Field Mycology

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Field Mycology

Field Mycology is a quarterly publication produced by the British Mycological Society, available as an open access online journal and in printed magazine format. It covers all aspects of fungal identification, recording and conservation, catering to all levels of expertise.

It focuses primarily on the wild fungal diversity of the British Isles, including the United Kingdom, the Republic of Ireland, the Isle of Man, and the Bailiwicks of Guernsey and Jersey (Channel Islands). Reports and examples of the practice of field mycology from elsewhere may also feature, where they are of relevance and interest to the field mycology community. However, articles describing taxa which are new to science will only be considered for publication if their holotypes were collected within the British Isles.

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Authors are welcome to contact the Editorial Team, via the email address above, with any pre-submission enquiries. In the case of articles dealing with taxa that are new to science or new to the British Isles, the Editorial Team requests that a pre-submission enquiry is made in advance of submitting the manuscript, so that consideration can be given to suitability for publication in *Field Mycology* and any necessary arrangements for scientific review.

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Back cover: The richly branched *Cladonia portentosa* (Reindeer Lichen) growing in Benmore Botanic Garden. Photograph © Rebecca Yahr, one of the authors of *Lichens of Britain and Ireland*, reviewed in this issue.

EDITORIAL

Good news to start the year

Biodiversity Heritage Library staff positions secured

Readers may recall a short article last year on the situation the Biodiversity Heritage Library (BHL) then found itself in: needing to find new hosting arrangements (Blencowe, 2025). Users of this resource will be pleased to hear that there is good news on the BHL front. All of BHL's existing staff positions have been secured and the Field Museum of Natural History, Chicago, will host BHL's servers and core technical infrastructure. Bravo to the team who must have had to work very hard to achieve such a positive outcome in a relatively short time. You can read these latest updates on the BHL website: https://blog.biodiversitylibrary.org/category/bhl-news.

Mapping the landscape of mycological organisations in Europe

In the issue before last, Mielke *et al.* (2025) introduced us to the FunDive project which is bringing together a panoply of mycological initiatives across Europe.

Haelewaters *et al.* (2026) have followed this up with an interesting Open Access paper on mycological organisations in Europe and their development across history and geography. They gathered information on publication of journals and magazines and compiled a list of 62 titles from 46 mycological organisations, including *Field Mycology* and the BMS's other journals.

It is encouraging to see FunDive raising the profile of citizen science (or what we might call field mycology) and professional mycology, and it made me wonder if we could do more to tap into this network…

I know that some of our readers also follow (and possibly even translate?) publications from neighbouring countries and other parts of the world with shared fungal diversity. If you're one of those people and have ideas for how *Field Mycology* could help disseminate interesting news and articles, please get in touch.

Developments on the *Field Mycology* website

Geoffrey Kibby volunteered a substantial amount of his time earlier this year to update the Index to *Field Mycology*. You can find it via the 'Index' tab on the website: https://fieldmycology.org/index.php/journal/index. Thank you, Geoffrey!

The 'Reader notification' facility is now set up. So if you would like to receive an email the minute a new issue of *Field Mycology* is published, you can get this by registering as a 'Reader' here: https://fieldmycology.org/index.php/journal/user/register. (Please note, we have not set up the online submissions facility yet, so ignore that bit for now.)

More information about the publication is being added to the website, for example on the submission and review process and editorial guidelines, so that these are comprehensively documented. The editorial team is very conscious that we want *Field Mycology* to be geared towards the field mycology community and welcoming to new authors. We will continue working on how we can best communicate this and support authors—hopefully including some 'in person' conversations when opportunities arise.

We welcome people getting in touch with enquiries and feedback. You can reach the editorial team at fieldmycologyjournal@britmycolsoc.info (or see inside front cover for BMS office address and phone number, and your message will be forwarded).

Clare Blencowe

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The curious case of the bolete and the little people…

Geoffrey Kibby[1]

Back in January 2026 the newspapers that month, and even some prestigious science magazines were all reporting on curious incidences of hallucinations following the eating of a particular bolete in Yunnan Province, China. In a 1991 paper, two researchers from the Chinese Academy of Sciences reported that it appears that all those affected had eaten the same fungus, a bolete which is sold in markets in the region. In each case those affected report very similar symptoms: "lilliputian hallucinations".

This involved seeing numerous tiny human figures moving about everywhere; including on their clothes, on dishes of food, climbing walls, etc; even more vividly when their eyes were closed. Colin Domnauer, and colleagues at the University of Utah and the Natural History Museum of Utah, began studying the problem, hoping to identify both the fungus and the chemicals producing the symptoms (Domnauer, 2025). In 2023 they bought boletes from local markets that the sellers identified as the ones that could cause the strange visions and following genetic sequencing were able to confirm its identity as *Lanmaoa asiatica*. The genus, *Lanmaoa* G. Wu & Zhu L. Yang was only described in 2015, with *L. asiatica* as its type species.

There were also similar reports from the Philippines, and subsequent genetic testing by Domnauer and his team showed that the boletes involved there were of the same species. These reports were also rather similar to those of mycologists Gordon Wasson and Roger Heim back in the 1960s, from Papua New Guinea where they discovered reports of "mushroom madness" after eating a species of bolete; but as yet the species involved there has not been collected or tested genetically.

We are used to hearing reports of hallucinations from eating psilocybin-containing fungi—so-called magic mushrooms—but in these new cases the chemical involved does not appear to be psilocybin. In lab experiments, rodents fed bolete extracts experienced periods of hyperactivity followed by a long stupor (it is not known if the rodents saw even tinier mice…).

Current tests suggest that the chemicals involved are not related to any other known psychedelic compound. The hallucinogenic trips

Fig. 1. *Lanmaoa asiatica,* a beautiful species described in 2015 and the cause of some unexpected side effects. Photo © Colin Domnauer.

produced are unusually long, from one to three days, after a long onset time of 12–24 hours, along with a chance of some side effects such as delirium and dizziness, sometimes resulting in admission to hospital.

Apparently when well-cooked there are no unusual effects, suggesting a chemical that is destroyed by thorough cooking. Indeed, a local mushroom hotpot restaurant warned the American team to set a timer for 15 minutes before eating, else they might see little people. For a mushroom to produce such consistent visions across a wide range of persons eating them is perhaps unique and certainly highly unusual. Mushroom chemistry continues to surprise and baffle us as mycologists explore and discover new species around the world.

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Fungal Portrait: 105

Chaetocalathus craterellus (Durieu & Lév.) Singer

Silky Oysterling

A. Martyn Ainsworth[1]

Fig. 1. Partially dried basidiomata of *Chaetocalathus craterellus* festooning dead lianas of *Clematis vitalba* in a W. Sussex hedgerow on 11 Nov. 2025. Photograph © Martyn Ainsworth.

When I first encountered a large swarm of small, white, crepidotoid basidiomata in the *Clematis*-tangled hedgerow of a West Sussex (vc13) country lane, two thoughts struck me, both of which may be familiar to long-standing readers of Field Mycology. Firstly, although there was an overall resemblance to several common species, something about the basidiomata in front of me just looked a bit different. Secondly, I had a vague recollection of having read about this or a very similar species in a past issue of FM and, although I could not remember its name, I knew it was rare and would represent an interesting find if my hunch was correct. All I had to do was retrieve the relevant article. Back at home, it was not long before I rediscovered Henrici (2016) in which Alick discussed the British records of species formerly accommodated in *Pleurotellus*, an abandoned genus now relegated to the synonymy of *Crepidotus*. The fungus I had found was indeed one of these. It was *Chaetocalathus craterellus*, a white-spored agaric originally described from Algeria with a widespread distribution around the Mediterranean and now known to be related, not to *Crepidotus*, but to *Crinipellis* and *Marasmius*.

As reported in Henrici (2016), this species has very few verified British records. Indeed it came as quite a surprise to discover that it had already been honoured with a recommended English name (https://www.britmycolsoc.org.uk/english-names.html). It had originally been found in Britain in 1958 and 1959 on *Clematis*, *Rubus* and probably *Prunus spinosa* stems in scrub-covered coastal landslips near Axminster, South Devon (vc3), by Orton (1960) who published a good description when he redescribed it as *Pleurotellus patelloides* (now recognised as a later synonym of *C. craterellus*). This seems to be a very poorly known species in Britain judging from the fact that, until this year, the two Orton collections preserved in the fungarium at Kew had only ever

Fig. 2. Immature basidiomata showing shaggy white pileal tomentum and white lamellae radiating from a tomentose hub lying immediately below the point of attachment. Photograph © Martyn Ainsworth.

been joined by two other British collections, both of which had since been redetermined. Based on this, admittedly limited, history of misidentification, I would regard all other existing British records filed as *C. craterellus* as not verified unless there was accompanying and unequivocal supporting evidence, e.g. voucher materials, descriptions, photographs and micrographs. Although there are very few coloured illustrations of this species in the popular guidebooks used in Britain, e.g. in Buczacki *et al.* (2012) and Læssøe & Petersen (2019), there is an excellent set of photographs and micrographs on iNaturalist (https://uk.inaturalist.org/). Most of these show southern European specimens recorded from Portugal to Croatia and the species seems to be at, or very close to, the northern limit of its range in southern Britain.

Orton's treatment, which was essentially reprinted in Watling & Gregory (1989), described the basidiomata as "festooning twigs or stems for more than 1 ft. [30 cm] in length". Indeed, it was the degree to which criss-crossing lengths of dead *Clematis* lianas, *Rubus* stems and various twigs were festooned with the pendent, limpet-shaped basidiomata that initially drew my attention to their presence in Sussex (Fig. 1). On closer inspection, it became clear that the fungus was able to emerge from occupied dead stems as tufts of aerial mycelium and then form mycelial bridges between neighbouring woody stems that were in close contact. *Chaetocalathus craterellus* can therefore be added to the list of known 'twig welders' alongside *Hydnoporia corrugata* (Ainsworth & Rayner, 1990) and *Hyphodermella rosae* (Ainsworth & Liimatainen, 2019). This suggests that future searches for this species should focus on old hedgerows, thickets and scrub edges where there is a predominantly sheltered and damp microclimate to allow luxuriant development of the network of mycelial bridges. If, as suspected, it is near its northern limits in the UK, the southern coastal counties of England and Wales would seem to hold the greatest chances of success.

Fig. 3. Mature basidiomata (K-M001447203) showing silky pileus with concentric and radial undulations. Photograph © Martyn Ainsworth.

Fig. 4. Maturing tiered basidiomata (K-M001447203) showing white lamellae and pileal tomentum. Photograph © Martyn Ainsworth.

Fig. 5. Mature basidioma (K-M001447203) showing pale buff lamellae and irregular margin. Photograph © Martyn Ainsworth.

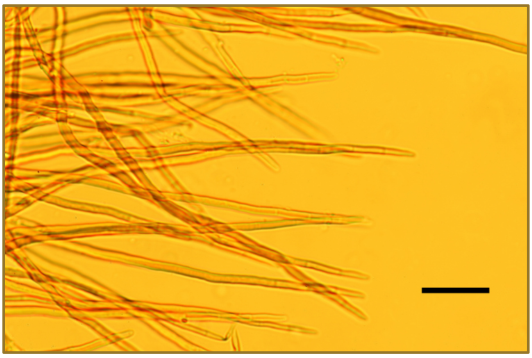

Fig. 6. Tapering hyphal apices of the pileal tomentum (K-M001447203) showing dextrinoid reaction in Melzer's reagent. Scale bar represents 30 µm. Micrograph © Martyn Ainsworth.

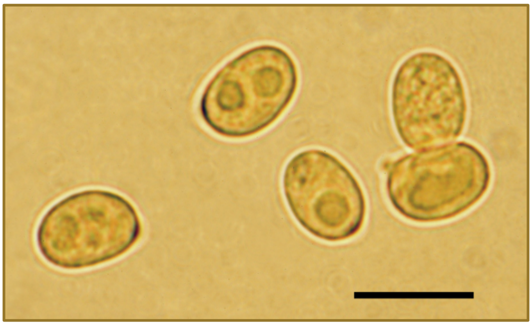

Fig. 7. Deposited spores (K-M001447203) in Melzer's reagent. Scale bar represents 10 µm. Micrograph © Martyn Ainsworth.

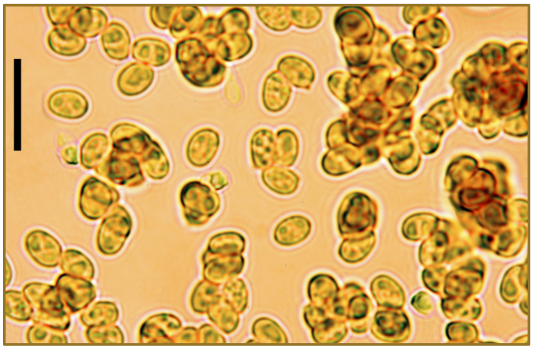

Fig. 8. Portion of spore print (K-M001447203) showing dextrinoid reaction in Melzer's reagent where spores overlap. Scale bar represents 20 µm. Micrograph © Martyn Ainsworth.

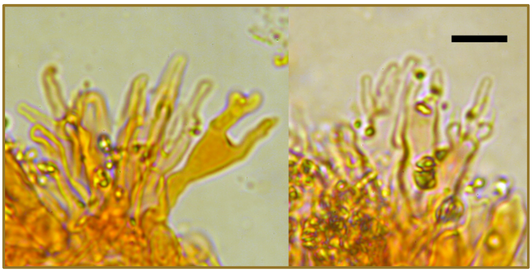

Fig. 9. Cheilocystidia (K-M001447204) in Congo red. Scale bar represents 10 µm. Micrograph © Martyn Ainsworth.

Details of recent collections

My initial collection (K-M001447203) was made on 4 November 2025 on dead attached stems of *Clematis vitalba* in New Way Lane, Clayton, W. Sussex (TQ29131428) which is *ca.*10 km from the south coast. Returning on 11 November with my camera, I observed nine discrete patches of *Chaetocalathus craterellus* in the hedgerows while walking between the original collection site and a point *ca.* 600 m to the east. These were sampled as: K-M001447204 from fallen twigs, probably of *Corylus*, at TQ29741420 and K-M001447205 from dead attached stems of *Hedera* and *Rubus* at TQ293142.

Description of recent collections

Pileus 2–12 mm diam., sessile, crepidotoid, white becoming cream or pale buff with age, initially conical with shaggy tomentum (Fig. 2) then flattening and becoming silky, sometimes developing concentric and/or radial undulations and an irregular margin (Fig. 3). **Lamellae** white, becoming cream or pale buff, radiating from conspicuous central tomentose hub (Figs 2, 4 & 5). **Spore print** white.

Pileipellis a tomentum of long, tapering, thick-walled dextrinoid hyphae (Fig. 6) sometimes becoming septate and toruloid at the apex. **Spores** broadly ellipsoid, smooth, 7.7–9.4 × 5.3–6.6 µm (n=20), weakly dextrinoid (Fig. 7) although this reaction was only obvious when viewed through several overlapping spores (Fig. 8). **Cheilocystidia** abundant on sterile lamellar margin, with irregular, antler-like, branched, digitate outgrowths, sometimes with scattered attached crystals (Fig. 9). **Pleurocystidia** not seen. **Hyphae** with clamp connections.

Summary of diagnostic characters

Silky, white, pendent, crepidotoid basidiomata, tomentose when immature, in swarms on criss-crossing tangles of dead woody stems in thickets, hedges and scrub. Pileal tomentum of dextrinoid, thick-walled, tapering hyphae, other hyphae with regular clamp connections. White spore deposit of broadly ellipsoid, smooth and weakly dextrinoid spores, 7.7–9.4 × 5.3–6.6 µm. Lamellar edge sterile comprising abundant distinctive cheilocystidia bearing antler-like, branching, apical ‘fingers’. Further details and photographs can be found in Antonín & Noordeloos (2010).

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A remarkable find and a new species for Britain & Europe *Flagelloscypha tetraedrispora* Agerer

Peter R. Smith

Fig. 1. *Micropodia pteridina* ascocarps; these are tiny, < 0.2 mm in diameter. Photograph © Peter Smith.

Fig. 2. *Flagelloscypha minutissima*. Photograph © Peter Smith.

In the autumn of 2023, while taking a Natural History group around Hilton Gravel Pits, a local nature reserve near Derby, I pulled up a few dead stems of bracken hoping to demonstrate the tiny white discomycete *Micropodia pteridina* (Fig. 1) which is normally ubiquitous on the blackened dead rachis bases just below ground level. On this occasion it was surprisingly absent, but on one rachis, just above ground level there was a small cluster of cyphelloid basidiocarps from the genus *Flagelloscypha* (Fig. 2). I obtained a good spore print (essential for this genus), from which I was able to recognise the very variable spore shape and size, with some spores appearing naviculate (boat shaped) in some orientations (Fig. 3). This, along with the two-spored basidia, the large acicular crystals on the hairs and the bell-shaped basidiocarps were all consistent with *Flagelloscypha minutissima sensu lato*. I was interested in collecting a few more basidiocarps to extract DNA for sequencing so I returned the following day. After a short search I found another small cluster of cyphelloid basidiocarps on another bracken rachis a few metres away from the first collection. These were somewhat less bell-shaped (Fig. 4) but I considered that this might be due to them being less mature. Back at home, I was also able to obtain a reasonable spore print from this second collection. However, when I viewed these spores with the microscope, I could hardly believe my eyes. The shape of the spores was +/- a triangular pyramid (thus a tetrahedron) with rounded corners (Fig. 5). Just two weeks earlier I had made drawings of the spore shapes for all the described species of *Flagelloscypha* and so recognised the spore shape and thus the species immediately. This was surely *Flagelloscypha tetraedrispora*, previously only known from a single collection on a fern rachis in Colombia in 1976 (Agerer, 1980). The holotype is kept at the New York Botanical Garden, but as far as I am aware it has not been sequenced. This spore shape is unique in *Flagelloscypha* and probably quite rare in the whole of the fungal kingdom. All the other features matched the description by Agerer. I was able to obtain a partial ITS (reverse)

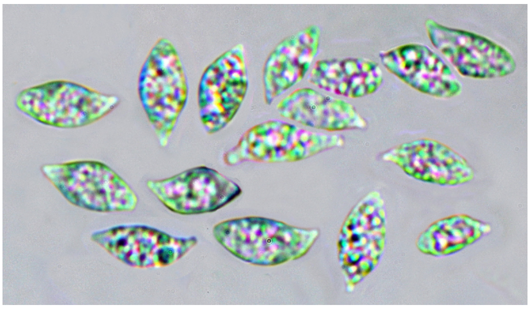

Fig. 3. Spores from *Flagelloscypha minutissima*. Micrograph © Peter Smith.

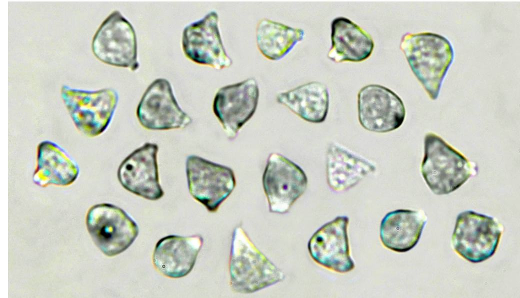

Fig. 5. Spores from *Flagelloscypha tetraedrispora*. Micrograph © Peter Smith.

sequence of 259 base pairs. This was enough to show that the nearest genus is indeed *Flagelloscypha*. A second attempt at DNA extraction was not possible without losing my voucher specimen, now consisting of just one basidiocarp, and a spore print on a glass slide. These are located in my fungarium as CY231016.

This is not the first new European record for a cyphelloid fungus that was previously only known from Colombia. In 2017 I collected *Incrustocalyptella columbiana* in Wales, quickly followed by further collections on Anglesey by Charles Aron and in Cornwall by Pauline Penna (Smith, 2021). It is a distinctive taxon that has dichotomously branched hairs with fragile needle-like extensions and spores resembling those of the genus *Calyptella*. It is no coincidence that both these species were collected in Colombia. In 1976 the cyphelloid expert Reinhard Agerer along with his students and his professor Franz Oberwinkler made a collecting trip to Colombia, from which the above two species along with *Flagelloscypha fusispora* and *Flagelloscypha oblongispora* were all described as new to science. Interestingly, collections of what appears to be *F. fusispora* have recently also been made in Britain and Denmark.

Fig. 4. *Flagelloscypha tetraedrispora*. Photograph © Peter Smith.

It should come as no surprise that some of these species have not been found again until quite recently. The cyphelloid fungi are one of the most poorly collected and studied groups in the basidiomycetes, one of the reasons I am so interested in their study. When a taxon is only known from a single collection it is not possible to have any knowledge of its likely geographical distribution, and when collections are later made from other continents, this is something that should be considered as more interesting than surprising.

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Asteroma frondicola in Britain from leaves of aspen (*Populus tremula*) and grey poplar (*P.* × *canescens*)

Brian Spooner[1], Paul Cook[2] & Finn Harrigan[3]

Specimens of an unfamiliar leaf disease of aspen (*Populus tremula*) and grey poplar (*P.* × *canescens*), causing large, blotch-like lesions and bearing numerous small, gregarious conidiomata on the leaf upperside, have been recently collected in Britain, from Caernarvonshire and East Kent. The conidiomata somewhat resemble telia of the rust fungus *Melampsora populnea*, frequent on leaves of aspen, but yield abundant conidia and represent a quite different fungus. Sori of *M. populnea* also differ in occurring mostly on the leaf underside, are slightly larger, and do not cause such leaf blotches. The present pathogen proves to be referrable to *Asteroma frondicola* (Fr.) Morelet, which has hitherto not been formally reported from Britain, though its presumed *Linospora* teleomorph has been reported on *P. tremula*. A description and brief discussion of the fungus based on these recent collections are provided in the present account.

The following synonymy for the anamorph is based on the discussion by Braun & Bensch (2022), with additional synonyms given by Sutton (1980).

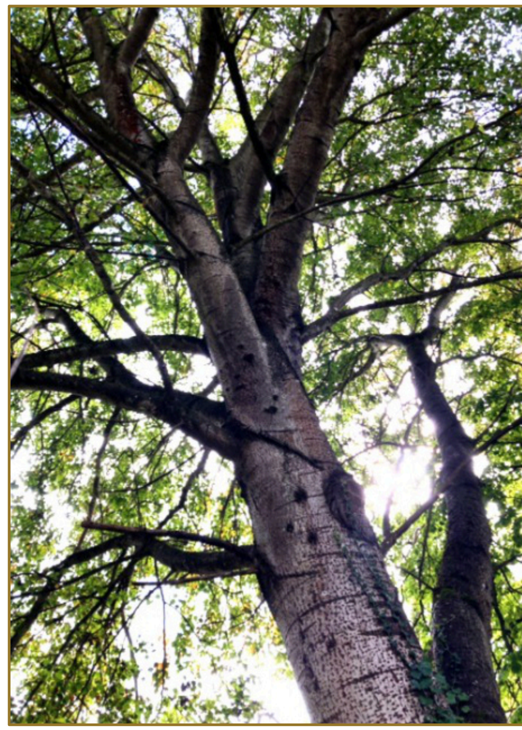

Fig. 1. Mature tree, host for the East Kent collection. Photograph © P. Cook.

Asteroma frondicola (Fr.) Morelet, *Bull. Soc. Sci. Nat. Arch. Toulon et du Var* 34 (no. 221): 15 (1978)

Depazea frondicola Fr., *Observ. Mycol.* (Havniae) 2: 365 (1818)
Sphaeria frondicola (Fr.) Fr., *Systema Mycologicum* (Lundae) 2(2): 529 (1823)
Leptothyrium tremulae Lib., *Pl. Crypt. Arduenna*, Fasc. (Liège) 2 (nos 101–200): no. 161 (1832)
Titaeosporina tremulae (Lib.) Luijk, *Annls Mycol.* 17(2/6): 112 (1920)
Gloeosporium tremulae Pass., *Hedwigia* 13: 187 (1874)
Gloeosporidium tremulae (Pass.) Höhn., *Sber. Akad., Wiss, Wien* 125: 95 (1916)
Gloeosporium populi-albae Desm., *Bull. Soc. Bot. France* 4: 799 (1857)
Gloeoporium populi-albae ß *tremulae* Sacc., *Michelia* 1 (no. 2): 219 (1878)
Leptothyrium circinans Fuckel, *Hedwigia* 3: 158 (1864)
Gloeosporium circinans (Fuckel) Sacc., *Mycotheca veneta*, Cent. X, no. 966 (1876)

Leaves with discoloured, rounded to irregular brownish, blotch-like areas 0.5–5 cm across (Fig. 2 & 3). Conidiomata acervular, epiphyllous, subcuticular, dark brown to blackish, slightly convex, 0.1–0.5 mm across, densely gregarious (Fig. 4 & 5). Conidia 19–27 × c. 3 µm, hyaline, non-septate, thin-walled, smooth, cylindric-fusoid with ends narrowed but rounded, usually slightly curved, after discharge often anastomosing in

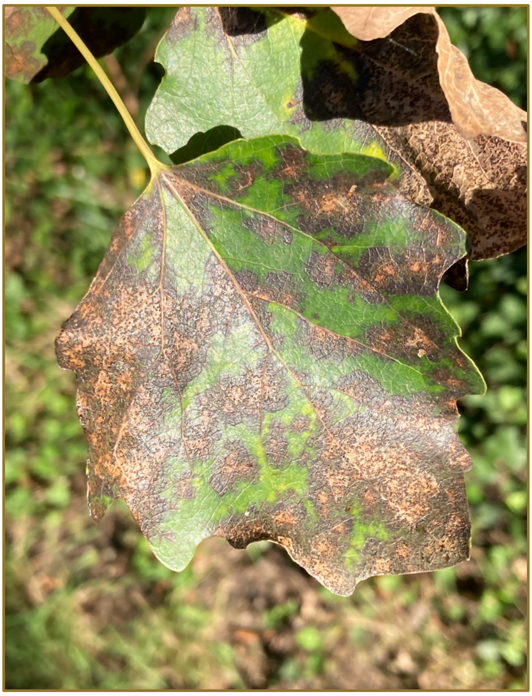

Fig. 2 & 3. Leaves of *P.* × *canescens* from the East Kent collection showing characteristic blotches and densely gregarious conidiomata. Photographs © P. Cook.

twos or threes by short lateral connections (Fig. 6 & 7). Conidiogenous cells phialidic, lageniform, 7–10 × c. 3 µm.

Specimens examined: England, vc15, East Kent, West Hythe, Romney Marsh, Royal Military Canal, TR12403425, very extensive on attached living leaves of large, mature *Populus* × *canescens* (Fig. 1), P. Cook, 16 Aug. 2025 (K-M001447867); Wales, vc49, Caernarvonshire, Penmachno meadows, SH80325253, on leaves of *P. tremula*, B. Dickinson, 11 Aug. 2025 (K-M001447195).

The fungus is included and briefly described by Grove (1937) as *Gloeosporium tremulae*, but he states 'Europe generally', and 'No certain British locality known', and, although the reported teleomorph (*Linospora ceuthocarpa* (Fr.) Lind) (*Valsaceae*; see Morelet, 1973; Pinon & Morelet, 1975; Monod, 1983) is known in Britain (Dennis, 1978), occurring on fallen, overwintered leaves, no previous records of the anamorph have been traced. A recent commodity risk assessment of *Populus alba*, *Populus nigra* and *Populus tremula* listed the anamorph as absent from the UK (EFSA

Fig. 4 & 5. Conidiomata. Close-ups from Welsh collection. Photographs © F. Harrigan.

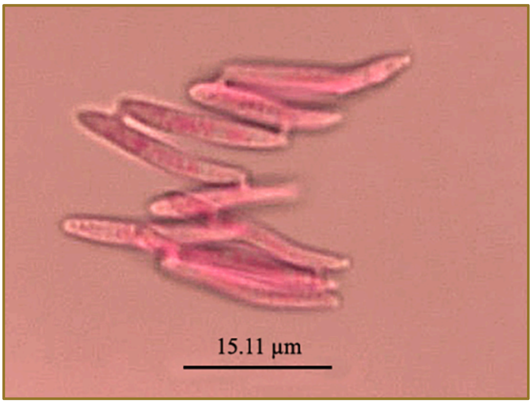

Fig. 6. Conidia, showing anastomoses, from the East Kent collection. Photograph © Finn Harrigan.

Fig. 7. Conidia, showing anastomoses, from Dickinson's Welsh collection. Photograph © Finn Harrigan.

PLH panel *et al.*, 2025). It is hence formally reported here as new to Britain.

Von Arx (1970) provided a revision of the genus *Gloeosporium* and a discussion of *G. tremulae*, which he referred to *Titaeosporina* Luijk. He placed *G. circinans* and *G. populi-albae* in synonymy. Sutton (1977, 1980) and von Arx (1981) included *Titaeosporina* as a synonym of *Asteroma* DC., and *T. tremulae* as a synonym of *Asteroma frondicola* (Fr.) Morelet., described from leaves of *Populus tremula* in Sweden. *Titaeosporina* was distinguished from *Asteroma* based on the anastomosing of the conidia, a distinction not accepted by Sutton (1977). *Asteroma* is typified by *A. padi* DC., a leaf pathogen of *Prunus padus*, which does occur in Britain, and is included by Grove (1937) as *Actinonema*.

Asteroma frondicola is known from many European countries, including Austria, the Czech Republic, Finland, France, Germany, Hungary, Latvia, Norway, Poland, Romania, and Ukraine as well as the former USSR, Pakistan and parts of the USA (Sutton, 1980; Cellerino, 1999; Szabó, 2001; Hüseyin & Selçuk, 2014; Ruszkiewicz-Michalska *et al.*, 2015). It occurs typically on *Populus tremula*, but is known also on other poplars of the Leuce species group (white poplars), including *P. alba* and *P. ciliata* (Sutton, 1980). Its occurrence on *P.* × *canescens* has been reported from Hungary (Szabó, 2001), and, as this is a hybrid between *P. alba* and *P. tremula*, is not unexpected.

The reported teleomorph is also a pathogen, mainly of white poplars, but is known occasionally from members of the Aigeiros species group (black poplars, *P. nigra* and allies) (Cellerino, 1999). It is not generally regarded as an important pathogen of *Populus* (Cellerino, 1999), but it can nevertheless lead to premature leaf fall and even defoliation in severe infections. It has small black stromata in overwintered leaves, with long-necked perithecia and thread-like ascospores.

Asteroma frondicola has been hitherto recorded throughout its range only occasionally, but in Norway has been recently reported as spreading rapidly since 2000 (Bjoner, 2014). The dearth of records of the anamorph is curious given the comparative frequency of the presumed teleomorph; it was not found, for example, during a study of *Linospora ceuthocarpa* in Finland (Kojwang & Kurtela, 1984). It may be that conditions for its development have been hitherto unfavourable (Bjoner, 2014), or that the anamorph, in which a wide range of conidial size has been reported, may prove to be a species complex as suggested by Kojwang & Kurtela (1984); the current collections have, at least so far, not been linked to the *Linospora*.

Mycologists should look out for the anamorph on attached and recently fallen leaves of aspen and related species of *Populus* from mid-summer onwards, and for the *Linospora* on fallen overwintered leaves from spring.

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Resupinates
A beginner's guide

Jasper Sharp[1]

Resupinate fungi remain a relatively overlooked field of study in mycological circles. Broadly defined, the term refers to basidiomycetes belonging to a number of different genera whose sporulating structures take the form of spreading flat patches that closely adhere to their substrate. They are typically wood rotters, and can be found on dead trunks and stumps, fallen or suspended branches and the undersides of logs. As such they play a crucial role recycling dead wood and returning nutrients to woodland ecosystems.

Some have a hymenium that lines the inner surfaces of vertical tubes, which have minute openings (pores) at their lower ends from which the spores are dispersed. These resupinate polypores include *Fuscoporia ferrea* (Cinnamon Porecrust) and *Xylodon paradoxus* (Split Porecrust) (Fig. 1), both common finds in the UK.

Fig. 1. *Xylodon paradoxus* (Split Porecrust). Photograph © Jasper Sharp.

However, the larger number of resupinates listed in the literature dedicated to the subject are described as corticioid, or non-poroid, and commonly referred to as crust or patch fungi. The spore-releasing hymenium of these species might be smooth, wrinkled (merulioid), toothed (hydnoid), downy, cobwebby, or possess a variety of other forms and textures (Fig. 2), and in most cases constitutes almost the entirety of their visible structure.

Precise definitions of exactly what the term 'resupinate' encompasses are up for debate. It is a descriptive category, rather than one with any taxonomic basis. Many fungi we might label as resupinates do not lie completely flat against their substrate, thus where to draw the line between these and bracket fungi, for example, can be a moot point. Examples can be found in the *Stereum* genus. The ubiquitous *Stereum hirsutum* (Hairy Curtain Crust), which typically forms densely packed, undulating shelves with a hairy upper surface if growing outwards from its substrate, can also appear as effused "flat" smooth patches, when found on the underside of logs. The related *Stereum rugosum* (Bleeding Broadleaf Crust) is more typically resupinate, but its margins can sometimes be seen curling up, resulting in a reflexed form that can overlap with those of other *Stereum* species. Similarly, *Chondrostereum purpureum* (Silverleaf Fungus) (Fig. 3) also adopts both effused and bracket forms, depending on the orientation of its growth.

As Alick Henrici (2000) writes more generally, in an earlier article on the subject of corticioid fungi, "Any demarcation line will be arbitrary and the question of where to draw it is not one of importance." The fact is, resupinates in general present a much overlooked and under-recorded aspect of British fungal diversity.

There are several reasons for this. Few resupinate fungi have common names, and most lack that one significant feature amongst other identifying criteria such as colour and habitat: a three-dimensional form. To the naked eye, many resupinate species look incredibly similar, appearing as flat blotches, skins, coatings, whitewash or encrustations of various hues and textures. There are exceptions, notably *Terana coerulea* (Cobalt Crust) (Fig. 4), whose striking blue appearance will leave little doubt as to what it is.

Most, however, require closer investigation under the microscope, as well as a knowledge of the obscure and exhaustive terminology that has evolved to describe the various microscopic features necessary for identification. The size and

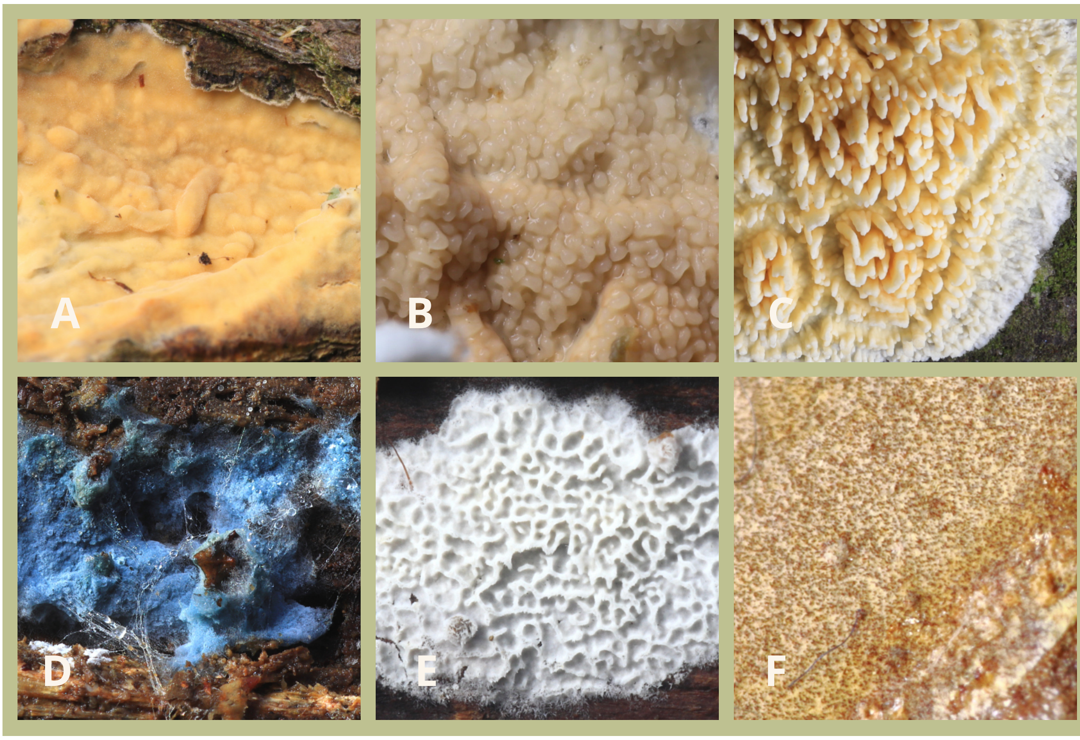

Fig. 2. **A**. Smooth, *Gloeohypochnicium analogum* (Fruity Crust). **B**. Wrinkled (merulioid), *Byssomerulius corium* (Netted Crust). **C**. Toothed (hydnoid), *Basidioradulum radula* (Toothed Crust). **D**. Cobwebby, *Byssocorticium atrovirens* (Green Webcrust). **E**. Reticulate, *Ceriporia reticulata* (Reticulate Porecrust). **F**. Bristly (with setae), *Hydnoporia corrugata* (Glue Crust). All photographs © Jasper Sharp.

dimensions of spores are one of the simpler parts of the puzzle. However, a plethora of specific terms exist to describe the different types of cystidia—the sterile cells embedded in, or projecting from, the hymenium between the basidia, whose function is poorly understood but provide an important guide to matching a specimen to a particular species. For example, leptocystidia,

Fig. 3. *Chondrostereum purpureum* (Silverleaf Fungus). Photograph © Jasper Sharp.

Fig. 4. *Terana coerulea* (Cobalt Crust). Photograph © Jasper Sharp.

Fig. 5. **A**. Leptocystidia on *Hyphoderma roseocremeum* (Blushing Webcrust). **B**. Gloeocystidia, shown here also with basidia, on *Dichostereum effuscatum*. **C**. Lyocystidia on *Tubulicrinis angustus.* **D**. Encrusted cystidia on *Peniophorella pubera* (Shuttle Webcrust). **E**. Halocystidia on *Resinicium bicolor* (Hallowed Crust). **F**. Septocystidia on *Hyphoderma setigerum* (Laddered Webcrust). All photographs © Jasper Sharp.

gloeocystidia, lyocystidia and septocystidia are just a few of the words used to describe the various forms (Fig. 5).

And herein lies another problem. In general, resupinate fungi tend to be given short shrift in general field guides, if covered at all, although volume two of Thomas Læssøe and Jens Petersen's *Fungi of Temperate Europe* (2019) does devote a good hundred or so pages to them. Fortunately, a number of helpful resources exist online, while the Facebook group Crust Fungi and Polypores is also a welcome haven for those wishing to share their finds with like-minded enthusiasts.

In terms of the literature dedicated to them, Kurt Hjortstam and Leif Ryvarden's eight-volume *The Corticiaceae of North Europe* (1973) is long out of print, while pending the publication of subsequent volumes, Karl-Henrik Larsson and Leif Ryvarden's *Corticioid Fungi of Europe 1: Acanthobasidium – Gyrodontium* (2021) will be of limited use if the specimen you are attempting to identify has a name beginning with the letters 'H' to 'Z'. Bernicchia and Gorjón's *Fungi Europaei, Volume 12: Corticiaceae s.l.* (2010) is the most thorough specialist guide still available, listing and keying out a total of 882 species that have been found in Europe.

However, Paul Hugill and Alan Lucas' invaluable *The Resupinates of Hampshire* (2019) is undoubtedly the most accessible guide for those starting out in the subject. It lists around 317 species across 130 genera found in the county, although one wonders how many more there might be within the British Isles if such a thorough survey were conducted in other parts of the country.

If all this sounds rather daunting, it should be pointed out that there are numerous species that can be identified relatively easily without recourse to microscopy, providing a welcome entry point before delving deeper into this obscure and overlooked field. When looked at more closely, resupinates present a world of surprising variety and beauty.

Across the winter months, the merulioid *Byssomerulius corium* (Netted Crust) (Fig. 6) is a common find. It tends to grow on, and indeed along, fallen deciduous branches and twigs that are quite thin, with the hymenium facing down but the margins of the fruitbody projecting outwards in long extended wings, a bit like a flatworm. On thicker branches, it might also form brackets. The flesh is white and soft, and easily torn, while the upper side is covered in fine downy hairs, which require a hand lens to see properly. It is, however, the underside where this species really shows off its most magnificent aspect, with its much more discernible intricate pattern of low, irregularly shaped grooves and ridges (Fig. 2B).

Steccherinum ochraceum (Ochre Toothcrust) provides a common example of a hydnoid resupinate, forming tough and durable pale orange fruitbodies that can survive desiccation, covered in spines up to a millimetre in length. The margins sometimes become reflexed from their substrate to form caps, but less often than the more distinctly bracketed forms of the related and much rarer *Steccherinum bourdotii* (Fig. 7). Another completely resupinate relative, *Etheirodon fimbriatus* (Fig. 8), has a hymenium surrounded by prominent cobwebby hyphal cords, but is typically found on the damp underside of rotting deciduous wood, while the other two are more exposed to the elements.

Peniophora quercina (Oak Crust) (Fig. 9) is less obviously distinctive, but still identifiable by sight. It forms smooth, thick and leathery crusts, primarily on oak branches, that take on a variety of colours, ranging from pale grey with pinkish and violet hues before becoming a darker grey. These are durable, persistent crusts, that crack when older, with the margins curling up to reveal a black underside. Amongst the twenty or so *Peniophora* species recorded in the United Kingdom, *Peniophora lycii* (Ashen Crust) is among the most commonplace, forming very thin waxy grey coatings that crack when dry on attached dead twigs and thin branches on a variety of garden shrubs and hedgerow plants. Sometimes you might spot the giveaway fruitbodies of *Tremella mesenterica* (Yellow Brain) growing in close proximity, a species which is parasitic on the *Peniophora* mycelium (Fig. 10).

Lyomyces sambuci (Elder Whitewash) (Fig. 11) might look, as do so many other thin white crusts, like daubs of white paint on its substratum, but, as Alick Henrici says in his Field Mycology article, “If it’s chalk-white and round the base of an elder and it is not in fact white paint”, then you’re almost certain that’s what it is. Similarly, *Dendrothele acerina* (Maple Whitewash), one of the few resupinates that grow on the bark of living trees rather than decorticated wood, is usually identifiable by its host, although microscopy reveals that there are other *Dendrothele* species on *Acer* bark.

Hydnoporia corrugata (Glue Crust) isn’t much to look at either, appearing in large but thin and firmly attached grey-brown patches, particularly on hazel, and with a smooth but finely cracking surface. Looking closely with a hand lens, it is possible to notice the presence of tiny bristle-like black hairs, or setae, projecting from the hymenium (Fig. 2F). The clincher for identification appears if you look around at the surrounding trees and spot the presence of twigs or branch fragments welded together by a thick black tar-like substance (Fig. 12), the peculiar way that this particular fungus has evolved to spread from host to host. In the damper west of the United Kingdom, *Hydnoporia corrugata* is parasitised by the very rare ascomycete, *Hypocreopsis rhododendri* (Hazel Gloves).

One of the other joys of plunging down the rabbit hole of resupinate fungi is that they can be found all year round in a variety of habitats, and with so few field mycologists specialising in these fungi, there are plenty of new discoveries still to be made. During lockdown, I found *Antrodia carbonica* (Cottony Porecrust) (Fig. 13) on a well-rotted Douglas Fir stump, its chunky, iceberg-like poroid fruitbodies with flesh that turned dark blue upon the application of Melzer’s reagent confirming the identification, even before examining the spores; it is a species with very few UK records. An outbreak of a creamy brown-yellow crust on my garden shed prompted a more thorough investigation. Not only were its small verrucose spores highly distinctive, but a microscopic examination of the hymenium revealed the presence of asterosetae, peculiar star-shaped structures (Fig. 14) that defined it as being a member of the *Asterostroma* genus. One can only assume that this particular specimen, identified as *Asterostroma cervicolor* (Brown Starweb) (Fig. 15), must have snuck across from wherever the raw materials for this shed had been imported.

On 9 September 2025, in a nondescript small copse just a five-minute walk from my home that has yielded little else in the way of mycological interest, I found three resupinates in close proximity on the underside of a fallen Field Maple branch by the side of a small pond that had dried up over the course of a long dry summer. Two were easily recognised: several small patches of the grey-brown toothed fungus, *Mycoacia fuscoatra* (Fig. 16), and the warty, garish yellow *Phlebia*

Fig. 6. *Byssomerulius corium* (Netted Crust). Photograph © Jasper Sharp.

Fig. 7. *Steccherinum bourdotii*. Photograph © Jasper Sharp.

Fig. 8. *Etheirodon fimbriatus*. Photograph © Jasper Sharp.

Fig. 9. *Peniophora quercina* (Oak Crust). Photograph © Jasper Sharp.

Fig. 10. *Tremella mesenterica* (Yellow Brain) growing with *Peniophora*. Photograph © J. Sharp.

Fig. 11. *Lyomyces sambuci* (Elder Whitewash). Photograph © Jasper Sharp.

Fig. 12. *Hydnoporia corrugata* (Glue Crust). Photograph © Jasper Sharp.

Fig. 13. *Antrodia carbonica* (Cottony Porecrust). Photograph © Jasper Sharp.

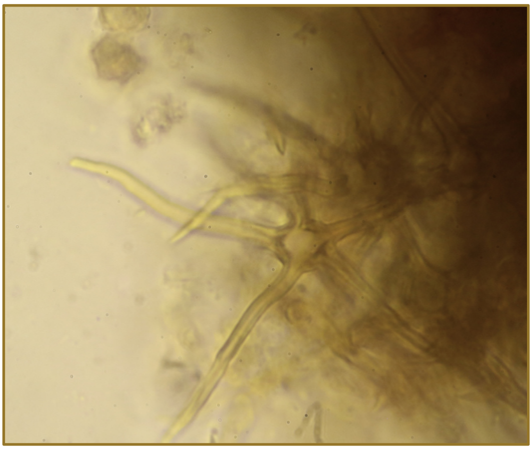

Fig. 14. The asterosetae of *Asterostroma cervicolor* (Brown Starweb). Micrograph © Jasper Sharp.

Fig. 15. *Asterostroma cervicolor* (Brown Starweb). Photograph © Jasper Sharp.

Fig. 16. *Mycoacia fuscoatra*. Photograph © Jasper Sharp.

Fig. 17. *Phlebia subochracea*. Photograph © Jasper Sharp.

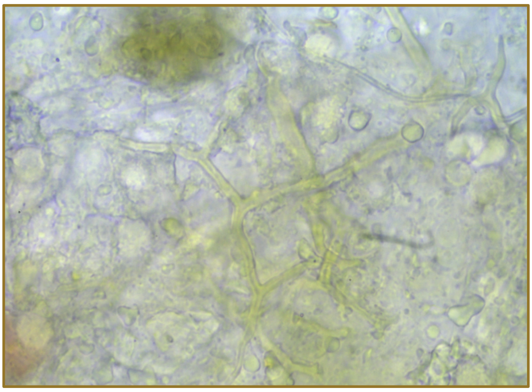

Fig.18. Hymenium of *Dichostereum effuscatum*, with the prominent thick branching structures known as dichohyphidia. Micrograph © Jasper Sharp.

Fig. 19. *Dichostereum effuscatum*. Photograph © Jasper Sharp.

subochracea (Fig. 17). The third, with its waxy salmon-pink hymenium, was something of a mystery. It yielded a light tan spore print, which, when mounted in Melzer's reagent, revealed spores with the same reticulated ornamentation as seen in *Russula* species. More intriguing was the presence of conspicuous branching structures in the hymenium (Fig. 18), which initially led me to believe I'd found another *Asterostroma*. I subsequently learned that these bifurcating terminal hyphae are called dichohyphidia, and are present in only a small number of species. A query on the Crust Fungi and Polypores Facebook group was answered by Lucie Zíbarová, who pointed me towards the species *Dichostereum effuscatum* (Fig. 19). This was subsequently verified by Martyn Ainsworth at Kew and is the first record for this globally rare species in the United Kingdom.

There are many questions that remain unanswered about the global distribution, environmental niches and associations between other species of resupinate fungi. Hopefully a greater awareness and appreciation of this neglected field will lead to further discoveries and a greater understanding of this ubiquitous but mysterious group.

Online resources

CrustFungi.Com [https://crustfungi.com/] – a wonderful online resource featuring an introduction, glossary, bibliography, keys and profiles of a select number of species.

Crusts & Jells [https://www.aphyllo.net] – website run by Elia Cristoforo Martini focussing on corticioid fungi and heterobasidiomycetes and featuring an exhaustive list of species descriptions.

Crust Fungi and Polypores Facebook Group [https://www.facebook.com/groups/869172633170329/] – social media group where amateurs and experts alike share their findings, photos and identification requests.

The Resupinates of Hampshire [http://www.hampshirefungi.org.uk/tombio/resupinates.php] – online keys created by Eric Janke from information in The Resupinates of Hampshire (2019) by Alan Lucas and Paul Hugill.

Non Poroid Resupinate Fungi In Great Britain [http://mycologykeys.org/Keys] – online keys to non poroidal resupinate fungi created by Leif Goodwin, using data provided with permission from several books on the subject to narrow down a specimen to a small group of species for further investigation using specialist works.

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Checklist of the British & Irish *Basidiomycota* Updates 13 & 14, a compendium of Updates 1–14 and the declining fortunes of a legacy database

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After 45 years of service, the "New Check List of British Agarics and Boleti" (Dennis *et al.*, 1960; Hora, 1960; Orton, 1960) was superseded by the first ever comprehensive checklist of the *Basidiomycota* of Britain and Ireland (CBIB). A preliminary five-year period of data gathering and analysis culminated in the launch of two products: an open-access database with webpages designed by Jerry Cooper and Paul Kirk and a 517-page softback book published by RBG, Kew (Legon & Henrici, 2005). The appointed project officer was Nick Legon and eight organisations were credited with provision of funds for the duration of the CBIB project. Acknowledging that the printed book was but a data snapshot, CBIB's authors peered into the future and envisaged that "the Internet version of the checklist will be regularly updated" (Legon & Henrici, 2005).

A series of 14 updates has now been produced at RBG, Kew, over the twenty years following completion of the funded CBIB project. In the first decade, these functioned as lists of editing instructions that were emailed to Paul Kirk. Paul had sole editorial access to the database and he ensured that successive updates were incorporated therein. Individual update documents were also made available via CBIB webpage links to act as a permanent record. Although CBIB has survived for two decades without external funding, its health has undoubtedly been in decline since 2015. In that particular year it was estimated that there had been 247 net additions (291 additions and 44 exclusions), almost all at species level, in the first ten years of updates. This equates to *ca.* 25 net additions per annum. When the next update (UD7) was issued in 2016, Paul Kirk had retired and the database ceased to be updated. Each update was still being uploaded to the website, but the editing instructions were no longer being implemented in the database. Searching became progressively more inconvenient. To find out whether a species was already included (or had been considered and then excluded) in CBIB, users had to query the database and then search through the accumulating pile of static updates (UD7 onwards).

By 2018, the CBIB database and webpages were still running, albeit in a faltering manner, on an ageing server in Paul Kirk's house. This had to be shut down completely due to a spell of prolonged hot weather in 2018 before CBIB was rescued and resuscitated on Kew's servers. However, funding for further CBIB development was not forthcoming and Kew ceased to upload the pdfs of successive new updates in 2021. The website displayed an alarming warning of its own impending demise from September 2021 until 17 December 2025, the date on which it was finally archived (https://sftp.kew.org/pub/data-repositories/basidiochecklist/). The archive also contains downloadable copies of Updates 1–9 and a compendium of Updates 7–9 (https://sftp.kew.org/pub/data-repositories/basidiochecklist/files/Updates/). The archive's accompanying text explains that "UK accessibility regulations require public-facing websites to meet specific standards so that they are usable by as many people as possible." It goes on to state that the CBIB "website's underlying technology could not be updated to meet those standards". Ironically, it was the UK's accessibility regulations that resulted in CBIB's data becoming less accessible.

A temporary haven for this admittedly underused national resource was found in 2023 courtesy of Paul Cannon's personal website "Fungi of Great Britain and Ireland" (https://fungi.myspecies.info/content/checklists). Paul uploaded all the available updates (UD1–12) and two compendia of updates, i.e. UD1–6 compiled by Antony Burnham in 2015 and UD7–12 (AMA). However, uploading of the most recent instalments (UD13 and UD14) was precluded by the retirement of the website's hosting platform (Scratchpads) in 2024. Despite the increasing difficulties in publicising this work and declining support, some of the highest net annual additions to the British and Irish basidiomycete funga were made over the last few years. Recalling the average of *ca.* 25 net additions per annum made during the first decade after publication of CBIB for comparison, in 2023 (UD11) this figure, now often backed with DNA barcode-supported evidence, rose to 91 spp., which was followed by a further 62 spp. in 2024 (UD12).

Last year's update (UD13), which could not be uploaded to either Kew's or Paul Cannon's websites, contains a record-breaking net addition of 163 spp. and is hereby made available as Supplementary File 1. The latest update (UD14) has been completed and is accessible as Supplementary File 2. To assist field mycologists in their efforts to check if their latest *Basidiomycota* collection is new to Britain & Ireland, the entire series of updates (UD1–14) has been compiled in one 146-page document which is available as Supplementary File 3.

The authors would like to acknowledge all the collectors and field/lab mycologists who have carried out the basic taxonomic and associated work evaluated by the CBIB process over the last two decades. We sincerely hope it will not take another gap of 45 years before the idea of having an annotated catalogue of our basidiomycete funga returns to favour.

Supplementary files

The following files are downloadable from the online article page at https://fieldmycology.org/

Supplementary File 1: CBIB Update 13 (UD13)

Supplementary File 2: CBIB Update 14 (UD14)

Supplementary File 3: Compilation of CBIB Updates 1–14 (UD1–14)

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The continuing mystery of the ancient *Prototaxites*

Geoffrey Kibby[1]

Way back in a 2008 issue of this magazine I rashly produced an article entitled "An ancient mystery solved?" (Kibby, 2008) giving the latest findings on fossils of the Silurian/Devonian organism *Prototaxites*, which lived 420–350 million years ago. At that point this strange, often towering behemoth (Fig. 1) was convincingly determined to be a primitive fungus.

These findings were based on analyses of the carbon-12 and carbon-13 content of the fossils and published in the journal Geology. Comparing these chemical traces with those of fossil plants it was argued that they could not be plants. They had earlier been thought to be the remains of ancient conifers but these were then only small. Very early plants had started their conquest of the land; conifers and other large trees had yet to evolve. Nor could they be algae, another theory that was popular for a while. They certainly were not animals, so that left the kingdom Fungi, with some species being enormous 9-metre-tall fungi at that! Other scientists have posited that they might have been some form of extraordinary lichen, part fungus, part algae.

Fig.1. An artist's impression of what *Prototaxites* may have looked like at this early stage of terrestrial life. Painting by (and ©) Geoffrey Kibby.

One of the problems with *Prototaxites* was, how did it feed? It has been argued that there was not enough other organic material around to support such a large body, so it must have been a lichen-like symbiotic organism, with its algae-like partner able to obtain energy through photosynthesis. But, as we know only too well with modern fungal taxonomy, opinions and knowledge change over time. A recent study has thrown these earlier ideas out of the window and come up with new and even more startling conclusions.

In a multi-author paper, Loron *et al.* (2026) present arguments showing that *Prototaxites* cannot fit into any of the known fungal groups but instead represents an entirely unique life form which eventually became extinct, leaving no modern survivors. They compared fossils with those of known fossil fungi from the same period and found major physiological and developmental differences between them. They found no evidence of any of the fossilisation products reflecting the presence of chitin, one of the fundamental molecules present in living fungi in their cell walls and indicated as being present in the fossil fungi that they also studied.

There was also no evidence of any algae-like photobiont within the structure that could photosynthesize. So, the authors conclude that *Prototaxites* was most likely heterotrophic or possibly saprotrophic, breaking down organic matter to obtain its nutrients.

The paper is long and complex and readers are advised to download it to read all of their arguments and results. Their conclusion is that *Prototaxites* may well be related to fungi but that the structural and molecular differences point to it being best assigned to an entirely extinct eukaryotic lineage. Is this the last word on the matter? Probably not, but it is certainly the most thorough study to date.

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Fungi in revivalist mode

Jo Weightman[1]

The strategies employed by fungi to ensure successful spore dispersal at the optimal time is ever a source of admiration. Some are able to distinguish between dry and damp and act upon it—think jelly fungi and some gasteroid fungi, such as *Astraeus hygrometricus* (Barometer Earthstar) (Fig. 1). The *Astraeus* is also an example of a fungus that moves, i.e. it opens its arms to rain and folds up when it is dry. I have seen this fungus spread widely across a rain-drenched hill top and failed to find even a singleton a few sunny days later. I have a sample, maybe 20 years old, which I delight my audience with most years (Fig. 2). It opens unfailingly during my hour long spiel and toasts on the radiator afterwards. *Schizophyllum commune* (Splitgill) plays the same trick, opening and closing its cunning flaps to keep spores dry or opening the gates and sending them off to multiply. *Marasmius* (in the old sense) species also play hide and seek, shrinking and collapsing in the absence of water, standing up boldly once wetted and put in a saucer on the windowsill. Other fungi use up many resources to produce specialised odours to attract a vector with a well-tuned sense of smell—think hidden underground truffles and remember *Phallus impudicus* (Stinkhorn) and its smelly relatives.

I am not a trained biologist, just a field mycologist asking questions. I do understand the why but not the how. How does water sensitivity work and how do some fungi move? If it is a matter of cells losing or absorbing water, how can that happen? Enlightenment please, but in simple terms for the non-scientist.

My musings were triggered by finding an old photograph of *Daedaleopsis confragosa* (Blushing Bracket) in parental mode on a dead birch log (Fig. 3) and another of *Fomes fomentarius* (Hoof Fungus) with well grown offspring on a fallen beech (Fig. 4). Examples do of course abound of brackets that have made new, correctly aligned growth on fallen wood and continue to feed from a now horizontal larder. The *Daedaleopsis* has produced a fringe of several mini brackets all in one plane, necessary in any polypore to allow the spores to fall freely from the tubes, these were presumably formed in the same year as it is an annual species. What might have happened to the growing edge to cause this fractured development? Why have I never seen *Fomitopsis betulina* (Birch Polypore), equally annual, doing something similar? Perhaps after all, it is an example of freakish one-off behaviour.

However, the new growth on the *Fomes* is at a different, but geotropically correct angle. The fungus is a perennial so has had ample time to make new successful spore-bearing layers. As I have in my time seen many hoofs on fallen trunks, in Scotland and in west Kent, and not seen a repeat of such growth, was this also freakish

Fig. 1. *Astraeus hygrometricus*, Kilndown, Kent, 1991. Photograph © Jo Weightman.

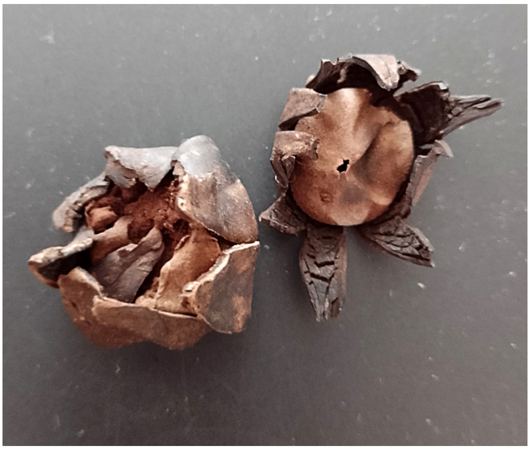

Fig. 2. *Astraeus hygrometricus* at home, 2026. Photograph © Jo Weightman.

Fig. 3. *Daedaleopsis confragosa* on fallen birch, Petts Wood, Kent, 1989. Photograph © Jo Weightman.

behaviour? And neither have I observed this behaviour on any of the equally large perennial brackets that have brought down their hosts, such as *Ganoderma* and *Inonotus*. Readers will, I hope, be happy to supply some examples.

Species of *Amanita*, if picked and put in a box or basket, within an hour will adjust their cap so that the spore-bearing gills are correctly aligned. Movement again. No doubt other genera will respond similarly. This movement is remarkable given the quickness of the response. Yes, it is advantageous geotropism at work—but how does it work?

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Fig. 4. *Fomes fomentarius* on fallen beech, Knole Park, Kent, 1990. Photograph © Jo Weightman.

Fungal Futures: Conservation news and views

Matt Wainhouse[1] & Rich Wright[2]

It's been one year since we started the Fungal Futures feature, in what feels like one of the busiest for fungal conservation. It's also been a busy few months for Great Britain's conservation agencies, with each country publishing substantial pieces of work that could significantly shape national nature conservation efforts. Yet, for an island as small as ours, it can feel disjointed to see increasingly divergent approaches to nature restoration when neither species—nor the threats they face—pay any attention to borders.

Conservation recommendations fall on Defra ears

While it's tempting to dwell on differences between countries, it's just as important to recognise the common ground too. Thus, we might look to their shared frustration with the Defra response to the 7th Quinquennial Review (QQR7) of the Wildlife and Countryside Act, the mechanism for deciding which species should receive legal protection.

Stakeholders last fed into the process in 2021 during the QQR7 consultation. In principle, the review is an objective, evidence-based assessment coordinated by JNCC and informed by experts across the statutory agencies and other organisations. In practice, it's been a source of mounting exasperation. JNCC's QQR7 report, published in December 2025, contained over a thousand recommendations to government. Among them were proposals to add 18 Critically Endangered non-lichenised fungi, including *Myriostoma coliforme*, *Geastrum berkeleyi*, as well as *Hericium coralloides* (Fig. 1), which remains at risk from foraging pressure (JNCC, 2025).

The recommendations were however published in Defra's remarkably brief response—presumably on the assumption that everyone had either clocked out officially or mentally in the days before Christmas—and amounted to little more than "thanks, but no thanks" (Defra, 2025a). Defra pointed towards other mechanisms such as Environment Land Management schemes, Biodiversity Net Gain, and Natural England's Species Recovery Programme being better vehicles

Fig. 1. *Hericium coralloides*, a rare species, is still threatened by harvesting. Photograph © Rich Wright.

for driving the recovery of these species—and there may be some truth in that. QQR7 did differ from previous reviews because it was proposed that all Critically Endangered species should be included by default. There's no doubt the addition of 1,000 new protected species across all kingdoms would be an administrative headache, though this was not given as a reason for rejection.

The protections under the Wildlife and Countryside Act were to protect vulnerable species from over-harvesting so it is far from a perfect tool for fungal conservation. Nonetheless the species protection lists at least elevate species' profiles and strengthen the case for conservation funding and protecting habitats. To reject the recommendations so broadly is a tacit admission that the legislation itself is not fit for purpose. Still, at least now we know where we stand as we look ahead to QQR8 in [checks calendar] 2026!

Wales: Species in Peril

Back in November, National Resources Wales published their *Species in Peril* report (Bosanquet *et al.*, 2025)—a substantial cross taxa assessment compiled by their species specialists. It brings together a single list of Wales' rarest and most geographically restricted species, defined as those known from five or fewer sites. The logic is simple: species confined to so few locations are inherently more vulnerable to extinction.

Almost 3,000 species made the list, including 309 fungi. For the fungal assessments, they drew on data from the British Mycological Society's FRDBI and the Fungus Conservation Trust. Each species is assigned to one of five restriction categories that indicate why they are so limited: Decliner, Edge of Range, Naturally Rare, New Coloniser, or Under Recorded—the latter being the most used, applying to 271 fungal species. Perhaps most noteworthy is that only one fungus, *Craterellus lutescens* [syn. *aurora*], is classed as a Decliner. It appears to have always been rare but is now known only from woodland around Swallow Falls in Eryri (= Snowdonia) National Park.

Threats were also assigned to each species and, somewhat ironically, fungi are hit hardest by both tree loss (affecting wood saprotrophs, foliicolous lichens, ectomycorrhiza and other root symbionts) and tree planting (impacting fungi of open grasslands). Although recent research suggests that climate warming may be boosting fungal diversity in some parts of Europe (Krah *et al.*, 2025), Wales' montane fungi look set to lose out—five of the listed species, including *Amanita nivalis*, face an increasingly uncertain future under a warming climate. Unsurprisingly, woodland, undisturbed grassland, and dune systems emerge as the most important habitats for rare fungi. Protecting veteran trees and deadwood, and managing grasslands and dune habitats sensitively, are highlighted as key actions.

For context, "five or fewer locations" aligns with the IUCN Vulnerable (VU D2) threshold. In the absence of full Red List assessments for many taxa at either Welsh or GB level, this rapid method offers a practical way to identify some of the high-risk species; information which can be helpful in prioritising scarce conservation resources. It is an approach other UK countries could usefully adopt to identify 'at risk' species—especially for species rich groups like fungi, where comprehensive Red Listing could take decades.

Ultimately, the *Species in Peril* report is a powerful reminder of the value of fungal recording. It also highlights the gaps which we, as a community of field mycologists, can help fill.

Scotland Revises its Biodiversity List

The recent revision of the Scottish Biodiversity List marks a significant shift in how conservation priorities are framed in Scotland. Compiled with conservation actions in mind, the revised list (Scottish Government, 2025) is more focused than its predecessor (NatureScot, 2020), reducing from 1,947 species across all taxonomic groups to 276—an 86% reduction. While this approach is intended to bring clarity for delivery, there are implications for fungal conservation.

Fungi have been particularly affected, dropping from 693 species in the previous list to just 39 in the revised version—a 94% decrease. The old list included 161 non-lichenised fungal species; the revised one just 26. Lichens have seen an even more dramatic contraction, falling from 486 species to 13. In addition, the old list recognised 28 lichenicolous fungi and 18 lichen habitat-associated fungi, which are absent from the revision. Slime moulds (20), not fungi, but traditionally studied and recorded by mycologists, are also no longer included.

This level of reduction is particularly significant given that the previous list represented only a fraction of the non-lichenised fungi of conservation concern in Scotland. A recent review of non-lichenised fungal conservation status (Wright, unpublished) identified over 350 species of concern in Scotland, more than a hundred of which have their highest recorded UK hectad counts within the country.

The UK is short on official Red Listings for non-lichenised fungi, so the priority species lists can play an important role in identifying species in need of targeted action, whether that's for use in site protection, for influencing land-use planning, or justifying targeted research.

In this context, the previous Scottish Biodiversity List was exceptional. By including three times more non-lichenised fungal species than any other UK nation's list, alongside extensive coverage of lichens and allied groups, it set an important precedent. It signalled that fungal diversity deserved serious consideration within biodiversity policy and provided a recognised reference for advocacy in the absence of formal Red Listing.

Sixteen of the species on the new list overlap with England's Threatened Species Recovery Actions work, which will lead to coordinated conservation on either side of the border in the coming years. *Thuemenidium* [syn. *Microglossum*] *atropurpureum* is perhaps the most interesting in this respect being found on the priority lists for all four countries of the UK.

Two species which are particularly exciting to see on the revised list are *Xenotypa aterrima* (Birch Bark Stripper) and *Desarmillaria ectypa* (Marsh Honey Fungus). Both are rare species found in bog and mire habitats and have their highest hectad counts in Scotland. Both make good candidates for translocation trials, an action that would be great to see implemented to increase their populations. *Xenotypa aterrima* is particularly exciting, as it is the host of the rarer *Dencoeliopsis johnstonii* (Birch Cup), one of seven fungi included on this list and on an accompanying list of species that need more research, which will hopefully also benefit.

The tooth fungi of Caledonian Pine forests (seven species of *Hydnellum*, five *Phellodon*, and *Sarcodon squamosus*), for which Scotland is a stronghold, have been included as an assemblage. Grassland fungi also have good representation on the new list, but as individual species rather than an assemblage. Hopefully this will support targeted research into their conservation management which will be widely applicable for the CHEGD grassland assemblage.

Beyond the species level there are 82 habitats that are included for actions, including temperate rainforest, which will hopefully lead to conservation actions for the lichen assemblage for which these woodlands are well known.

Overall, the list feels very approachable and covers a good range of habitat types. Despite the reductions in visibility of species of conservation concern, the revised list has prioritised species which should now have greater access to funding, which in turn should bring about quality conservation actions.

Defra 'refreshes' England's Environment Improvement Plan

England's long awaited, Treasury approved refresh of the Environmental Improvement Plan (EIP25) finally appeared on 1 December (Defra, 2025b). Among the watered down targets—such as the softening of SSSI monitoring commitments—there is at least a new acknowledgement of fungi within England's extinction risk target. It's a small but genuine gesture that recognises fungi in its conservation framework.

Yet for a government keen to champion the inclusion of fungi in national biodiversity policy on the global stage, a key feature of Britain's co-sponsored COP16 Pledge (see Wainhouse and Wright, 2025), it remains strangely tone deaf. Despite strong lobbying from Chile-based charity Fungi Foundation, the document is far from "3F" (flora, fauna, funga) compliant. It barely touches on the contribution of fungi to soil health or on the biosecurity risks associated with their movement. Most striking is the total absence of any biosecurity strategy for non-pathogenic fungi. Even the definition of Invasive Non Native Species only covers animals, plants and their diseases. With saprotrophic species like *Pleurotus citrinopileatus* (Golden Oyster) and mycorrhizal species like *Amanita phalloides* (Death Cap) (Fig. 2) spreading in the US, it's bewildering that no plan exists to address similar risks here. Until that changes, it will fall to the recording community to provide the vigilance needed to spot outbreaks before they take hold.

Still, this version is an improvement on the previous iteration (EIP23), whose apex goal, "Thriving Plants and Animals", has evolved into the more inclusive "Restored Nature". That shift feels more in tune with ecological reality. The more we separate plants, animals and fungi into neat administrative silos, the harder it becomes to plan for conservation in an integrated way. Whether the semantics will translate into

Fig. 2. *Amanita phalloides* is a common native species in UK woodlands but is an aggressive invasive in the US. Photograph © Rich Wright.

meaningful action remains to be seen, but if each taxonomic group is left to fend for itself—with bird people looking after birds, bee people looking after bees, and mushroom people looking after mushrooms—we will struggle to restore our beautiful and complex natural world. They say it takes a village to raise a child; the same principle holds for restoring nature.

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A Brush with Fungi
A 30 year journey

David Mitchell[1]

My interest in fungi stemmed from my hobby of bird watching. I would be distracted every autumn by the variety of fungus species that were about when I should have been looking for birds. This was the start of my interest and I began foraging for edible mushrooms.

As a beginner I bought books on the subject and tentatively sought out and carefully identified the ones that were not deadly but delicious. As my skills and confidence increased I began to appreciate the ones that were not edible but were just lovely to find and to admire their colours, textures, shapes and simply how beautiful they were.

Inevitably my fungus book collection built up. Then about 30 years ago it dawned on me that I was quite reliant on three books to help me identify new mushrooms. One had easy to understand text, one with clear photographs and the last with good illustrations and the thought crossed my mind that it would be great if there was just one book that had both simple text and good, clear images. So 30 years ago I decided that, as a trained artist, I would paint every fungus species that I came across in a way that I would like to see in a fungus ID book.

My starting point was to work on a format and layout that would be a template for all my artistic endeavours. I decided that every fungus species would be painted on A4 paper, ideally life size and painted from every angle and in cross section to show all the key characteristics necessary for specific identification. If possible I would paint them at different stages of growth as well. The advantage of illustrations over photographs was that any key point could be emphasised whereas a photograph might not show that characteristic clearly. Artistic licence!

And so the journey began. I did not paint mushrooms year on year but dipped into the project when time permitted. I really liked to paint new species on the spot as I found that sometimes fungi could lose a skirt ring or the shape might flop slightly in transit. So lay-bys, fallen tree trunks, stumps and bird hides became impromptu studios.

Fig. 1. A mushroom knife and hand lens are essential in the field. Image © David Mitchell.

As my strength lay in painting these mushrooms I asked for guidance and advice from professional mycologists who were happy to help. This gave me peace of mind that my possible mistakes would be picked up whether on identification or description. I was impressed with the enthusiasm and support I got from the mycological 'family'. It was really encouraging and boosted my confidence in the whole project.

On many of these sojourns I came across fungi that were new to me which were duly painted and then checked later for their identification. On one occasion I was at a loss to identify a new mushroom. Social media came to the rescue and it was identified as *Lactarius lignyotus* or Velvet Milkcap (a hemiboreal *Picea* associate found in Angus in 2020—*Ed.*). Geoffrey Kibby expressed an interest in this and I posted him some specimens which he sent to a lab to be DNA sequenced. After

Fig. 2. Gills are very difficult to paint realistically. It took much practice. Image © David Mitchell.

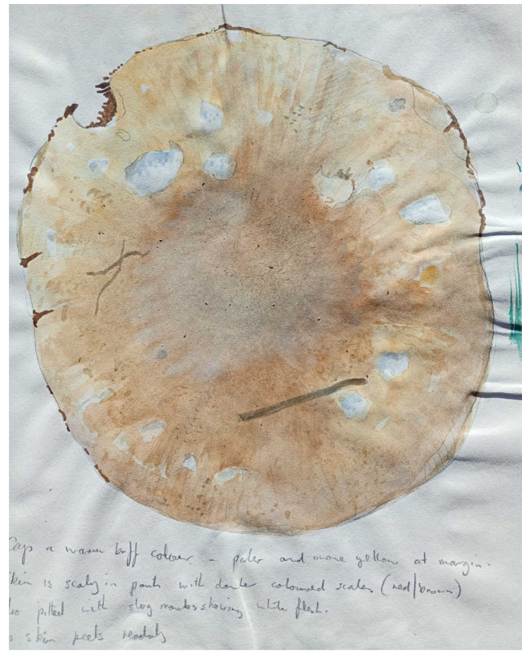

Fig. 3. A field sketch of a Field Mushroom cap. Image © David Mitchell.

checking the records for this species at Kew it transpired that mine was authentic and the first for the UK!

As time went by the number of mushroom species painted grew to well over 300 and I realised that the reality of a book of my paintings was gathering pace and thoughts of how to publish became my next priority. It had crossed my mind that to get some kind of endorsement would do no harm and I asked Chris Packham to write a foreword which he kindly did. I knew Chris through my interest in nature and my environmental cartoons and was so pleased when he agreed to help having seen some of the original artwork.

As a trained artist I had, over the years, produced illustrations for several books, magazines journals, etc, but this would be the first, and at 76, possibly the only book with my name on the cover! As such I wanted full artistic control over every publishing aspect: typeface, layout, graphics, etc. I knew I would not necessarily have this if I went to a publishing company so I decided to print the book privately. This was a very expensive route to take but I was prepared to do this as I had every faith in the book's content and after all it took me 30 years to get to this point!

I found a printing company who gave me full reign to indulge myself and I worked closely with one of their graphic designers. I would visit him once or twice a week and we worked on every page from the front cover to the back cover and everything in between. Each page has the Latin name and common name and a key at the bottom of each page provides its status, season, habitat and spore colour.

Last July saw the fruits of my labours realised! A Brush with Fungi was born! It is an A4 hardback with over 400 pages with paintings and descriptions of 260 different species of fungi. My *magnum opus*!

Summerfield Books are selling the book on my behalf.

All the book reviews have been glowing. Let me finish with a quote from one.

"It's a love letter to fungi".

[1] David is a member of the British Mycological Society and lives in Kirriemuir, Angus, Scotland.

A Purple Plaque campaign for Mary Lloyd Wynne, 19th century mycologist

John Ratcliffe[1]

The purpose of this page is to inform readers that there is a project underway to erect a Purple Plaque to honour the memory of Mary Lloyd Wynne, the possible site being her local church in North Wales.

Many of you will know that she had four species and at least one, possibly two genera named after her. For more on that see Alick Henrici's (2022) note on the species named for Mrs Lloyd Wynne, in a previous issue of Field Mycology.

The purpose of a Purple Plaque is to commemorate the achievements of Welsh Women in the Arts, Science and Sport.

The BMS has kindly approved my recent small grant application to the tune of £500 but the target figure to complete the project is £1000. My two local groups, North West Fungus Group and Shropshire Fungus Group have each pledged £50 and I have asked for a donation from the Herefordshire Fungus Survey Group, so we are short of the target by approximately £350.

The Press is aware of our intentions and the eventual presentation is expected to be widely publicised, hopefully creating extensive awareness of the BMS and mycology in general.

Mary lived on a country estate near Betwys-yn-Rhos called Coed Coch, she collaborated with a local naturalist, Alfred Osten Walker and hosted fungus forays at Coed Coch involving leading mycologists of the day, many associated with the Woolhope Naturalists' Field Club (Fig. 1). She participated in many of their ground-breaking forays, from which the term "fungus foray" originated and recorded fungi from a variety of locations across Britain and continental Europe.

There are 71 of Mary's drawings and paintings, in four albums, now located at Kew along with many of her collections which are in the Berkeley and Broome Fungarium.

Miles Berkeley (1803–1889) is widely recognised as being one of the founders of British mycology and he wrote a dedication to Mary in his "Outlines of British Fungology" published in 1860 which reads as follows: "To Mrs Lloyd Wynne of Coed Coch in the county of Denbigh; This work is inscribed as a small tribute to the zeal with which she has studied the numerous fungi of her beautiful Country and the many acts of kindness which she has bestowed upon the author."

A comprehensive account of the life of Mary Lloyd Wynne and her mycological activities has been published by the Woolhope Club (Edmondson, 2021).

I hope you will agree that the idea of creating a Purple Plaque to celebrate Mary's contribution to mycology is a worthy one and should Committee members of any other Fungus Groups be reading this, perhaps I could respectfully request a small donation towards completing the project from your Group.

Please send donations to the following Bank Account:

Purple Plaque Campaign

Sort Code: 30-98-97

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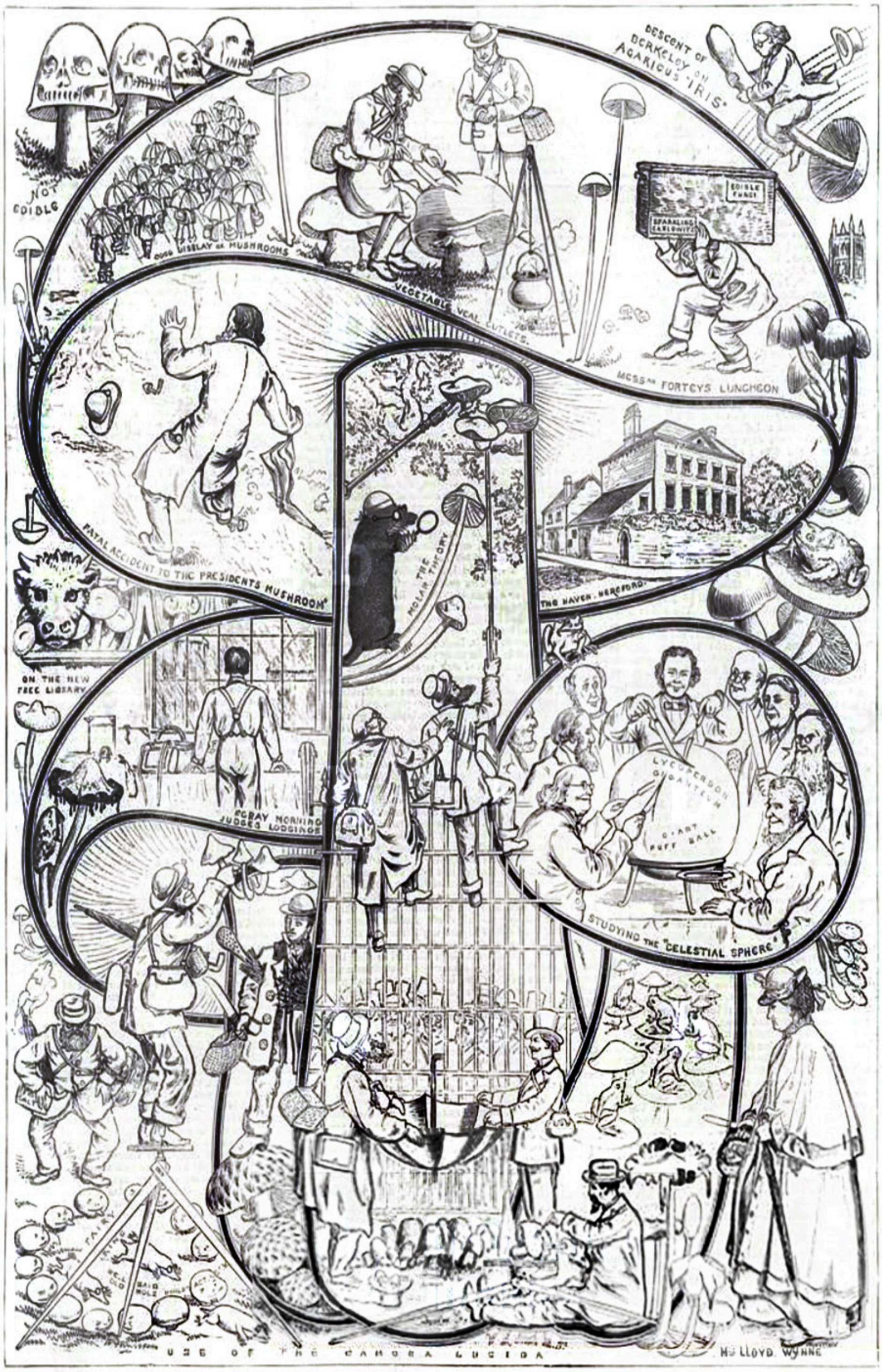

THE HEREFORD FUNGUS FESTIVAL

Fig. 1. 'Mrs Lloyd Wynne' (bottom right) in 'The Hereford Fungus Festival', drawn by Worthington G. Smith Originally published in The Graphic, 17 October 1874 (Edmondson, 2021). Public domain image.

Alan Outen (1949–2025): an obituary

Fig. 1. Alan at Flitwick Moor in Bedfordshire, one of his favourite sites. Photograph © Pattie Outen.

Fig. 2. Type specimen of *Conocybe fimetaria*, photographed by Alan Outen at Stockgrove Country Park, Bedfordshire.

Alan Outen, who passed away in September 2025, was a skilled field mycologist and excellent all-round naturalist.

Alan was born in Walthamstow in January 1949. The family later moved to Luton, and Alan spent the rest of his life in the North Hertfordshire/ South Bedfordshire area. After obtaining a degree in Zoology with Botany at Luton College of Technology, he worked briefly as a research assistant in the Department of Biophysics at Kings College, London before spending 17 years teaching Environmental Studies at Hitchin School and then becoming a Countryside Conservation Officer.

While teaching at Hitchin School, Alan married a fellow teacher, Pattie Harris, and they subsequently had two sons.

Alan was an assiduous and meticulous field mycologist who found several species new to Britain and to science. He was fungi recorder for both Hertfordshire and Bedfordshire for many years and played a key role in establishing thriving local fungus groups in these counties. His mycological knowledge of the area led to the publication of The Fungi of Hertfordshire in 1994, which he co-wrote with Margaret Holden. Further afield, he led a popular annual mycology course at Kindrogan in the Scottish Highlands from 1993 to 2005. He had a keen interest in the genus *Inocybe*, and, with Penny Cullington, published Keys to the British Species of *Inocybe*.

Beyond mycology, Alan had a compendious knowledge of natural history, especially vascular plants, bryophytes and insects. He was a leading light in the Bedfordshire Natural History Society and, with Christopher Boon, co-authored a Flora of Bedfordshire, published in 2011. He led over 50 botanical tours to various locations in Europe with Naturetrek, and undertook pioneering work on the effects of light pollution on wildlife. His lifelong contributions were justifiably acknowledged when in 2019 he was runner-up of the NBN Award for Wildlife Recording – Terrestrial.

Alan was an excellent photographer, and at an early age resolved to photograph 25,000 identified species during his lifetime. Over the years, he made steady progress towards this target but ultimately fell just short, with a remarkable final tally of 24,669, including many fungi. Many of his photographs have been used in natural history publications.

Alan's contribution to mycology, and natural history more widely, go far beyond these bare facts. I think he will be best remembered for the influence he had on others. His passion and erudition underpinned a natural talent for teaching and inspiring people. I first met Alan as a schoolboy when he was a teacher at Hitchin School. He fostered my budding interest in botany and mycology, and I have many fond memories of autumnal fungal forays and excursions to record bryophytes. Field trips with Alan were never dull. Lengthy and detailed discussions about the characteristic features of a particular fungus would often be interrupted by a reference to a Gilbert and Sullivan opera or a comedy sketch by Peter Cook and Dudley Moore. I know there are countless other people who were inspired by Alan over the years, including some of the best field mycologists in the country. That is a wonderful legacy.

Marcus Yeo

A note prompted by the recent account of *Psilocybe fuscofulva*

Alick Henrici[1]

Psilocybe fuscofulva was reported new to Britain in the last issue (Kibby *et al.*, 2025), found in Scotland in some quantity among sphagnum but in fact growing from old mostly buried railway sleepers. It was cautiously considered "not certain, but very likely" that these were a relic of wartime operations by members of the Canadian Forestry Corps. This report brought to mind a previous report in Field Mycology with some common features. It lends further support to the suspected Canadian connection and suggests the substrate was probably *Pseudotsuga menziesii*.

The earlier report concerned another species new to Britain, growing on a similar substrate, in this case a stout balk of coniferous timber of unknown origin, but too thick to be a sleeper, used to shore up the edge of a car-park in Kent in 2002. On it grew a magnificent *Hericium* that fitted nothing in the European literature. The substrate was determined by a wood specialist at Kew as *Pseudotsuga menziesii* (Douglas Fir) (Fig. 1). Known British *Hericium* species were all confined to hardwoods. An account with a fine photo was published in Field Mycology (Henrici, 2003a). This quickly got a response from Gordon Dickson making two shrewd observations. Firstly its details seemed rather a good fit for the N. American species *H. abietis* well known there on this substrate, the largest of the American West Coast *Hericium*. Secondly this is a wood very widely imported into Britain from Canada by the building trade where it is known as 'Canadian Pine'. These details I duly reported in the next issue (Henrici, 2003b).

It was never seen to fruit again, despite several years of diligent monitoring. There the matter rested for ten years until a paper was drawn to my attention (Hallenberg *et al.*, 2013) in which this collection had been sequenced and Gordon Dickson's suggestion shown to be correct. This I remember well as I rejoiced that the news had come in time to pass it on to Gordon, then aged 93, who certainly hadn't forgotten its occurrence. Field Mycology 14(4) contains both a report from me of that happy outcome (Henrici, 2013) and an obituary notice from Geoffrey Kibby for Gordon who died just a few weeks later (Kibby, 2013). As far as I am aware, that collection is still its only European record.

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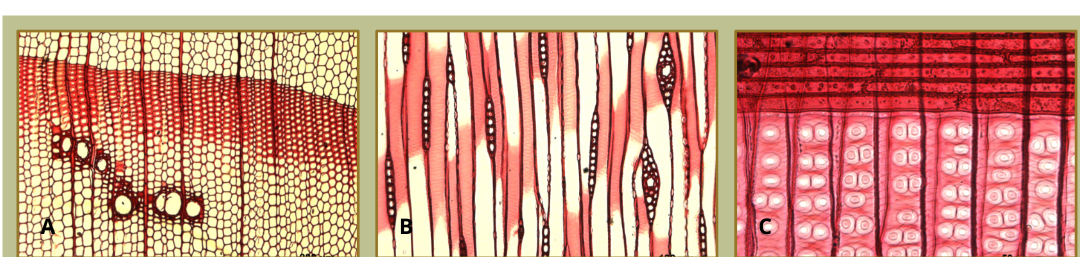


Fig. 1. Illustrative images of *Pseudotsuga menziesii* (Douglas Fir) anatomy, provided by the very same wood specialist at Kew who determined the substrate of the *Hericium*. **A.** Transverse Section: showing axial resin canals with thick-walled epithelial cells in earlywood, thin-walled earlywood tracheids, thick-walled latewood tracheids and a growth ring boundary. **B**. Tangential Longitudinal Section: showing radial resin canals with thick-walled epithelial cells and tracheids with helical thickenings. **C**. Radial Longitudinal Section: showing tracheids with single and pairs of bordered pits and helical thickenings, and ray cells with cross-field pitting. Images © Peter Gasson.

Book reviews

Grassland Fungi: a field guide (3rd edition)

Elsa Wood and Jon Dunkelman

Monmouthshire Meadows Group, 2025
ISBN 978-0-9576424-3-0
Softback 432 pp.
£24.99 from NHBS and other booksellers

Ed. This review of the third edition of a book that has been revised substantially since we reviewed the first edition in *Field Mycology* 19(1) is reproduced from the British Mycological Society journal *Fungal Biology Reviews* (FBR), where it appeared as part of a longer 'mycological book news' article by David L. Hawksworth (2025).

My thanks to David for permission to reproduce it here.

Reference

Hawksworth, D.L. (2025). Editorial: 2025 mycological book news. *Fungal Biology Reviews* 54: 100461, p.8. https://doi.org/10.1016/j.fbr.2025.100461

First published in 2017, it is wonderful to see this new edition keeping this identification manual available at a time when there is an increasing awareness of the importance of established unimproved grasslands for fungal conservation. It has also swelled by 96 pages to accommodate yet more species.

It is based on surveys and photographs by field mycologists working in the Wye Valley, Monmouthshire, and neighbouring counties in south-east Wales, and also Gloucestershire and Herefordshire in adjacent parts of England from August 2015 to December 2024. This may seem somewhat parochial, but in fact many of the over 200 species treated here are widespread in lowland Britain so it merits much wider usage.

The introduction covers both conservation issues and how to identify macrofungi, with clear line drawings and photographs. While spore colour is always given, unfortunately in my opinion, the decision was made not to include illustrations of spores and spore sizes as that information is available "in many other books" (p. 27). While that is certainly true, I wonder how many of those surveying grassland fungi have those books back home? Perhaps at least the shapes and sizes can be added in a fourth edition. … I was, however, pleased to see the importance of environmental DNA testing pointed out (p. 15) as this can detect species of conservation importance that chance not to be producing basidiomes when sites are surveyed.

The species treatments are really impressive as in addition to the features detailed in text, many have 4–9 colour photographs showing variations in shape and colour as well as details of diagnostic features such as of the gills. English names are used as well as scientific ones, and they point out the English names are more stable, a sad indictment of the current practice of erecting new generic names for even more narrowly restricted clades. At least there is a table detailing the name changes, references to helpful websites and other sources, and selected books.

I have been using the first edition myself since it first appeared, and cannot commend it too highly. It is also gratifying to see that the project to produce this work has been funded by the Welsh Government Sustainable Development Fund. If only all Governments were so enlightened about recognising the importance of fungi in nature conservation!

David L. Hawksworth

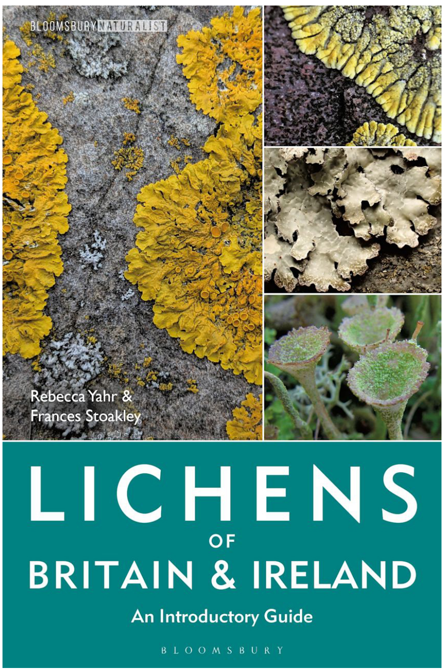
Royal Botanic Gardens, Kew, Richmond, TW9 3AE;
The Natural History Museum, Cromwell Road,
London, SW7 5BD

Lichens of Britain and Ireland

Rebecca Yahr and Frances Stoakley

Illustrated by Liz Campbell

Bloomsbury Wildlife, London, 2025
ISBN 978-1-3994-0474-7
Softback 256 pp.
£25 from booksellers



Given their ubiquity and availability throughout the year, their beauty, great diversity in both form and speciation and clear usefulness in indicating environmental conditions it is difficult to understand why so few field mycologists seem to take an interest in lichens. If the lack of a good introductory guide provided them with a fig leaf to hide such a dreadful omission, then that leaf has been stripped away! Rebecca Yahr and Francis Stoakley have teamed up with Bloomsbury Wildlife to produce the missing text. It is entitled 'Lichens of Britain and Ireland. An Introductory Guide'.

In 256 pages, at A5 size so it fits in the pocket, this stunningly produced book is packed with hundreds of clear, colour-correct images. Its intended readership is anyone who has just begun to look at lichens and wants to identify some. Getting to grips with the relatively few technical terms is made easy as you can instantly access prompts displayed clearly on fold-in extensions of the front and back covers. Concise introductory sections explain what a lichen is, their importance within various ecosystems and where best to find them. The section on their importance as assessors of environmental health was the only section I wish might have been expanded, particularly to explain the value of lichen twig communities in measuring the impact of ammonia as a pollutant.

There is an important section explaining the unfortunate recent instability in lichen fungi Latin names. The many new names of the c.200 lichen species with detailed descriptions have been employed, supplemented by the addition of the old name in brackets. The fully described species now mostly bear English names. Many, such as the Fire Dot and Sun Burst lichens, were borrowed from North America. Three ways are offered to identify a lichen. Some of our most distinctive and/or common species are grouped by habitat. A second way in is by what is called 'a bakers dozen'- a group of distinctively coloured or shaped common species with postage size images grouped on one page. The final and largest section illustrates and describes c.200 of either the commonest or most distinctive lichens with small images and helpful hints as to how to separate them from similar species. In addition, several pages are devoted to what are called 'Quick Guides' with small illustrations grouped together by similar growth forms.

Finally, there is a 'Trouble Shooting' section where you are confronted with the fact that it really was paint you were looking at or you had stumbled on a confusing look-alike in the form of a liverwort or alga.

In all an exceptionally well thought through and superbly illustrated guide for anyone with even the smallest interest in what is after all, a substantial part of our wonderful mycological heritage.

Ray Woods

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