

## Lost & Found Fungi project report, June 2015

Brian Douglas

Hi all,

Here's the June update for the Lost and Found Fungi project – an assortment of recent finds, species to keep an eye out for, and general project progress. June has been a bit microfungus heavy, but the next few months should start correcting this imbalance and get some larger basidiomycetes into the mix.

As always, many thanks to all the people who have been involved this month (and previous months) in the Lost and Found Fungi project!

### New finds

#### *Sporomega degenerans*

*Sporomega degenerans* is a *Colpoma*-like species occurring on reddish dead twigs of *Vaccinium uliginosum* (“bog bilberry”), forming irregular black slits that open up to reveal elongate grey apothecia of about 0.5-3 mm in length. The species was first recorded in GB&I in 1907 by D. A. Boyd, in Glen Falloch (West Perthshire VC:87, Scotland) ([link here](#)). Boyd considered it “quite rare”, so presumably he was aware of more than the one collection, but it hasn't been recorded in GB&I since. It's been “lost” for over 100 years.

Stewart Taylor has been on the hunt for this species since last October in East Inverness-shire (VC:96), when he found some apothecia that looked like they could belong to this species ([link to his blog here](#)). However, his collection was immature and infected with what appeared to be a parasitic *Tremella* (jelly fungus) species, so it wasn't given a definite ID at the time. Stewart's hunt started again this June, when he managed to find the first new population of this species in the Cairn Gorm mountains. He soon extended his search to two sites fairly close to his first find, and then one more distant, where he also found colonised plants without too much trouble. We're hoping this indicates that *S. degenerans* could be more common than the single historical record would suggest. The *Tremella*



*Sporomega degenerans* apothecia on *Vaccinium uliginosum*. Top image © Stewart Taylor; middle and bottom © B. Douglas.

parasite may also be interesting since many are thought to be host-specific– maybe a rarely reported fungus with an even rarer host-specific fungal parasite!

The host plant, *Vaccinium uliginosum*, is mostly confined to Scotland, although scattered populations exist in the North East of England. *Sporomega degenerans* occurs on the dead twigs, either attached or fallen off, which can be found by parting the living stems and looking at reddish dead twigs beneath. It may also be present on some living plants, since one of Stewart’s collections was from a plant with leaves which didn’t look too unhealthy. The fungus is quite inconspicuous when twigs are dry, since the apothecia are closed up and appear as tiny black slits even through a hand lens. However, the apothecia rapidly expand and open up when wet, becoming (barely) visible to the naked eye.

One potential lookalike, *Terriera cladophila* (link [here](#)), is apparently common on *Vaccinium myrtillus*, but the apothecia remain “coffee-bean”-shaped and never get as elongate as those of *S. degenerans*. The ascomata are also very clearly delineated, sometimes with a clear border line; have a smooth (rather than irregular) split in the “lips”; and occur on paler twigs bleached by the fungus. If in doubt, the ascospores in *S. degenerans* are slightly club-shaped (one rounded end and one pointed end) while those in *T. cladophila* are consistently filiform and of even width throughout.



*Terriera cladophila* apothecia on a *Vaccinium myrtillus* twig © Paul Cannon.

### *Chrysomyxa pyrolata*

Tony Carter has found two populations of *Chrysomyxa pyrolata*, a rust on leaves of *Pyrola* spp., at Ainsdale near Southport (South Lancashire VC:59, England). This site appears to be a historical stronghold for the species in the UK, with records from 2014, 2009, 1921 and 1913, so it’s fantastic that it’s still present this year. Mark Steer of the Glamorgan Fungus Group has also continued hunting for this species in South Wales in Parc Slip NNR, Kenfig NNR and Merthyr Mawr NNR, and has been finding the *Pyrola* host but no sign of rust.



*Chrysomyxa pyrolata* on *Pyrola rotundifolia* ssp. *maritima* © Tony Carter.

The next most recent record for *C. pyrolata* is at Sandscale Haws NNR, Westmorland (VC:69), where it was last recorded in 2009. We would be very grateful to anyone who would be willing to take a look at this site (the grid reference is approximately SD1975). Other GB&I sites are limited to a few records from the 1970s in South Wiltshire and Anglesey, and surveys in previous years have failed to find the species at these sites. However, that isn’t to say it can’t be found there and elsewhere. If anyone knows of any *Pyrola* in their area, please check out the leaves and let us know if it is present or seems absent.

*C. pyrolata* is a small species complex, so we’ve also checked the DNA sequence of an Ainsdale specimen just to make sure it’s the right species. Based on this sequence, the acial host appears to be



*Picea glauca*, which is not a common plantation tree in the UK, and its absence may limit aerial spread of this fungus. This could help explain why *C. pyrolata* is a rare species in the UK but a notable spruce cone pathogen in other countries. It also raises the question of whether the rust originally arrived in the 17<sup>th</sup> century with the introduction of *Picea glauca* as an occasional plantation species, and has since been restricted to *Pyrola* populations when these plantations died or were replaced by species more suitable for the UK climate.

### ***Thyronectria roseovirens***

Tony Davis of the [Hampshire Fungus Recording Group](#) has confirmed that *Thyronectria roseovirens* (visible as perithecia in loose bright yellow stromata, erupting from recently burnt gorse) appears to persist until at least mid-July, as demonstrated by a very recent find in the New Forest. The new site was at quite a distance from the other two known populations, suggesting that it may be quite widespread throughout the New Forest.



*Thyronectria roseovirens* on burnt gorse © Tony Davis.

Tony also noted that the colour of the stromata he observed appear somewhat less vivid yellow compared to those we saw earlier on in the year, which is something to bear in mind if anyone else is looking for new populations. We have no idea if this is due to pigment loss over time in older stromata, or sun-bleaching, but given the wide range of coloration described for the species (including reddish and green!) it may not be too surprising that the colour can change.

### ***Lasiobotrys lonicerae***

Stewart Taylor has found *Lasiobotrys lonicerae* on *Lonicera periclymenum* (honeysuckle) leaves by the River Nairn (East Inverness-shire VC:96, Scotland). All features were present and correct apart from ascospores, since the collection was immature.

This species produces warty black spots on *Lonicera* leaves, consisting of clusters of individual sclerotia anchored with dark hyphae, covering much smaller pseudothecia containing ascospores. More photographs of what to look for can be seen at the Highland Biodiversity Recording Group (link [here](#)).

*Lasiobotrys lonicerae* currently only has four records in the past fifty years, but references to this species in the last century don't note this species as being particularly rare, albeit uncommon on garden honeysuckle.



*Lasiobotrys lonicerae* on *Lonicera periclymenum* leaves © Stewart Taylor. Top: clusters of sclerotia on leaf surface; bottom: individual sclerotia with anchoring hyphae and globose pseudothecia.

It's possible that *L. lonicerae* has been almost completely overlooked in the past, so if you know of any honeysuckle populations around, please keep an eye out for black spots on the leaves, check if they're warty-looking or not, and please let me know if the species is present or seems absent.

### ***Entyloma chrysosplenii***

Stewart Taylor has also found several new populations of *Entyloma chrysosplenii* on *Chrysosplenium alternifolium* (alternate-leaved golden-saxifrage) near Cromdale (Moray VC:95, Scotland).

*Entyloma chrysosplenii* belongs to a smut-like genus that produces teliospores packed within internal tissues of leaves of many asterid and ranunculoid plants, producing distinctive white patches on infected leaves. It isn't a LAFF species, but with only three previous records in the past 50 years could certainly be placed on the list, and has now been added to our backup list of candidates



*Entyloma chrysosplenii* on *Chrysosplenium alternifolium* © Stewart Taylor.

### **Species to look out for – *Polystigma rubrum***

Over the next few months we're encouraging people to keep an eye out for *Polystigma rubrum*, an ascomycete fungus occurring on living *Prunus spinosa* (blackthorn) leaves in the form of bright red/vermillion (when fresh) to orange-brown (when dry), slightly thickened "blisters", looking almost as if leaves have been splattered in red paint. The ID can be checked microscopically by the presence of thin filiform to hooked conidia of the anamorph. It's a biotrophic parasite that doesn't kill off the leaves immediately, so any red/brown spots associated with leaf necrosis, thinning tissue in the middle of spots, or involving "shot-hole" symptoms (circular pieces of falling out of leaves), involve something else.

We've already had a number of new records from West Cornwall thanks to Paul Gainey of the Cornwall Fungus Recording Group, where he's been finding it on several sites and in some cases as very noticeable infections. It was also found very recently by Lucy Hill on the coastal path at Penybwlch (above Tanybwlch), Aberystwyth, after two days of unsuccessful surveying of blackthorn in Aberystwyth by Gary Easton, Lucy Hill, Sarah Tvedt and myself (more about these surveys next



*Polystigma rubrum* on *Prunus spinosa* leaves © Paul Gainey.



month!). So it is definitely still out there and perhaps quite common, but maybe restricted to older blackthorn populations, probably with a somewhat coastal distribution. We still need to learn much more about its distribution and ecology to say more. Luckily it's a fairly easy species to spot if present!

Historically this species has been very widely distributed in GB&I, and occurs on a very common host, so we're hoping that this will turn out to be one of those species that has been under-recorded and can ultimately be downgraded from a provisional and unofficial "vulnerable" status to Least Concern (if we can get enough data). The current distribution map of this species can be found [here](#).



*Polystigma rubrum* on *Prunus spinosa* leaves at Penybwlch coastal path, Aberystwyth © Lucy Hill.

### **A second LAFF survey at Thursley NNR, Surrey**

Paul Cannon, Martyn Ainsworth, and myself returned to Thursley NNR, Surrey (VC:17) on the 29<sup>th</sup> June, in an attempt to extend our mapping of *Xenotypha aterrима* and *Dencoeliopsis johnstonii*. Thursley NNR is the only known site in England where *D. johnstonii* has been reported, and the recent records (in 2002 and 2006) suggest that this is the most likely place to find this species. We were also hoping to search for *Multiclavula vernalis* on any bare peat, and *Mollisia fuscoparaphysata* in association with any *Trichophorum* on site.

Unfortunately, this survey coincided with the start of a big heatwave, the site was extremely dry in most places, and there was no *D. johnstonii* to be found. We did manage to extend our mapping of *Xenotypha aterrима* on site, which will suggest likely localities for *D. johnstonii* in future surveys. Martyn did manage to find some *Mollisia fuscoparaphysata* on *Trichophorum*, possibly *Niptera trichophoricola*, and one additional mollisioid fungus on this host. It's starting to look like *M. fuscoparaphysata* may actually be quite frequently associated with *Trichophorum* species. Of course, we need more records before we can know this for sure.

### **Getting in touch with site management**

We've compiled a bit more information about the *Helvella leucopus* sites in South Wales (thanks to Penny David) and now have the exact patch where most of the records from Merthyr Mawr NNR have occurred. The site management have been informed about this species (thanks to Mark Steer), and the main fruiting site seems likely to be in a safe area that can be watched over in the next few years and beyond. This should help protect the location from the same fate as that of Martyn Ainsworth's 2006 find, which was severely damaged in the last few years by removal of the trees, and will soon be completely cleared as part of the reserve management plan to protect the dunes.

Sue Rogerson has put us in touch with the New Forest management regarding gorse-burning management (for *Thyronectria roseovirens*), and holly pollarding (for *Mollisia subglobosa*), and when we obtain the data we'll hopefully be able to anticipate a number of new sites and undertake more intensive and targeted surveys of these species next year.

The management of Thursley NNR, Surrey has been informed of the presence of *Xenotypa aterrима* and *Dencoelopsis johnstonii* on their site, and we've passed on our distribution map so that interested parties can see where these species are. Thursley NNR also has a forthcoming Long Term Monitoring Survey planned, and we're hoping that the people involved will help keep an eye out for new populations of *X. aterrима* in places where we haven't surveyed yet, and on the species in the long term after the LAFF project finishes.

### **Getting DNA sequencing started**

Since the weather has been so hot and unfavourable for fungus-hunting, I've been starting to organise specimens for DNA sequencing, which should fill in some of the DNA barcoding and taxonomic gaps around these fungi. Sequencing will be really important for some of these species, since we need reliable reference strains to see if collections are really what we think they are, if we have the right names for them, and if a species is a good concept or really several even rarer species. These issues are particularly important for fungal conservation, since we need to have the right names and species concepts if species are to be protected legally, or if sites are to be protected based on the number of rare species present. Sequence data will also come in handy later on, with dealing with ambiguous IDs, immature or poor quality specimens, or if we (or anyone else) are looking for species using DNA-based methods alone. Hopefully I will have this up and running soon.

I think that's all for now!

Best regards,

Brian Douglas

Community Fungus Survey Leader for the Lost and Found Fungi Project

Email: [b.douglas@kew.org](mailto:b.douglas@kew.org)

Project website: <http://fungi.myspecies.info/content/lost-found-fungi-project>