Book Reviews

Flora of Lichenicolous Fungi

Volumes 1 – Basidiomycetes

Paul Diederich, Ann M Millanes, Mats Wedlin, James D Lawrey
Luxembourg National Museum of Natural History, 2021
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Volumes 2 – Hyphomycetes

Paul Diederich, Damien Ertz, Uwe Braun
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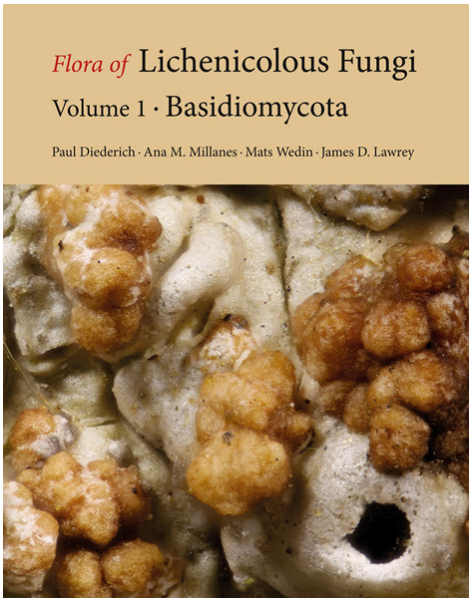
Over the last ten years, interest in the fungi that grow on lichens has been increasing, both amongst lichenologists and amongst mycologists.

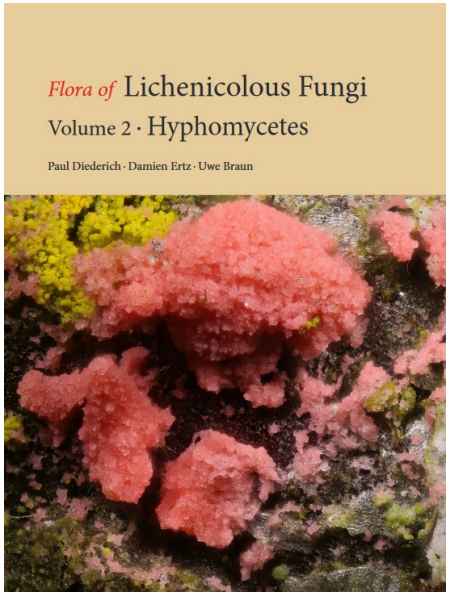
However, literature has been mainly limited to research papers. It has been difficult to find, and in some cases it has been locked behind pay walls. Some of the lichen websites and the *Fungi of Great Britain & Ireland* website have useful descriptions of lichenicolous fungi – but only of those species which have come to the attention of the website authors. There has been an almost total lack of modern keys and no identification handbooks.

But this is changing. A group of authors, led by Paul Diederich, has set out to (temporarily!) solve these problems. Aiming high, they have not just set out to write a national or regional flora; they've set out to give a modern and up-to-date account of lichenicolous fungi across the entire world!

And the most remarkable decision the authors have made, has been to tackle first the most obscure, and often avoided, sub-groupings of lichenicolous fungi: the basidiomycetes and the hyphomycetes.

Field mycologists will be shocked to hear basidiomycetes described as 'obscure' but in lichenicolous fungi terms they are. Very few lichenicolous basidiomycetes are macro-fungi. Some of them form a hymenium with recognisable basidia and basidiospores on their lichen hosts but many are only known as bulbils with few characters for a mycologist to work with. Yet in *Volume 1* of the *Flora of Lichenicolous Fungi*, Paul Diederich and his team have pulled together all that is known about the group. They've given a key to the whole group, keys to each genus and keys by host lichen; they've either built or shown phylogenies; they've described each species in detail and illustrated the descriptions with





both macroscopical and microscopical photos and, where helpful, with line-drawings; and they've mapped each fungus' distribution across the globe.

In *Volume 1* they covered 197 species of basidiomycetes including three new genera, 74 new species, one new subspecies and three new combinations.

Volume 2 of the *Flora of Lichenicolous Fungi* deals with hyphomycetes that grow on lichens in the same way. Here we find descriptions of lichenicolous fungi that produce their spores on exposed conidiophores, whether singly, in synnemata, or in sporodochia. *Volume 2* is rather thick with treatments of a total 296 species and one variety, across 101 genera. Most of these are ascomycetes but a few basidiomycetes fit into this group.

Of the fungi covered, 271 species and one variety are considered obligate lichenicolous fungi, while a further 25 species are either facultatively lichenicolous or may not be feeding on the lichens they have been found with. Within *Volume 2* four new genera, 53 new species, 11 new combinations, two new lectotypifications, and 13 new synonymies are published.

Now enthusiastic hunters of lichenicolous fungi have the literature they need – at least for these two rather less popular sub-groups. The ascomycete specialists who feel most comfortable looking at fungi with a larger number of stable characters within pycnidia, apothecia, perithecia and other sexual fruiting bodies must wait longer.

But… just as the Welsh Microfungi Group has increased the recording of many of the UK's biggest groups of plant pathogens, these volumes will allow people to tackle two sub-groups of lichenicolous fungi that were simply too difficult to start with previously. Instead of worrying about where to find descriptions of basidiomycete or hyphomycete lichenicolous fungi, the main problem now will be all the specimens that don't seem to match to any of the available descriptions – simply because they're new to science and don't have names yet!

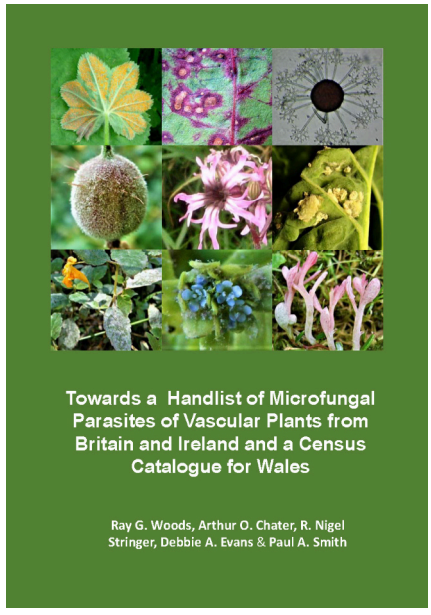
Volumes of the *Flora of Lichenicolous Fungi* are being produced in hardback format but are also being made freely available as pdf downloads. Please visit: https://www.mnhn.lu/science/flora-of-lichenicolous-fungi/?lang=en.

Fay Newbery

Towards a Handlist of Microfungal Parasites of Vascular Plants from Britain and Ireland and a Census Catalogue for Wales

Woods, R.G., Chater, A.O., Stringer, N., Evans, D.E. & Smith, P.A.
Aberystwyth: A.O. Chater, 2024
ISBN 978-0-9565750-6-7
Softback 393 pp.
£12 + £4.00 p&p. Also available online for free download at: https://www.aber.ac.uk/waxcap/links/index.shtml

This is the latest contribution to the ongoing inventory of plant-pathogenic microfungi and fungus-like organisms in Wales. It is a substantial and impressive-looking account, already the sixth title in the series and just ten years since the first, a census catalogue and red list of Welsh rust fungi, was published. This, and the others, which have covered smut fungi, downy mildews and white blister rusts, powdery mildews, and white moulds, have been produced in support of the Global Strategy for Plant Conservation published in 2002, aiming to further knowledge of the range and distribution of British species of fungi as well as other groups of organisms. It recognises the many gaps in knowledge of the distribution and host relations of so many of these, which are important ecologically as well as commercially in agriculture and horticulture. It aims to encourage wider study of these fungi and further recording, available records for most species being at present insufficient to allow meaningful conservation assessments. The present work collates from the five previous publications all the host plants, and their associated pathogens, but also adds a



considerable number of others notably Taphrinales (Ascomycetes), some Basidiomycetes (Exobasidiales, *Herpobasidium* and *Ceratobasidium*) and Chytridiomycetes (Chytridiales – *Cladochytrium* and *Olpidium*, Synchytriales – *Synchytrium*, and also *Physoderma*, sometimes now referred to Physodermatales but here to Blastocladiales). Around 6000 records covering a total of over 1300 species from 2400 host taxa are included, and as a result the book runs to a bulky 393 pages. Unlike the others, which were ring-bound A4 publications, this one is a perfect-bound A5.

The work attempts to provide the most up-to-date listing possible with regard to the names and delimitation of the pathogens involved. Due especially to the influence of DNA sequencing, much has changed in recent years in the taxonomy of the organisms involved, especially with regard to species delimitations and host ranges, and such changes are ongoing. The standard identification texts are now frequently unreliable and records in the available databases require considerable revision in places. To achieve this, some difficult taxonomic decisions have necessarily been made. These particularly affect the rusts, for example those on *Salix* with 14 species of *Melampsora*, including a couple of yet unresolved taxa, now recognised. There are other examples, and the situation is unlikely to yet be stable.

The book includes, as usual, a Preface, Acknowledgements, and Introduction. These give the background to the project, the methodology, current situation, and future aims. Just brief notes on identification of the pathogen groups involved are given, with references to the most useful works recommended to take this further. The many records on which the lists presented have been prepared involve a variety of datasources. These include the usual fungus databases, notably the *Fungal Records Database of Britain and Ireland* (FRDBI), as well as some which include records for horticultural or commercial plants, hybrids and cultivars, though these are comparatively limited. Host cultivars have been included as far as possible as they are considered necessary to achieve a better understanding of host susceptibility. Other sources, such as the database held by the Royal Horticultural Society, might add further information, particularly on plants of horticultural interest.

There is a synopsis given of the parasite groups involved, although Plasmodiophorales, including *Ligniera* and *Plasmodiophora*, are omitted, and explanatory text for the tables and Welsh vice-counties list.

The great bulk of the book comprises two extensive tables or lists – the first by host genus and species, in alphabetical order, with their parasites, covering 183 pages; the second, another 188 pages, comprises the parasites list, also in alphabetical order, and their recorded hosts including, as far as possible, hybrids, cultivars, and horticultural plants. For each of them is given, as far as the records allow, their distribution for each of the 13 Welsh vice-counties, and their recorded wider distribution in England, Scotland, and Ireland. Inevitably, the source for any given record included in these lists is not specified.

The book concludes with a References section and an Appendix. The references, as noted, are general ones to recommended identification guides for the various groups, including to the host plants, and to the main works consulted. The Appendix provides an introduction to each of the six Orders which are here newly dealt with.

Although this work includes around 1300 taxa, such is the huge diversity of fungi that many other pathogenic species are yet to be appraised. It is an ongoing but enormous task although, given the progress to date in just a decade, quite likely to see further progress.

The front cover shows a block of nine coloured images which illustrate examples of the most damaging and economically important fungi and fungus-like groups; four more appear on the back cover. This is a well-produced publication, providing here as comprehensive a reference as is currently possible to the included pathogens and all their recorded host taxa for Britain, not otherwise readily available. The present work will prove valuable to anyone with an interest in plant pathogens, or fungal recording and identification. It is excellent value as hard copy and, as an added bonus once again, is available online for free download.

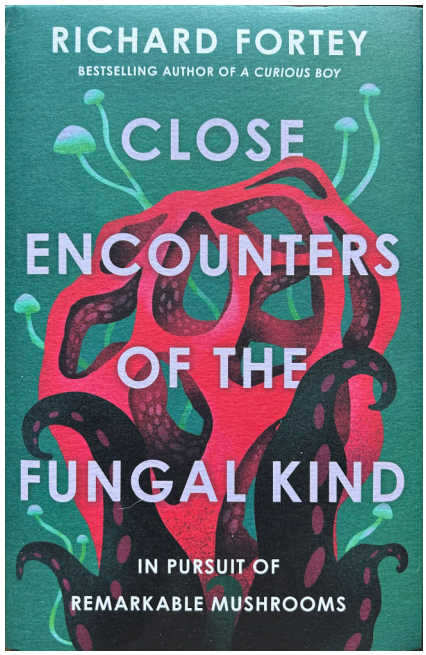
Brian Spooner

Ed. I heard the news while this issue of Field Mycology was being prepared that one of the authors of this publication, R. Nigel Stringer, died at home on 20 December 2024. He had been taking a lively interest in the new arrangements for publication of Field Mycology.

Close Encounters of the Fungal Kind: In Pursuit of Remarkable Mushrooms

Richard Fortey

William Collins
ISBN 978-0-00-863968-6
Hardback 320 pp.
£18.95 from all good book sellers



Richard Fortey has already published nine books. He is best known for several reflecting his distinguished career as a palaeontologist at the London Natural History Museum, crowned with presidency of the Royal Geological Society. But this is the first to centre on another lifelong interest, his passion for fungi.

His book begins in northern Italy with memories of a visit to the small town of Borgo Val di Taro and its annual Porcini festival centred on *Boletus edulis*. From there it takes us on a mycological journey stretching from the temperate climes of England to the subtropical rainforests of South Australia, taking in along the way such highlights as the ugliest, the smelliest, the deadliest and the most luminous of fungi.

Chapters cover a broad range of topics. For instance fungi on dung, fungi parasitic on other fungi, and the fungi of old oak trees each get a chapter. The dung fungi he turned to when COVID precluded wider foraying. A wide variety of species could be coaxed out of any herbivore dung kept in suitable conditions of temperature and moisture (it doesn't stink like carnivore dung).

The fungal parasites tend to be less easily found. He tells of going 55 years without seeing *Volvariella surrecta*, the well known but rare parasite of *Clitocybe nebularis*. Even then it was his wife who found it. Furthermore it was in the middle of a nettle patch practically on their own doorstep.

For the oaks we get an account of the polypore *Buglossoporus quercinus* which curiously only flourishes on oak trees that are a few hundred years old, and thus favours Windsor Great Park and Epping Forest (though also e.g. Richmond Park which doesn't get a mention).

Whilst reading the book, the huge amount of information, delivered with such passion, began to feel as if the author had been holding it all in for some time and had finally given himself the green light to let it all go. This was indeed confirmed at the end of the book where he says that it wouldn't have been written were it not for the encouragement of friends.

The book ends back in Italy, but this time on a British Mycological Society foray based in Cuneo, high in the subalpine eastern flank of the country. It was for Fortey the perfect foray and he labelled it 'Perfetto' in his 2010 diary. Everything seemed to come together: weather, fungi, food and people. This book has much more of all these good things. I highly recommend it to all field mycologists. Perfetto!

Andy Overall

Ed. Richard Fortey died on Friday 7 March 2025 after a short illness, as this issue was in its final stages of preparation. He is pictured here at the end of a successful foray at the Aston Rowant Nature Reserve in Oxfordshire. An obituary will feature in a future issue. Photo © Linda Seward.[1]

[1] An incorrect caption was included in the online version of this article from 24/04/2025 to 11/05/2025 which was corrected before the printed copy went to press.