigel Stringer surveyed the Welsh population of *Scorzonera humilis* present at Cefn Cribwr SSSI, Glamorganshire. They looked at *S. humilis* in two of the four main fields where it is known to grow, and found the rust on at least 62 plants, distributed throughout 16 10 m grid squares, with approximately 50% of surveyed plants being infected.

A further interesting fact is that *P. scorzonerae* is probably not the most appropriate name for the species found in the UK (its nomenclature and taxonomy are very complicated), but it’s probably best if I leave that for Martyn Ainsworth to explain in a future publication.
Uromyces gentianae

Martyn Ainsworth has also been searching populations of Gentianella amarella (the autumn gentian) for the leaf rust Uromyces gentianae, following up on a historic collection by F.R. Elliston-Wright in August 1958, and photographic evidence by Jeremy Barker (NE) in 2012. After surveying unsuccessfully for two days, a quick search of “Pine Slack” at Braunton Burrows revealed three plants infected with this species. A more extensive survey two days later revealed 150 host plants, of which 30% (in several discrete patches) were infected.

A request for records of several well-known but vulnerable species

With the start of mushrooming season, we would like to request any records not currently in the online FRDBI for any of the more common, recognisable and better known, but potentially vulnerable species on our target list, specifically Hericium coralloides, Hericium erinaceus, Piptoporus quercinus and Podostypha multizonata. These species have considerably more records than other species on our list, and can be easily recognised, but need surveillance because of their association with veteran host trees. We would like as precise grid references as possible, but should emphasise that locations of Hericium spp. will be considered sensitive and not released to the general public, just in case their edible or medicinal value may put the species at further risk.

Recruiting a new assistant for the Lost and Found Fungi project

Currently we have an advert on the Kew jobs website for a “Community Fungus Survey Technician”, who will hopefully be in position by October to help provide further support to the volunteer mycological community within the Lost & Found project framework. The closing date is 6 September, so if you know anyone who might be interested to apply, please pass on the information.

And I think that is all for now!

Best regards,

Brian

Dr. Brian Douglas  
Community Fungus Survey Leader for the Lost and Found Fungi Project  
Email: b.douglas@kew.org  
Project website: http://fungi.myspecies.info/content/lost-found-fungi-project