Field Mycology

Volume 24 (3) August 2023

Published by the British Mycological Society

Field Mycology

Field Mycology is a quarterly magazine, published by the British Mycological Society. It provides articles about fungi of interest to the field mycologist, covering all aspects of identification, conservation, recording and collection, for all levels of expertise.

Views expressed are not necessarily those of the Editorial Panel or the British Mycological Society. The Society is a registered charity.

EDITORIAL PANEL

Editorial Address: Geoffrey Kibby, British Mycological Society, c/o Wolfson Wing of the Jodrell Laboratory, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB.

E-mail: **FieldMycologyJournal@britmycolsoc.info**

INSTRUCTIONS TO AUTHORS

The Editors welcome submissions of material for publication on all aspects of field mycology. Articles should aim to have a wide appeal and be written in a style suitable for the non-specialist. Book reviews and general review articles are also welcome. Editors will correspond directly with authors where revision is needed and a colour PDF will be provided to authors. All correspondence and material for publication should be addressed to the Editor, see above.

Text may be submitted via E-mail or on memory stick and is acceptable in any MS WINDOWS or APPLE MACINTOSH file format. Illustrations should be submitted as high resolution image files (300 ppi) at the approximate size of reproduction via email, memory stick or on CD-ROM in any graphic file format.

ANNUAL SUBSCRIPTION RATES

BMS Members

- If you obtain your copies as an addition to your membership subscription to the BMS the annual subscription is £12.00 including postage.
- Digital copies of the journal are free to BMS members and available from a members-only page on the BMS website (**www.britmycolsoc.org.uk**).

Non-BMS Members

- £55.00 per annum with a choice of either printed copy or PDF.
  Note: it will be more cost effective to become a member of the BMS (£38 including free electronic access, plus £12 for printed copies)

- Individual articles will be available on request at £35.00 per article. Please contact **admin@britmycolsoc.info** for payment details.

- Libraries and Institutions please contact **admin@britmycolsoc.info** for information on subscriptions.

- BMS postal address: c/o Royal Society of Biology, 1 Naoroji Street, London WC1 0GB

ISSN 2213-6843

Field Mycology

Vol. 24(3) August 2023

CONTENTS

Front cover: *Cuphophyllus lacmus,* (grey waxcap) growing on Heather (*Calluna vulgaris*) on Lundy - a rare species. Photograph © Richard Penny.

Back cover: *Hemipholiota populnea,* a rare species recorded on the same logs over many years in Ficklehole on the Kent/Surrey border. See the article on p. 99. Photograph © Bob Harrop.

EDITORIAL

In the previous issue of FM we announced a competition to provide a cover photograph for this issue. The prize was a copy of the new book on edible fungi by Jens Petersen which was reviewed in the last issue. A number of photos were received but it was felt that the winner—Richard Penny's photo of *Cuphophyllus lacmus* which graces the cover of this issue—captured the beauty and uniqueness of fungi the best. Congratulations to Richard, your prize is on its way.

On page 99 of this issue Joyce Pitt presents records of some long-lived fungal species that she has seen at the same sites for over 40 years.

While looking for early fungi in Epping Forest adjacent to Loughton town, as part of our ongoing permitted survey there, Mario Tortelli and I found two specimens of the rather rare *Russula lilacea* (Fig. 1), recognisable macroscopically by its pinkish to lilaceous lavender cap which has a minutely granular texture, and microscopically by the fuchsinophile hyphae in the cap cuticle and spores with isolated warts.

While looking online to see what other photos there were of this species I was surprised to see the plate by M.C. Cooke of that very species, taken from his major 8-volume work *Illustrations of British Fungi* (1881–1891). Even more surprising was the caption to the plate which says "Loughton, Essex, 1881"; see Fig. 2.

So, although we cannot claim as is the case with Joyce's article, that our find was necessarily under the same tree as the one where Cooke found his specimens, at least we know it maintains its presence 142 years later, in the same part of the Forest as where he found it in 1881. We were also surprised and gratified to see that the colours of his painting matched very closely with those of our collection.

We should not be surprised at this longevity perhaps; Epping Forest is one of Britain's ancient woodlands having been continuously wooded since Neolithic times. In recent years however it has been coming under steadily increasing pressure from rising visitor numbers, soil compaction of paths by both walkers and bike riders and more frequent years of rising temperatures and drought. But still, in the more isolated parts of the forest, away from the car parks and footpaths, the woodland can be seen much as it has always been and many rare fungi can still be found there (**note**: picking of fungi is strictly forbidden in Epping Forest without a permit).

Fig. 1. *Russula lilacea* found under *Carpinus* in Epping Forest close to Loughton, July 2023. Photo © Geoffrey Kibby.

Fig. 2. The plate of *R. lilacea* by M.C. Cooke dated 1881 from the same locality as the photo above.

Geoffrey Kibby

Fungal Portrait: 95
Amanita submembranacea

Geoffrey Kibby

Fig. 1. *Amanita submembranacea,* Northaw Great Wood, Hertfordshire, October 2021. Photograph © Geoffrey Kibby.

One of our less common species, *Amanita submembranacea* (Bon) Gröger is generally found in mixed deciduous woods, particularly where *Quercus* and *Fagus* are present (Figs 1 & 2). It may be locally frequent in parts of southern England. The first reported collection of this species in Britain would appear to be from Burnham Beeches, Bucks in 1960 by Derek Reid, as recorded in his paper discussing several interesting *Amanita* finds (Reid, 1987).

It is a member of *Amanita* section *Vaginatae* along with such familiar species as *A. fulva* and *A. crocea*. This section is characterised by the presence of a basal volva but the lack of a partial veil in the form of a ring. Within this section important characters to be observed include the cap colour and the degree of its marginal striation, structure and colour of the volva, including the colour of the internal surfaces and any staining or other colour changes, presence of any banding or surface squamules on the stem, presence of coloured gill margins, shape and size of the spores and the microscopic structure of the volval tissues.

The cap of *A. submembranacea* is distinctly egg-shaped when young and is a distinctive shade of olivaceous bronze to yellowish or olivaceous brown. The cap margin becomes quite strongly sulcate-striate as it matures and there is often a central, greyish patch of veil left at the cap centre. The gills are cream but may become distinctly greyish with age. The stem is pale cream and usually prominently banded with zigzag bands of floccose squamules clearly visible in

Fig. 2. *Amanita submembranacea*, Shere Estate, Surrey, October 2022. Photograph © Geoffrey Kibby.

Fig. 3. *Amanita olivaceogrisea*, Fairlight, East Sussex, August 2019. Photograph © Geoffrey Kibby.

Fig. 2. Along with the curious cap colour the volva is its most distinctive feature. It is rather thick with flared upper edges and although it begins white or cream it soon flushes grey, particularly on the inner surface. Microscopically the volval tissues are predominantly filamentous on the outer surface becoming progressively more swollen to form large sphaerocysts on the inner tissues. Its spores are subglobose to globose and about 9.5–13.0 x 9.0–12.0 µm.

A two-spored form, var. *bispora*, was described by Reid (1987) but has since been raised to species rank as *A. reidiana* by Tulloss *et al.* (2015). It was also known for a time by the unpublished name of *A. castaneogrisea* Contu. Apart from the mostly two-spored basidia it also differs by its darker, more chestnut-brown cap and seems to prefer upland conifer woods. *A. reidiana* has been recorded in Scotland and Shropshire.

Another species sharing similar colours of cap and greying volva is *A. olivaceogrisea* (Fig. 3), first recorded for Britain by Tulloss (2001) based on a collection by Carol Hobart in 1999 from Cumbria. It differs from *A. submembranacea* by its much smaller, more gracile stature and its preference for wet, shady woodlands, often near *Corylus*. Its spores are subglobose, (8.5-) 9.0–13.0(-16.6) x 8.5–12.0(-15.0) µm. Its most distinctive microscopic character is the narrow gill trama, which is limited to shallow subhymenia separated only by the central stratum without the notably divergent intermediate zones that are usually considered typical of *Amanita* gill tissue.

References

Reid, D. (1987). New or interesting records of British Hymenomycetes VII. *Notes RBG Edinb.* 44(3): 503–540.

Tullos, R.E. (2001). *Amanita olivaceogrisea* - a little-known species found in Britain. *Field Mycol.* 2(3): 99–100.

Tulloss, R.E. *et al.* (2015). Nomenclatural changes in *Amanita*. II. http://www.amanitaceaethejournal.org/content/uploaded/journal/2015/Amanitaceae.2015.1.2.pdf

A study of *Agaricus* in Pembrokeshire reveals three new taxa for the UK

David Harries*

Introduction

The autumn of 2022 proved to be disappointing for recording species from the waxcap-grassland assemblage – at least in west Wales – perhaps influenced by a combination of an extended dry summer and the early onset of winter.

In contrast, *Agaricus* fruitbodies appeared in good numbers and warranted careful inspection. This article documents the taxonomic results obtained from 23 collections from sites across Pembrokeshire during late summer and autumn of 2022.

The outcome was that three collections proved to be new taxa for the British list: two represented recently described species from Europe (*A. gemlii*, *A. moelleroides*) whilst the third was a white subspecies of *A. porphyrocephalus*, described from the USA but also known in Europe. See Parra Sanchez (2013) for the type descriptions of the first two of these and further notes on the third.

Methods

Collections of fruitbodies were made during recording visits to waxcap-grassland sites in Pembrokeshire from mid September through to the first week of December 2022 (Figure 1). Most sites were amenity grassland (cemeteries), unimproved pasture (farmland) or coastal grassland. Particular attention was paid to ensure that only material in good condition was collected, and care taken to avoid collecting too many examples of the same species. In hindsight I may have been over cautious as, for example, the single collection thought to be of *Agaricus campestris* proved to be a different species.

Each collection was documented, photographed and a spore print obtained from fresh material. Notes were made of any colour changes on freshly cut surfaces and after treatment with potassium hydroxide (10%). Vouchers were dried at 40ºC and stored with silica gel for later investigation. Collections were evaluated using macro and micro characters following the keys in Kibby (2013).

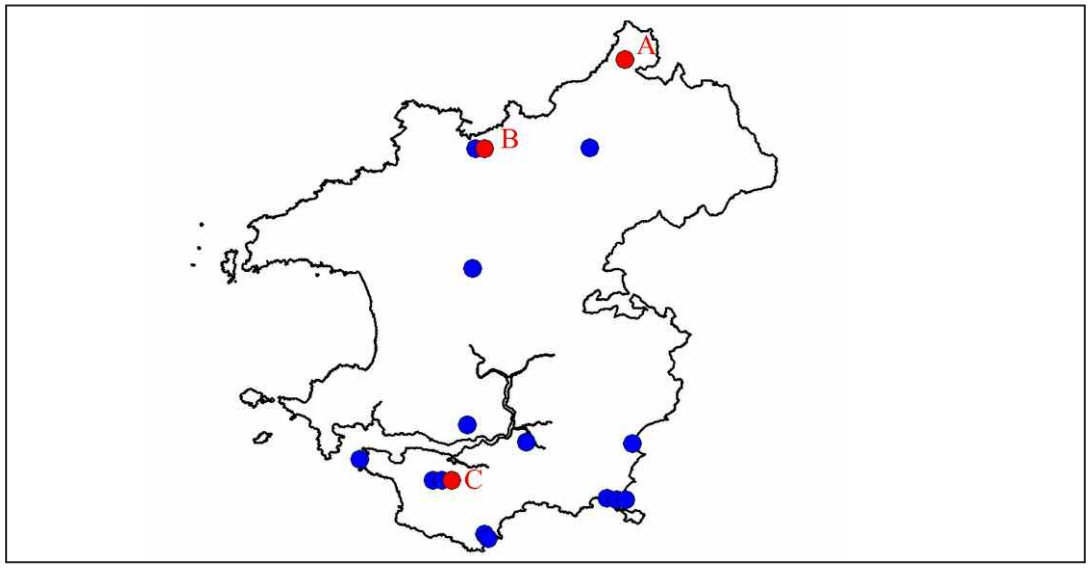

Fig. 1. Distribution of collections in Pembrokeshire. The red circles indicate locations for the three new taxa noted in this article.
A: *Agaricus gemlii*,
B: *Agaricus moelleroides*,
C: Agaricus *porphyrocephalus* subsp. *pallidus*.

Voucher	Habitat	Agaricus species
22-10	Semi-improved grassland	depauperatus
22-11	Semi-improved grassland	crocodilensis (urinascens)
22-12	Semi-improved grassland	porphyrocephalus subsp. pallidus
22-19	Semi-improved grassland	impudicus
22-20	Semi-improved grassland	langei
22-21	Upland semi-improved grassland	porphyrocephalus
22-24	Coastal scrub	moelleri
22-25	Semi-improved grassland	litoralis
22-29	Semi-improved grassland	crocodilensis (urinascens)
22-33	Vegetation heap (cemetery)	moelleroides
22-34	Amenity grassland (cemetery)	porphyrocephalus
22-40	Woodland/hedgebank	moelleri
22-52	Lawn	impudicus
22-57	Woodland/hedgebank	phaeolepidotus
22-68	Amenity grassland (cemetery)	augustus
22-76	Amenity grassland (cemetery)	gemlii
22-81	Coastal semi-improved grassland	arvensis
22-109	Coastal semi-improved grassland	arvensis
22-110	Coastal semi-improved grassland	bisporus
22-111	Coastal semi-improved grassland	bisporus
22-122	Horse dung	arvensis
22-125	Amenity grassland (cemetery)	sylvaticus
22-128	Parkland	augustus

Fig. 2: Collections summary.

It became apparent that one of the samples did not fit the description of any currently recorded UK species so a programme of DNA barcoding was initiated to provide additional information on the collections (see inset box on page 82 for detailed sequencing methods and sequence similarity percentages for the three new taxa).

Results

The results demonstrated that the Kibby (2013) keys worked well with most collections keying out correctly apart from a mis-identification of one specimen of *A. moelleri* which I had recorded as *A. xanthodermus*. The 23 collections yielded 15 different taxa as listed in Figure 2. Three collections were of particular interest and are described here.

Agaricus gemlii L.A. Parra, Arrillaga, Ribes & Callac
(Fig. 3)
Collected: 05.11.22
Moylegrove, Pembrokeshire
Unfertilised amenity grassland (cemetery) approximately one mile from the coast.
GenBank: OQ946539
Cap to 70 mm across. Plano-convex, warm pale brown, squamulose.
Stipe 70 mm x 8 mm, parallel-sided with swollen club base, pale ochraceous-white, smooth.
Ring fragile, descending.
Gills pale grey/brown.
Flesh (cut surface): negligible colour change.
KOH - positive.
Spores av. 5.9 x 3.9 µm.

Fig. 3. *Agaricus gemlii*. Photograph © David Harries.

Fig. 4. *Agaricus moelleroides*. Photograph © David Harries.

This species was described in 2013 based on collections from Spain (holotype) and France, with a later additional record from China. The European collections were noted from coastal regions which is consistent with the location of the Pembrokeshire collection.

Agaricus moelleroides Guinb. & L.A. Parra
(Fig. 4)
Collected 16.10.22
Fishguard, Pembrokeshire
Grass clippings/rotting vegetation heap at the edge of a cemetery
GenBank: OQ875812
Cap to 50-80 mm across. Grey-brown mottled/finely squamulose.
Stipe 50-80 mm, parallel-sided, white.
Ring robust, partial cogwheel, descending.
Gills distinctly bright pink when fresh, darkening with age.
Flesh (cut surface): trace yellow, soon fading.
KOH - positive.
Spores av. 5.1 x 3.4 µm.

This species was described in 2013 from Portugal (holotype) and Spain. Parra Sanchez (2013) notes that *A. moelleroides* and *A. moelleri* cannot be separated on morphological characters. It follows (Kibby pers. comm.) that some of our *A. moelleri* records may actually be *A. moelleroides*. This suggests that bar-coded collections should be studied carefully in case there are in fact small, currently unrecognised, morphological or habitat differences that can be used to separate these species.

Agaricus porphyrocephalus subsp. ***pallidus*** (Kerrigan) Kerrigan
(Fig. 5)
Collected 21.09.22
Hundleton, Pembrokeshire
Semi-improved grassland.
GenBank: OQ389598
Cap to 80 mm across, convex, flattening with age, white, smooth to finely squamulose surface.
Stipe to 50 mm, robust, clavate, finely fibrous below the ring, white.
Ring fragile becoming indistinct with age.
Gills pink when fresh, darkening with age.
Flesh (cut surface): negligible colour change.
KOH - negative.
Spores av. 6.8 x 4.5 µm.

This collection was a close match to the descriptions and ITS barcodes for white forms of *A. porphyrocephalus*.

Sequences downloaded from GenBank form a cluster containing *A. porphyrocephalus* subsp.

Fig. 5. *Agaricus porphyrocephalus* subsp. *pallidus*. Photograph © David Harries.

alpinus (described from alpine regions in Italy) and *A. porphyrocephalus* subsp. *pallidus* (USA) with that from the Pembrokeshire collection closely matching the sequence from type material of the latter (Figure 6). Variations in the ITS sequences were consistent with those given in Parra *et al.* (2019) for the three *A. porphyrocephalus* subspecies.

A. porphyrocephalus forms a sister clade to *A. campestris* with typical collections having a distinctive cap covering of purplish brown fibrils forming flattened scales. Superficially, the white collections resemble *A. campestris* though the spore size for the latter species is greater. The ranges reported in Kibby (2013), *A. porphyrocephalus* 5.5–7.5 x 3.5–5.2 µm and *A. campestris* 6.0–9.5 x 4.5–6.7 µm, provide a useful means for separating such white collections.

Although undoubtedly present at some of the sites visited, the list of species recorded in this study does not include *A. campestris* as the collection retained proved to be the white form of *A. porphyrocephalus*. Perhaps I shouldn't feel too bad about this mis-identification as Michael Kuo, in his extensive and helpful website (www.mushroomexpert.com), comments on *A. porphyrocephalus* subsp. *pallidus* as follows: "*Here's another mushroom you and your field guides have been calling "Agaricus campestris." It's white, squat, and grows in grass—and it features flimsy veils and gills that are pink when young. In short, you won't be able to distinguish it from other members of the campestris group without a microscope.*"

Acknowledgements

Thanks are due to Geoffrey Kibby for advice on *Agaricus* species, Alick Henrici for helpful comments on the draft, members of the Pembrokeshire Fungus Recording Network for their assistance in field excursions, and the BMS for their support for DNA barcoding.

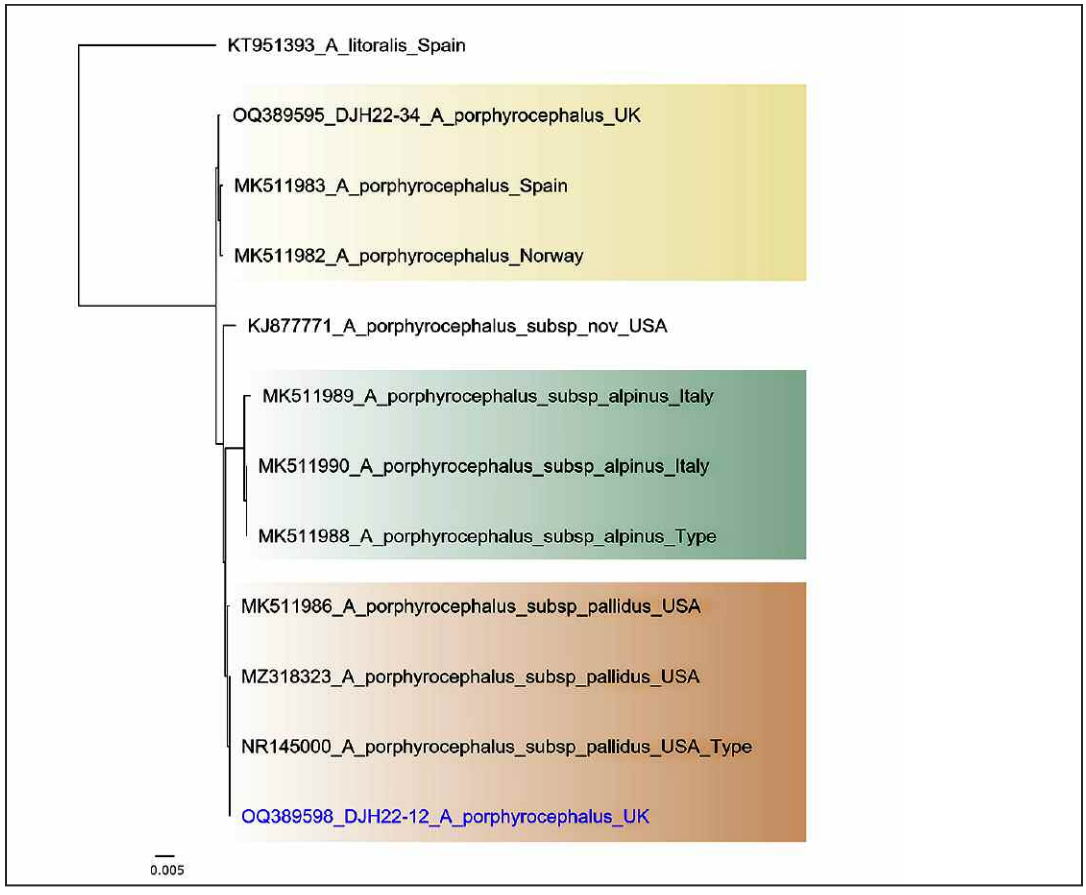

Fig. 6: Phylogenetic tree inferred for the *Agaricus porphyrocephalus* group based on the ITS barcode region.

DNA extraction was performed using an alkaline/PEG200 method (Chomczynski & Rymaszewski 2006) and the molecular marker region (ITS1-5.8S-ITS2) amplified using primers ITS1F and ITS4 (Gardes & Bruns, 1993) using a Bento Lab thermal cycler (Bento Bioworks Ltd, London, UK). The PCR product was visualised and quantified using gel electrophoresis and successful amplicons forwarded to Aberystwyth University for Sanger sequencing at the IBERS Genomics Facility.

Sequences were checked manually and edited to correct base-call errors and ambiguous entries using SnapGene (www.snapgene.com) then compared with reference sequences in Genbank (www.ncbi.nlm.nih.gov/genbank).

Sequence percentage similarity of UK collections compared with GenBank sequences (ITS barcode region)

A. gemlii	99.6% compared with KF447891 Holotype
A. moelleroides	100% compared with OP375146 Holotype
A. porphyrocephalus subsp. ***pallidus.***	100% compared with NR_14500 Holotype

References

Chomczynski, P. & Rymaszewski, M. (2006). Alkaline polyethylene glycol-based method for direct PCR from bacteria, eukaryotic tissue samples, and whole blood. *Biotechniques*, 40(4): 454–458.

Gardes, M., & Bruns, T. D. (1993). ITS primers with enhanced specificity for basidiomycetes – application to the identification of mycorrhizae and rusts. *Molecular Ecology*, 2(2): 113–118.

Kibby, G. (2013). *The genus Agaricus in Britain*. fieldmycol@yahoo.co.uk.

Parra, L. A., Cappelli, A., Kerrigan, R. W. & Bizio, E. (2019). *Agaricus porphyrocephalus* subsp. *alpinus* a new subspecies collected in the Italian Alps. *Micol. Veg. Medit*, 33(2): 67–88.

Parra Sanchez, L.A. (2013). *Agaricus* & *Allopsalliota* (Pt. 2). *Fungi Europaei* 1a.

* djh.somerton@gmail.com

DNA-confirmed records of *Cortinarius epipurrus* and *C. hirtus*

Tony Leech*, Mike Ball, Steve Judd, Gill Judd, Tony Moverley & Yvonne Mynett

I (TL) have long been fascinated and daunted in equal measure by the genus *Cortinarius* but the acquisition of Geoffrey Kibby and Mario Tortelli's new guide to the genus (2021) gave me greater confidence and I looked forward to road-testing it last autumn. The opportunity came with two public forays, and I recorded *C. epipurrus* and *C. decipientoides* with a little more certainty than usual. The latter turned out to be wrong but nevertheless led to an interesting conclusion.

Members of the Norfolk Fungus Study Group have been developing their skills of DNA extraction for barcode sequencing and kindly processed my specimens. Until recently this might have been a pointless exercise but the large-scale study spearheaded by mycologists at Kew has clarified synonyms of *Cortinarius* species through barcoding of type specimens (Liimatainen *et al*., 2020).

Cortinarius epipurrus

A pair of webcaps was collected by Jodie Humphrey from a hedgerow with mature oak trees, although just how close they were to the trees was not noted. **Location**: Little Plumstead, Norfolk (TG312114). **Cap**: convex with flattish tops, 30–50 mm diameter, Cinnamon[1] at centre; Fulvous at fluted margins with sparse white veil. **Gills**: distant, adnexed and Fulvous. **Stipe**: 70 x 7-10 mm; buff, darkening to Hazel towards clavate base; white veil over lower half; ring absent. **KOH**: black. **Spores**: ellipsoid, warted; (7.5) 8–9 x 5–6 µm.

My first tentative identification using Kibby & Tortelli (2021) was of *C. subbalaustinus* although no birch trees, its stated partner, were recalled in the hedgerow. However, the ITS barcode sequence was a 100% match for those of *C. epipurrus* (GenBank # MZ088098.1. Col. Lebanon; and GenBank # MT935030.1. Col. Italy), *C. pallescens* (GenBank # MT935267.1. Holotype. Col. France) and *C. pseudosafranopes* (GenBank # MT935350.1. Holotype. col. France). These have been shown to be synonyms, with *C. epipurrus* the preferred name (Liimatainen *et al*., 2020).

So where had I gone wrong? At *Telamonia* Key F, couplet 19! When fresh, the specimens were quite bright orange-brown but became duller with time although always brighter than the photograph in Kibby & Tortelli (2021). However, logically, the phrase 'or host trees differ' should have kept me on the straight and narrow.

No records for *C. epipurrus* exist on the Fungal Records Database of Britain and Ireland (FRDBI) but Kibby & Tortelli (2021) state that several collections have been made in England.

Cortinarius hirtus

Several fruitbodies of a small brown webcap were collected by Donna Welch in a damp area under mixed *Pinus sylvestris* and *Betula*. **Location**: Briston, Norfolk (TG061307). **Cap**: convex with prominent obtuse umbo, 15-19 mm diameter, Cigar Brown[1] at centre to Snuff Brown at margin; surface fibrillose with cream-coloured veil at margin. **Gills**: More or less distant, adnate with tooth, Snuff Brown (mature). **Stipe**: 45-50 x 3.5mm; red-brown with slightly banded off-white veil over lower part, bruising reddish at base. **Spores**: elongate-ellipsoid, warted, (11) 12–12.5 x 6–7.5 µm.

A provisional identification of *C. decipientoides* (spores 9.0-13 x 6.0-7.0 µm) was chosen over *C. hirtus* (spores 9.0–11.0(-12) x 5.0–6.0 µm) because of the larger spores; both species show reddening of the stipe when bruised. However, the DNA sequence for the ITS barcode region showed a 100% match to that of type specimens of *C. hirtus* (GenBank # MT935140.1. Holotype. Col. Czech Republic), *C. querculus* (GenBank # MT935366.1. Holotype. Col. France GenBank), *C. similigenus* (GenBank # MT935435.1.

1. Colours with uppercase initials refer to the Colour Identification Chart, Flora of British Fungi, (1969).

Holotype. Col. France) and *C. substemmatus* (GenBank #MT935528). These have all been shown to be synonyms, with *C. hirtus* the preferred name (Liimatainen *et al*., 2020). It would therefore appear that the range of spore dimensions is greater than that given by Kibby & Tortelli (2021). This publication states that *C. hirtus* occurs in southern England and in Scotland, and is probably widespread but uncommon, although, again, no records exist on FRDBI (May 2023).

Discussion

We have at least shown that the final statement in the abstract to Liimatainen *et al*., (2020) that "*identification of species based on ITS barcodes becomes an easy task even for non-experts of the genus*" is true.

It is likely that species with many synonyms are intrinsically more variable, *C. epipurrus* has four and *C. hirtus* six (Liimatainen *et al*., 2020). No field guide can be expected to describe all variants but as knowledge improves, the range of variation can be better circumscribed. This may take longer with rare species. A case in point is our finding of *Amanita olivaceogrisea* with brown edges to its gills and rust-spotting on the volva. As these features were not noted by Geoffrey Kibby (2014), he encouraged us to sequence our specimen. The results agreed 100% with eleven sequences of the ITS region for *A. olivaceogrisea*.

Cortinarius epipurrus, Little Plumstead, Norfolk. 9 Oct. 2022. Photograph © Tony Leech.

Methods

DNA extraction was performed using Bento Lab's dipstick DNA extraction kit and methodology.

The internal transcribed spacer (ITS) region was amplified using the primer pair ITS1F and ITS4. Thermocycling was done with a mini16 thermal cycler (miniPCR bio, Boston, USA), using the following protocol: 4 minutes at 94˚C, then 35 cycles: of 94˚C for 30 seconds, 53˚C for 30 seconds, 72˚C for 45 seconds followed by a final extension step for 5 min at 72°C. 7 µl of PCR products were visualised with a blueGel electrophoresis unit on a 1.5% agarose gel stained with Gelgreen DNA stain in TBE buffer.

Sequencing was performed by the Institute of Biological, Environmental & Rural Sciences (IBERS) of the University of Aberystwyth.

Nucleotide traces were checked manually for quality and errors in FinchTV v1.4.0 (Yang *et al*., 2017). *C. epipurrus* was trimmed to a length of 553 bp and *C. hirtus* was trimmed to 536 bp. Approximate taxonomic affiliations were determined using a nucleotide BLAST search in GenBank. Sequences were aligned using the MAFFT v7.490 algorithm within AliView v1.28 (Larsson, 2014) and phylogenies were calculated using the FastTree algorithm and visualised in FigTree.

Acknowledgements

We very gratefully acknowledge the advice and support of Brian Douglas (formerly of the Royal Botanic Gardens, Kew) and of Sam Rowe (Earlham Institute, Norwich) in setting up the fungus DNA sampling facility at the Ted Ellis Trust (Wheatfen, Norfolk). Grant aid for equipment, materials and sequencing was provided by the British Mycological Society and the Darwin Tree of Life project.

*Tonyleech3@gmail.com

Cortinarius hirtus, Briston, Norfolk, 18 Oct. 2022. Photograph © Tony Leech.

References

Kibby, G. (2014). *The genus Amanita in Britain*. Privately published. fieldmycol@yahoo.co.uk

Kibby, G. & Tortelli, M. (2021). *The genus Cortinarius in Britain*. Privately published. fieldmycol@yahoo.co.uk

Larsson, A. (2014). AliView: a fast and lightweight alignment viewer and editor for large data sets. *Bioinformatics* 30(22): 3276–3278.

Liimatainen, K., Niskanen, T., Dima, B., Ammirati, J.F., Kirk, P.M. & Kytövuori, I. (2020). Mission impossible completed: unlocking the nomenclature of the largest and most complicated subgenus of *Cortinarius*, *Telamonia*. *Fungal Diversity* 104:291–331.

Yang, X., Tyler, B. M., & Hong, C. (2017). An expanded phylogeny for the genus *Phytophthora*. *IMA fungus*, 8(2): 355.

Martin Gregory obituary

Frequent forayers will be sad to hear that Martin died at the end of 2022. He was a regular at all kinds of forays for several decades and especially enjoyed our overseas meetings.

He lived near Danbury Common in north Essex and was a volunteer warden on the nature reserve, helping with management and recording. He was also recorder for fungi for the Essex Field Club.

Martin was a keen gardener and looked after the large garden at his home. He would not have called himself an expert but was a very good all-round naturalist. His main interest was in the myxomycetes and made a fair-sized collection, beautifully labelled. As an engineer he was not surprisingly meticulous over detail and produced the neatest and most detailed record sheets at forays. On a walking trip to the Himalayers, in Nepal, he collected bark samples which yielded many rare species of corticolous myxomycetes, expanding our knowledge of their distribution. His British collections are with the Essex Field Club and his overseas material will come to me, and then be deposited in the herbarium of the Royal Botanic Garden, Edinburgh. His enthusiasm and cheerfulness will be greatly missed at forays.

Bruce Ing

Naucoria amarescens - a new record for Hampshire

Graham Mattock*

Situated on the South Downs, Magdalen Hill Down is a short walk from my Winchester home. The site is a Butterfly Reserve owned and managed by the Hampshire and Isle of Wight Branch of the Butterfly Conservation Trust. During the summer the down is alive with butterflies, other insects and ground nesting birds; during the autumn the site is of mycological interest because of the several *Cortinarius* species associated with *Helianthemum* that appear on the south facing slopes and the abundant agarics mycorrhizal with *Betula* in the marginal scrub.

In the early spring of 2023 I was surprised to find clusters of a small-medium sized, umbonate, hygrophanous, ochre-brown agaric with red-brown gills. The light brown stem became increasingly blackish towards the base. Initially, after seeing the olive-brown spore print of weakly verrucose spores measuring 10 x 6 µm, I thought this was a *Cortinarius*. This was ruled out after further investigation revealed cystidia with long slender beaks, suggesting this was probably a *Naucoria*. One tends to forget that not all *Naucoria* species are associated with *Alnus* and *Salix*. Using Moser (1983) my collection keyed out to *Naucoria amarescens* (yes, some of us are still using these old tried and tested keys) which is found especially in the spring at sites of fires. This would fit the habitat on Magdalen Hill Down where a few years ago fires were lit after areas of scrub were cleared. One feature of my collection not mentioned in any texts is the blackening of the whole fruit body on ageing.

Naucoria amarescens is rare in Britain with only 42 entries currently on the FRDBI showing isolated records from various vice counties across Britain. My collection is the first time it has been found in Hampshire.

* 16 Gordon Avenue, Winchester, Hampshire SO23 0QQ

Reference

Moser, M. (1983). *Keys to Agarics and Boleti*. Roger Phillips Publishing.

Fig. 1. *Naucoria amarescens*, Magdalen Hill Down, Hampshire. Photo © Graham Mattock.

Spring fungi 2023

Andy Overall*

March 2023 proved to be the wettest March since 1981 and the third wettest on record going back to 1836. It is no surprise then, that field mycologists were rubbing their hands for what this might bring during the following weeks.

I just happened to have begun two new surveys at Hounslow Heath & Bedfont Lakes Country Park in West London and I was hoping the rains would get me off to a good start and I was not disappointed. The very first visit on April 11th saw a number of surprisingly good records including that of the tiny Eyelash Fungus, *Scutellinia olivascens* var. *minutispora* (Fig. 1).

While following posts on the BMS Facebook page I noticed that there were more and more posts of morels appearing in various locations around the country. Morels and relatives are very much a rarity in the Greater London area, except for maybe *Morchella elata*, which thrives on manured flowerbeds and woodchip mulch, often in very urban situations such as supermarket car parks. Most other morels prefer alkaline soils or at the very least, neutral soils.

Whilst driving around Hounslow Heath with Ranger Andy Peake, getting the lie of the land, we stopped to observe a couple of Muntjac deer that he had spotted, also an elusive creature. It was to my absolute joy then that whilst he was trying to photograph the deer I happened to turn my head and something caught my eye. Two upright, cream-white stems rose up from the mossy ground beneath the hawthorn which dominated both sides of the path we were on. I turned to Andy and said; "I think we might have something even more elusive over here!" And I wasn't wrong; there were four or five fruitbodies of *Verpa conica*, the Thimble Morel (Fig. 2). I couldn't believe my eyes to be honest, as I've only ever seen this species in good numbers and in good condition once before, down on the alkaline soils near Bristol, during a foray with the late, great, field mycologist, Justin Smith. I had also found one rather manky specimen on the Hampstead Heath extension on May 8th, 2012, so this was certainly a very special occasion on Hounslow Heath. During the following days, numerous reports of *Verpa conica* began to flood

Fig. 1. *Scutellinia olivascens* var. *minutispora*. Photograph © Andy Overall.

Fig. 2. *Verpa conica* fruiting in profusion on Hounslow Heath. Photograph © Andy Overall

in from various locations across Britain, including more independent sightings from Hounslow Heath.

During my next visit, Mario Tortelli joined me and he couldn't believe what he was seeing, he himself having only seen this species a couple of times before. The *Verpa conica* had now exploded among the moss and hawthorn and we lost count of how many fruitbodies were present. This was a highly unusual event in Greater London, quite unprecedented.

We also came across two fruitbodies of *Morchella esculenta*, out in the open grassland, not far from two burnt out pine trees. The very wet spring therefore, must have been optimum for these species to fruit, so much so that they appeared in areas where you might not expect to come across them. The last time morels made much of an appearance in London was back in 2004, which I documented in Field Mycology (Overall, 2004) but it was nothing like this.

Now that I had calmed down a little and pulled myself together I was on the look out for *Entoloma clypeatum*, another species found with hawthorn, also with *Prunus* species, during April or May. And it wasn't long before we came across it (Figs 3 & 4). In fact we came across a number of *Entoloma* species, some with *Prunus* others with other members of the *Rosaceae*. Whether they are all *Entoloma clypeatum* remains to be seen; I made collections of them all for DNA sequencing.

One particular *Entoloma* collection on April 17th, from Bedfont Lakes Country Park (Fig. 4), fruiting in soil beneath *Salix* and *Populus*, has produced a sequence close to sequences of *Entoloma aprile*. However, it is clearly not that species, which is known to be a 'strict' *Ulmus* associate. Upon sending the sequence to *Entoloma* expert, Machiel Noordeloos, he replied that the sequence matched a species from the Netherlands within the *E. clypeatum* clade which is yet to be described. It was found with wild rose. There are also collections from Norway and possibly Japan. He further commented that *Ulmus* is never involved, instead *Sorbus* and in one case a collection without any *Rosaceae* present.

A subsequent visit to Hounslow Heath on May 9th revealed the rare coral fungus, *Artomyces*

pyxidatus, Crown-Tipped Coral or Candelabra Coral (Fig. 6). The story of this find is told on p. 105 of this issue in Alick Henrici's column.

*27 Fairlight Gardens, Fairlight, Hastings,TN35 4AY

Reference

Overall, A.. (2004). Morels abound. *Field Mycol.* 5(3): 83–84.

Fig. 3. *Entoloma* cf. *clypeatum* found under *Crataegus* on Hounslow Heath. Photograph © Andy Overall.

Fig. 4. A paler collection of *Entoloma* cf. *clypeatum* found under *Crataegus* on Hounslow Heath. Photograph © Andy Overall.

Fig. 5. An *Entoloma* species yet to be described, collected under *Salix* and *Populus*, © Andy Overall.

Fig. 6. *Artomyces pyxidatus* was found in some numbers on Hounslow Heath. Photograph © Andy Overall.

Ever been had?

Tony Leech*

It is not unusual for a new find on a recording foray to be greeted with, "Do you think it is a fungus?". After several opinions have been voiced, the specimen is either taken or discarded. Sometimes the wrong decision is made.

Case 1.

A few minutes of picture-scanning suggested that the fungus-like structures on the asparagus leaf (Fig. 1) might be an *Acrospermum* sp. (Fig. 2). I should have noticed that the leaf was looking healthy! It was not until cutting into the structure revealed a milky fluid that it became obvious that it was not a fungus at all. Much later I came across an image of the eggs of the Asparagus Beetle, *Crioceris asparagi* and the correct identification was made.

Case 2.

Choke is the name given to a group of *Epichloë* species which girdle the flowering stems of various grasses (Fig. 3). When I came across a similar whitish collar on Sharp Rush, *Juncus acutus* (Fig. 4), I wondered whether there was a related fungus on this host. There is not. When microscopic examination revealed the presence of diatoms rather than spores, I realised that I was looking at flood debris that had accreted round the stem.

Case 3.

When we found a cluster of rather pretty objects on cow dung (Fig. 5), we did at least consider it unlikely that they were fungal. Flowering plant seeds were high on the list of possibilities but dipterist Tony Irwin subsequently identified them as eggs of a dung fly *Scathophaga* sp. Again, we had the wrong kingdom.

I am grateful to the photographers acknowledged in the captions for permission to use their photographs.

*Tonyleech3@gmail.com

Fig. 1. Egg of Asparagus Beetle found at East Tuddenham, Norfolk, June 2013 by Alec Bull. Photo © Tony Leech.

Figure 2. *Acrospermum compressum* on dead stem of Stinging Nettle, *Urtica dioica*, SW Yorkshire. Photo © Paul Cannon, Fungi of Great Britain and Ireland website: https://fungi.myspecies.info.

Figure 3. *Epichloë clarkii* on Yorkshire Fog, *Holcus lanatus.* Photo © Steve Judd.

Figure 4. Flood debris on Sharp Rush, *Juncus acuta*. Cranwich, Norfolk. Photo © Tony Leech.

Figure 5. Eggs of dung fly *Scathophaga* sp., Ringstead, Norfolk. Photo © Mark Joy.

St. George's Mushrooms…and more in Holyrood Park, Scotland

Britt A. Bunyard*

Earlier this year I made my first-ever trip to Great Britain. I was booked by Michael Green of the London Fungus Network to do some presentations about mushrooms and other fungi as part of Earth Day celebrations in the UK, and to promote my new book, *The Lives of Fungi* (for a review see Overall, 2022). What initially was scheduled as a couple of lectures (at Kew Gardens and Cambridge University), snowballed into additional lecture and foray stops in Edinburgh, Scotland—where I was privileged to be in the presence of the great mycologist Roy Watling (Fig. 1; although we have communicated somewhat regularly over the years, this was to be my first opportunity to meet him in person!)

Although the weather was chilly and rainy, a large group of mycophiles gathered in the parking lot of Holyrood Park, Edinburgh in hopes of seeing the first mushrooms of the year (Fig. 2). The calendar on my iPhone noted the auspicious date: April 23…with luck, might we see St. George's Mushrooms (*Calocybe gambosa*)? I'll give you a spoiler by saying that we did indeed find the prized St. George's Mushroom, within minutes of the foray's start. But the real excitement was to come later.

Holyrood Park is a grassy, windswept park, just a few minutes' walk from Holyrood Palace; a few paces further puts you right in the heart of Edinburgh's Royal Mile. The 640-acre park offers many pleasant walking paths—some flat, but many are quite hilly; the topography reflects the volcanic history of the region. The park's highest point is Arthur's Seat, an ancient volcano that sits 251 metres above sea level, giving excellent view of Edinburgh, Leith, and a view across the Firth of Forth to Fife. (This American takes delight in Scottish geographical names!). Arthur's Seat is also the site of a large and well-preserved fort. I had read that this is one of four hill forts dating from around 2,000 years ago. Another point of interest is St. Anthony's Chapel, a 15th century medieval chapel, or at least the ruins of one. Holyrood Park further delights with serene lochs and the beautiful craggy slopes were ablaze with golden gorse during my visit.

But we were here to collect and document fungi. The grassy areas seemed like favourable habitat for St. George's Mushrooms. The scrappy and scrubby areas on the perimeter of the park

Fig. 1. Roy Watling (left) and me (right) at our first meeting after many years correspondence. Photograph © Britt A. Bunyard.

Fig. 2. Our enthusiastic group (I am in the red jacket) assembled in Holyrood Park with Salisbury Crags visible in the distance at right. Photograph © Britt A. Bunyard.

looked favourable as morel habitat to me. My announcement of this drew perplexed looks and even jeers from most. "You won't likely see any morels in this park" I was told by many of the forayers present. (Some, authoritatively, stated flatly there aren't any morels to be found anywhere in Scotland!).

About this time I began to hear murmurings (or was it only my imagination?) about the mycological knowledge—and sanity—of the visiting American mycologist, I began to find pieces of morel mushrooms among the organic debris, bits of urban flotsam, and invasive weedy plants along the path. These were obviously pieces of morel mushrooms, likely smashed and scattered about by the many dogs that visit the park, or even unwitting dog walkers. I presented the findings to forayers who remained sceptical: "Were they even fungal, much less morels?" On and off, saprobic mushrooms began to turn up on logs and other rotting woody debris. Then the St. George's Mushrooms began to show, lifting the level of enthusiasm. Then howls of delight—someone had located a morel! It was tiny…but it was a bonafide morel. With the chilly temperatures, wind, and drizzle, many of the faithful lost faith and our ranks began to diminish in numbers.

Nearing midday, it was decided to cross a large grassy sward to break for lunch along the loch in the distance. Lunchtime conversation continued and I grew restless—I was certain there must be more morels about somewhere. (I'm from the Midwest in the USA where we are born with a sixth sense about morels.) A short stroll to a copse of trees and there they were: the biggest and most pristine morels to ever grace Holyrood Park. Or so I was told. This particular species was the Half-free Morel, *Morchella semilibera* (Figs. 3 & 4). Where I'm from, Half-frees (they have other common names that are not fit to print in a family publication such as this) are not much prized, as morels go (Bunyard, 2013). I'm not sure why, but I guess it's due to their disproportionately large stalk vs. tiny cap size. But you could not dampen the spirits of that group on that day in that park in Edinburgh. My newfound British friends were over the moon !

Everyone marvelled at the morels. This is only natural. But to me, the real excitement was finding St. George's Mushrooms on St. George's Day. This was a first for me. About St. George's Mushroom: *Calocybe gambosa* (= *Tricholoma gambosa* and *T. georgii*) gets its name from the fact that it fruits reliably on or around the Feast of St. George, April 23. With global climate change causing plants to bloom earlier and mushrooms to fruit earlier, will it soon fruit well before this date and cause future generations to wonder why it was given the name at all? Only time will tell.

Fig. 3. The excited and somewhat disbelieving group admire the morel. Photograph © Britt A. Bunyard.

Fig. 4. *Morchella semilibera*, the Half-free Morel. Photograph © Britt A. Bunyard.

As best as anyone can tell, we do not have this mushroom in North America. Nevertheless, due to its tremendous popularity in Europe, many of us in the New World have heard of this popular edible. The mushroom fruits in grassy areas and parks, where it sometimes forms large, highly visible fairy rings.

St. George is celebrated as the vanquisher of scourges and slayer of dragons. But who was he? For my recent book on all manner of fungi (Bunyard, 2022), I had to do some digging, so to speak. Historians believe there was a figure called George, who was a prominent Christian in the reign of the pagan Roman Emperor, Diocletian. One version of his life records that he was an officer who refused to denounce Christianity (the emperor was an atheist), instead publicly proclaiming himself a Christian …for which he was swiftly tortured and beheaded in 303 AD. Many images of the martyr St. George depict him slaying a dragon; presumably he slayed the last one as they've not been seen since. Or, more likely, the dragon image is meant to depict evil or atheism. Either way, if you're in Holyrood Park next spring be on the lookout for this mushroom. And for morels—we have photos as proof!

Acknowledgments

I am so grateful to everyone who made my stay in Great Britain wonderful. Special thanks go to Michael Green and the London Fungus Network. Thanks also to mycophiles in Edinburgh, and in particular to Cameron Diekonigin for hosting me and educating me on all things about that great city. Thanks also to everyone at Cambridge University and at the Royal Botanic Gardens, Kew.

*P.O. Box 98, Batavia, Illinois 60510, USA; fungimag@gmail.com

References

Bunyard, B.A. (2013). Half-frees and wannabees: Springtime edible mushrooms… and more. *FUNGI* 6(1): 40–45.

Bunyard, B.A. (2022). *The Lives of Fungi: A Natural History of our Planet's Decomposers*. Princeton University Press.

Overall, A. (2022). Book reviews. *Field Mycology* 23(2): 71–72.

Some results from an eDNA survey of grassland fungi in Monmouthshire

Jon Dunkelman*

This article summarises the surprising results from a study of soil samples in Monmouthshire sites in Spring 2022 that was investigating the presence in the soil of grassland fungal DNA (see: https://www.gwentwildlife.org/blog/andy-karran/environmental-dna-results).

The Site

I live on The Narth, in the Wye valley south of Monmouth. The house is surrounded by eight acres of sloping land, over half of which is unimproved grassland managed as meadows with aftermath grazing. In 2011 when we moved here I found that the fields were a rich source of grassland fungi and over the years I have recorded 54 CHEGD species here. The photos here are of species that were found through DNA in the survey, which I have also recorded on site (Figs 1–3)

CHEGD fungi

For those unfamiliar with the CHEGD measure, it is a count of species that are either:
C (Clavarioid), H (*Hygrocybe*), E (*Entoloma*), G (*Geoglossum*) or D (*Dermoloma*), and the overall score is a measure of the importance of the site for grassland fungi. The original definitions have expanded and changed somewhat so that H now includes all of the Waxcap genera such as *Cuphophyllus*, *Porpolomopsis*, *Gliophorus*, etc. Similarly, D includes Fanvaults (*Hodophilus*/*Camarophyllopsis*) as well as Crazed Caps (*Dermoloma*) and the C and G also now include more than one genus.

The Process

I was approached by Andy Karran of Gwent Wildlife Trust in early 2022 as they had obtained funding from the Welsh Government Rural Development Programme to undertake some eDNA testing. The 'e' stands for Environmental meaning that the genetic material is obtained from samples of soil, water, air or other environmental sources. The use of eDNA surveys in regard to fungi is seen as useful to help identify valuable sites that might otherwise be overlooked because of the ephemeral nature of fungus fruiting and the difficulties of identification. Thirty grassland sites in Monmouthshire were selected for the fungal element of the testing, which included my fields.

The method was to take soil samples using a small corer from an area 30 m by 30 m, to a depth of about 10 cm. The samples from one site were combined and sent to Aberystwyth University where there is the expertise and technology to extract DNA and identify the species present.

Fig. 1. *Cuphophyllus flavipes*, one of the uncommon species already known from the site. before the survey. Photograph © Jon Dunkelman.

The Results

The results were amazing. The headline for me was a further 20 CHEGD species present here which I had not recorded. What is more, this is from just

two 30 m by 15 m areas, 900 sq metres in total, from meadows totalling about 2¼ hectares (about 5½ acres).

From a personal point of view I am pleased that no waxcaps were detected that I had not yet recorded! My daily checks of the fields ensure that none of these generally colourful fungi are missed. For the other CHEGD species it is a different story.

The most surprising results were the clavarioids. The eDNA results revealed 13 species. I had previously recorded eight here, but only four species appeared on both lists. That takes the number of clavaroid species here to 17. Some are species I had not heard of, such as *Ramariopsis avellaneo-inversa* which apparently has only been recorded as a fruiting body in New Zealand and Italy. It is entirely possible that the difficulty of identifying clavarioids accounts for some of the unrecorded species. For example, I might have overlooked *Clavaria falcata* by assuming that it was another clump of *C. fragilis*. However looking at the overall results across Monmouthshire I see (for example) that DNA from *R. avellaneo-inversa* was found at 29 out of the 30 sites tested.

Similarly for the G part of CHEGD. I recorded my first Earthtongue here, *Trichoglossum hirsutum*, only last year, during the Gwent Fungus Group foray in November. The eDNA survey yielded 5 more Earthtongue species!

Lastly Pinkgills, which sometimes stump me but I have, over the years and with a lot of help, recorded 15 species here. DNA of five Pinkgill species was found in the sample, three of which I had not recorded - although I have seen one subsequently. The three I had not found were *E. ameides*, which is described as rare by Læssøe and Petersen; *E. henrici*, named to commemorate Henri Romagnesi and described as being "known from only a few localities in Switzerland, UK and Eire" by Noordeloos (1992) and *E. asprellum*, which is the species I have since found.

My Conclusions

Assuming that the presence of genetic material found by the processing is a firm indication of a living mycelium, then there are just three possibilities as to why I do not see some fungi despite searching for species most days in the season:

Either they don't fruit, or they are not seen when they fruit, or they have not been identified when they have been seen.

I have certainly failed to confirm some Pinkgill identifications and I suspect I have made assumptions about some Clavaroid specimens. Therefore some fruiting bodies have been seen but not identified, or perhaps misidentified.

Specimens not being seen must also occur but it is puzzling that five species of Earthtongue have avoided my gaze for the ten years I have been here. It is however true that the only Earthtongue found here was not found by me, so I guess these tiny fruiting bodies could be missed.

Fig. 2. *Hygrocybe intermedia* showing its dry, rather fibrillose-hairy cap and stem. Photograph © Jon Dunkelman.

The fruiting aspect is something I know little about. I have noticed that some fungi don't fruit here in some years, so fruiting is not necessarily an annual event and I understand that some fungi may not fruit for decades. This seems to me to be the most likely explanation for the number of CHEGD species recorded here by eDNA but not seen by me to date. This is supported by the results elsewhere.

The Wider Monmouthshire Results

Looking at the results from the full survey, it is astonishing to find that eDNA of some rare

species was also found in many other survey sites in Monmouthshire. Most of the sites were chosen because they were expected to be of particular interest as far as CHEGD species are concerned, so we would expect that a number of them would produce some interesting and uncommon species, but the results are surprising to me. The table below (Table 1) shows the results for some of the lesser known and lesser recorded species found, with the last column indicating in how many of the thirty eDNA test sites each was detected. The only one of these species that I have recorded anywhere is *Clavaria flavipes*!

With thanks to Andy Karren and Gwent Wildlife Trust for conducting the survey and Aberystwyth University for processing the DNA.

* jon.dunkelman@btinternet.com

Reference

Noordeloos, M.E. (1992). *Entoloma* s.l. *Fungi Europaei* Vol. 5.. M. Candusso, Italy.

Fig. 3. *Clavulinopsis corniculata* showing its distinctive forked stems. Photograph © Jon Dunkelman.

Scientific name	English name	Sites out of 30
Clavaria flavipes	Straw Club	29
Ramariopsis avellaneo-inversa		29
Camarophyllopsis atrovelutina	Dark Velvet Fanvault	24
Camarophyllopsis schulzeri	Matt Fanvault	17
Ramariopsis crocea	Orange Coral	23
Dermoloma magicum	Black Magic	16
Hemileucoglossum aff. *alveolatum*		25
Trichoglossum walteri	Short-spored Earthtongue	21
Glutinoglossum pseudoglutinosum		21

Table 1. Some of the lesser known species recorded during the eDNA survey.

Some long-lived fungi in Kent

Joyce Pitt*

I have been looking at fungi in Kent for 40 plus years and have been involved in data collection and recording of fungi in the county. Over this time a vast database of observations, covering habitat, site detail and date has been accumulated. As many sites were constantly revisited over the years, it is now possible to look back at the records and make some observations regarding host fidelity and fruiting constancy of certain rare or interesting species appearing repeatedly over decades.

Below I have listed some of the more interesting species which have been recorded repeatedly over the years from more or less the same host tree or close group of trees. This strongly suggests that in each case there has been a single mycelium that has stayed alive over all these years.

Mycorrhizal fungi are long lived organisms to be measured on a different time scale to that of a human lifetime but from detailed records collected over the years we can glimpse some of this longevity. Two interesting bracket fungi and their individual host trees have also been listed below. All have fruited fairly regularly at their site for at least 20 years, most nearer 40 years.

Species list with site, habitat and date first recorded

1. ***Rubroboletus satanas***, Meenfield Wood, Shoreham, with mature beech, *Fagus sylvatica* on thin chalk soil 1985.
   Remarks
   Seen regularly since 1985, in the same place under a mature beech. Latest record 2022.

2. ***Russula viscida***, Meenfield Wood, Shoreham. Habitat: slightly acid, heavy, clay soil with mature larch, *Larix* and pine *Pinus*, 1984.
   Remarks
   Recorded in 1984 as the second record for the British Isles, (first record at nearby Lullingstone Park) and occasionally since that date. Latest record 2022.

3. ***Amanita ceciliae***, Downe, in lawn of Darwin's garden at Down House, with a mature hornbeam, *Carpinus betulus*, on slightly acid clay soil, 1989.
   Remarks
   Recorded from 1989 onwards, latest record 2022. The fruitbodies occurred further from the trunk over the years.

4. ***Sarcosphaera crassa***, Meenfield Wood, Shoreham, first recorded under a mature beech, *Fagus sylvatica* on thin chalk soils in 1987 (Fig. 2).
   Remarks
   Recorded occasionally under the same tree from 1987 onwards. Last recorded in April 2023 when a large no. of fruitbodies were observed. This fungus, which has semi-subterranean apothecia, is thought to be perhaps mycorrhizal as it is faithful to trees with known mycorrhizal affiliations.

5. ***Hemipholiota populnea***, Ficklehole on Surrey/Kent border fruiting on a row of damaged mature poplars, *Populus* sp. 1987.
   Remarks
   Recorded post the 1987 Great Storm and occasionally since that date on the same row of trees, last recorded in 2022 and 2023 (see back cover).

6. ***Pholiota jahnii***, Saxtens Wood, Fawkham Green, at the base of a damaged mature beech, *Fagus sylvatica*, 1999 (Fig. 1).
   Remarks
   First recorded in1999 and noted occasionally from that date, Last seen in 2022 when a large colony was observed at some distance from the trunk in a ring around the now dead standing tree.

7. ***Volvariella bombycina***, Knole Park, Sevenoaks on a damaged mature beech, *Fagus sylvaticus* in parkland on dry acid soil 1998.
   Remarks
   Recorded occasionally on the same tree since that date. Latest record 2022. The tree is now reduced to a stump.

8. ***Hygrocybe punicea*** near a mature Scots Pine, *Pinus sylvestris* on the lawn in the garden at Down House, Downe, on unimproved acid soil, 1989.
Remarks
Recorded regularly from 1989 onwards. The fruitbodies have occurred further from the trunk over the years . In 2022 there were fruit bodies 60 feet from the trunk. It has not been recorded anywhere else in the garden.

9. ***Cortinarius saturninus*** with goat willow, *Salix caprea* in a flower bed near the porch of St Lawrence's church, Chelsfield, 1998. A large number of fruit bodies occur every year.
Remarks
Recorded regularly from 1998 onwards. Latest record 2021. This churchyard is visited annually to check the Wall Bedstraw, *Galium parisiense* population on the churchyard walls.

10. ***Hygrophorus lucorum*** with a mature larch, *Larix decidua* in the parkland area at High Elms Estate, Farnborough, 1976.
Remarks
Recorded annually. The fruitbodies now occur much further from the trunk. Latest record 2022.

Bracket Fungi

1. ***Ganoderma pfeifferi***, on a damaged mature beech, *Fagus sylvatica*. recorded in 1989 along the Sandwalk in the garden, Down House, Downe.
Remarks
Recorded regularly, at the base of the trunk. Latest record in 2022.

2. ***Pseudoinonotus dryadeus*** on a veteran hedgerow oak tree, *Quercus* sp. near Crockenhill, on heavy clay soil, 1987.
Remarks
Recorded regularly every year at the base of the living tree. Latest record 2022.

* joycepittflora1@gmail.com

Fig. 1. *Pholiota jahnii* in Saxtens Wood, Fawkham Green. Photograph © Sue Cambray.

Fig. 1. *Sarcosphaera crassa* under a beech tree in Meenfield Wood, Shoreham, Kent. Known yunder this tree since 1987. Photograph © Mario Tortelli.

Plectronidium magnoliae on leaves of *Magnolia grandiflora*, a conidial fungus new to Britain

Brian Spooner*

Magnolia grandiflora, commonly known as Southern Magnolia or Bull Bay, is an evergreen tree to c. 90ft high, native to subtropical coastal areas of SE USA. It was first grown in Britain in 1734 and is now frequent especially in warmer areas, grown as an ornamental for its large, showy, whitish, slightly lemon-scented flowers which appear in summer. The leaves are large, to c. 20 x 12 cm, tough, leathery, glossy dark green above and, at least when young, covered beneath with a fine, rusty-brown tomentum.

As with other species of *Magnolia*, leaves and leaf litter of *M. grandiflora* are scarcely known as productive substrates for microfungi, at least in Britain. Excluding, perhaps, a few plurivorous leaf-litter generalists, hitherto just four species have been reported from *Magnolia* leaf litter in Britain, most of them recorded only from *M. grandiflora*. All are known from just a few collections, summarised below, and are evidently rare. One other, *Phyllosticta magnoliae*, forms leaf spots on living leaves but is uncommon. A powdery mildew, *Erysiphe magnifica*, a recent introduction first recorded in Britain in 2007, is known from leaves of *M. quinquepeta* and *M.* x *soulangena*, but not from *M. grandiflora*. Notable then are collections of fallen leaves of *M. grandiflora*, recently collected in Surrey, which bear a further and rather conspicuous microfungus. This proves referable to *Plectronidium magnoliae* which his evidently not been previously reported from Britain.

Plectronidium Nag Raj, *Can. J. Bot*. 55: 625, 1977

Type: *P. sinense* Nag Raj, *Can. J. Bot*. 55: 627, 1977 (China, on fallen leaves of *Bambusa*)

= *Spogotteria* Dyko, B. Sutton & Roquebert, *Mycologia* 71: 924, 1979.

Plectronidium magnoliae (Rav. ex Sacc.) B. Sutton & Pascoe 1986

Stegia magnoliae Ravenel, nomen nudum, *Fungi Americanae* no. 320 (1879)

Eustegia magnoliae Ravenel, nomen nudum, *Fungi Americanae* no. 320 (1879)

Protostegia magnoliae Ravenel, nomen nudum, *Fungi Americanae* no. 696 (1881)

Protostegia magnoliae Ravenel ex Sacc., Syll. Fung. 3: 619 (1884)

Spogotteria magnoliae (Ravenel ex Sacc.) Dyko *et al*., *Mycologia* 71: 926 (1979)

Conidiomata 0.2–0.3 mm diam., amphigenous, mostly hypophyllous, densely gregarious on fallen leaves, acervular, discoid, subepidermal, with circumscissile dehiscence, exposed by shedding a 'lid' of host epidermis. **Basal stroma** dark, of *textura angularis*, comprising cells 4–7 µm diam. **Setae** marginal, dark brown walled, 1–3-septate, smooth, obtuse, 60–120 (-150) x 2.5–3 (–3.5) µm. **Paraphyses** in a zone immediately internal to setae, branched at base, hyaline, 120 –200 x 2.5–4 µm at base, tapered to c. 1–1.5 µm at apex. **Conidia** holoblastic, hyaline, filiform, curved, non-septate, truncate at base, gradually tapered to an acute tip, 35–60 x 1.5–2 µm.

Specimens examined (all on fallen leaves of *Magnolia grandiflora)*: Surrey, West Molesey, Molesey Cemetery, TQ131686, 30 April 2023, B. Spooner, K-M001436384; Thorpe, Green Lane, TQ03206982, 16 May 2023, B. Spooner; Cobham, Painshill Park, TQ10116015, 25 June 2023, B. Spooner; Wisley, Royal Horticultural Society grounds, TQ063583, 26 June 20123, F. Newbery.

Plectronidium magnoliae was described from South Carolina on leaves of *Magnolia glauca* and has also been recorded there on *M. grandiflora*. The four collections reported here represent the

first from Britain, and perhaps also from anywhere in Europe. Their general appearance is reminiscent of a *Trochila*, apothecia of which are also subepidermal on fallen leaves, and are similarly covered initially by a 'lid' of host epidermis. These collections all comprise largely effete conidiomata in which the covering 'lid' of host epidermis and the fertile tissue are lost leaving only the black basal stromatic layer. However, some fertile conidiomata with the covering lid intact, though sometimes dislodged, are also present in all four collections and the above description is based on these. Given their mostly effete state in the present collections, it may be that the fungus develops during the late autumn. Perhaps worth noting is that, on some leaves, dark, rotting areas of undetermined cause are present and are almost entirely devoid of conidiomata (Figs 1 & 2), in marked contrast to their densely gregarious development elsewhere.

Plectronidium magnoliae was first collected and distributed by Ravenel in his *Fungi Americanae* exsiccatae in 1879, initially as *Stegia magnoliae*, later as *Eustegia* and then as *Protostegia*, names which, however, lack an accompanying description and are hence invalid. It was subsequently described and validated by Saccardo in 1884 as *Protostegia magnoliae* Rav. ex Sacc. However, the species was excluded from *Protostegia* by Dyko *et al.* (1979) and placed in a new, monotypic genus *Spogotteria*, later placed in synonymy with *Plectronidium* Nag Raj (1977) by Sutton & Pascoe (1986).

Other fungi on *Magnolia* leaves in Britain, all on *M. grandiflora* unless otherwise stated:

On dead leaves:

Camarosporium magnoliae Grove, 1937. Known only from the type collection, on midrib of fallen leaf, Worcs, Hadzor Hall.

Diplodia magnoliae Westend., 1857. On dead twig of *M. grandiflora*, Kew, M.C. Cooke; on dead leaves of *M. grandiflora*, Worcs, Hadzor, 1931; on dead leaves of M. sp., Kew, 1986; on dead leaves of *M. delavayi*, Buckingham Palace, 1998.

Micodiplodia magnoliae Grove, 1937. On dead leaves of *M. grandiflora*, Worcs, Hadzor, 1930; on dead twig of *M. grandiflora*, Hadzor, 1931.

Phomopsis magnoliicola (Syd. & P. Syd.) Died., 1911. On dead leaves & twigs, Kew, 1838; also on dead branches of *M.* x *soulangeana*, Worcs, Hadzor Hall, 1930 & 1931. Evidently a state of *Diaporthe americana* Speg.

On living leaves:

Phyllosticta magnoliae Sacc., 1878. In leaf spots. E. Norfolk, E.A. Ellis, 1937.

Erysiphe magnifica (U. Braun) U. Braun & Takem., 2000. N. Essex, Colchester, on *M. quinquepeta* Kew, 2007; *M.* x *soulangiana* Wisley 2009, & 2 others Wisley 2010.

Acknowledgement

Thanks are due to Geoffrey Kibby for preparation of the accompanying images.

* c/o Jodrell Laboratory, Royal Botanic Gardens, Kew.

References

Dyko, B.J., Sutton, B.C. & Roquebert, M.F. (1979). The Genus *Protostegia*. *Mycologia* 71: 918–934.

Nag Raj, T.R. (1977). Genera *Coelomycetum*. XIII. *Plectronidium* gen. nov. *Canadian Journal of Botany* 55: 625–692.

Sutton, B.C. & Pascoe, J.G. (1986). *Plectronidium australiense* sp. nov. from Victoria, Australia. *Trans. Brit. Mycol. Soc.* 87: 249–253.

Figs 1 – 5. *Plectronidium magnoliae* on fallen leaves of *M. grandiflora*, West Molesey, Molesey Cemetery, 30 April 2023.

Figs 1 & 2. Conidiomata. Fig. 1 Leaf underside. Fig. 2 Leaf upperside. Photos © Brian Spooner.

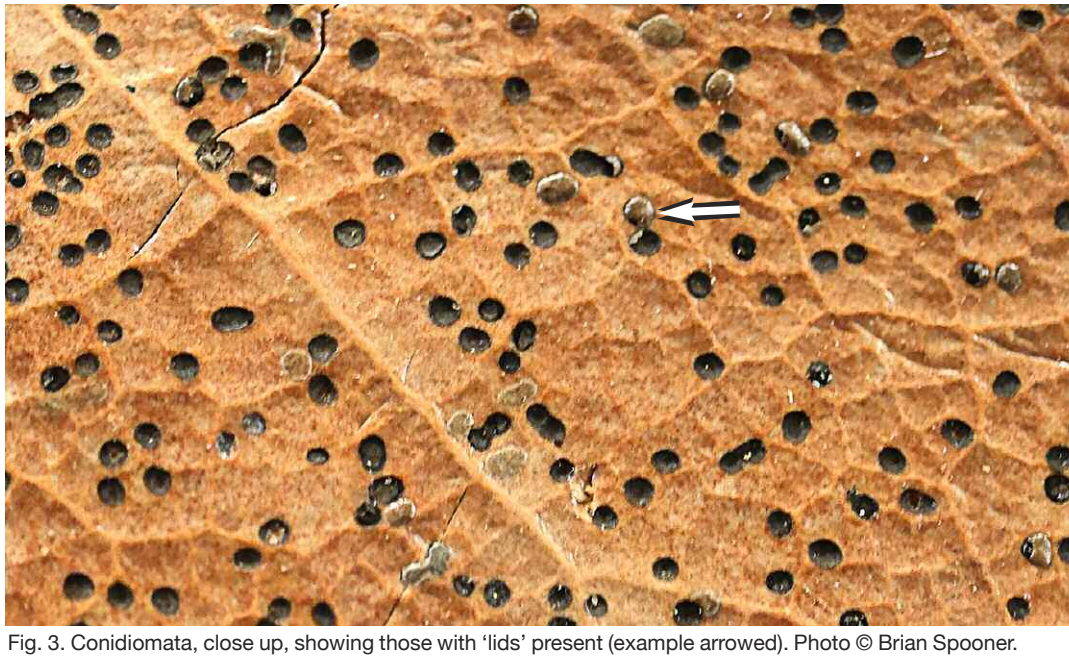

Fig. 3. Conidiomata, close up, showing those with 'lids' present (example arrowed). Photo © Brian Spooner.

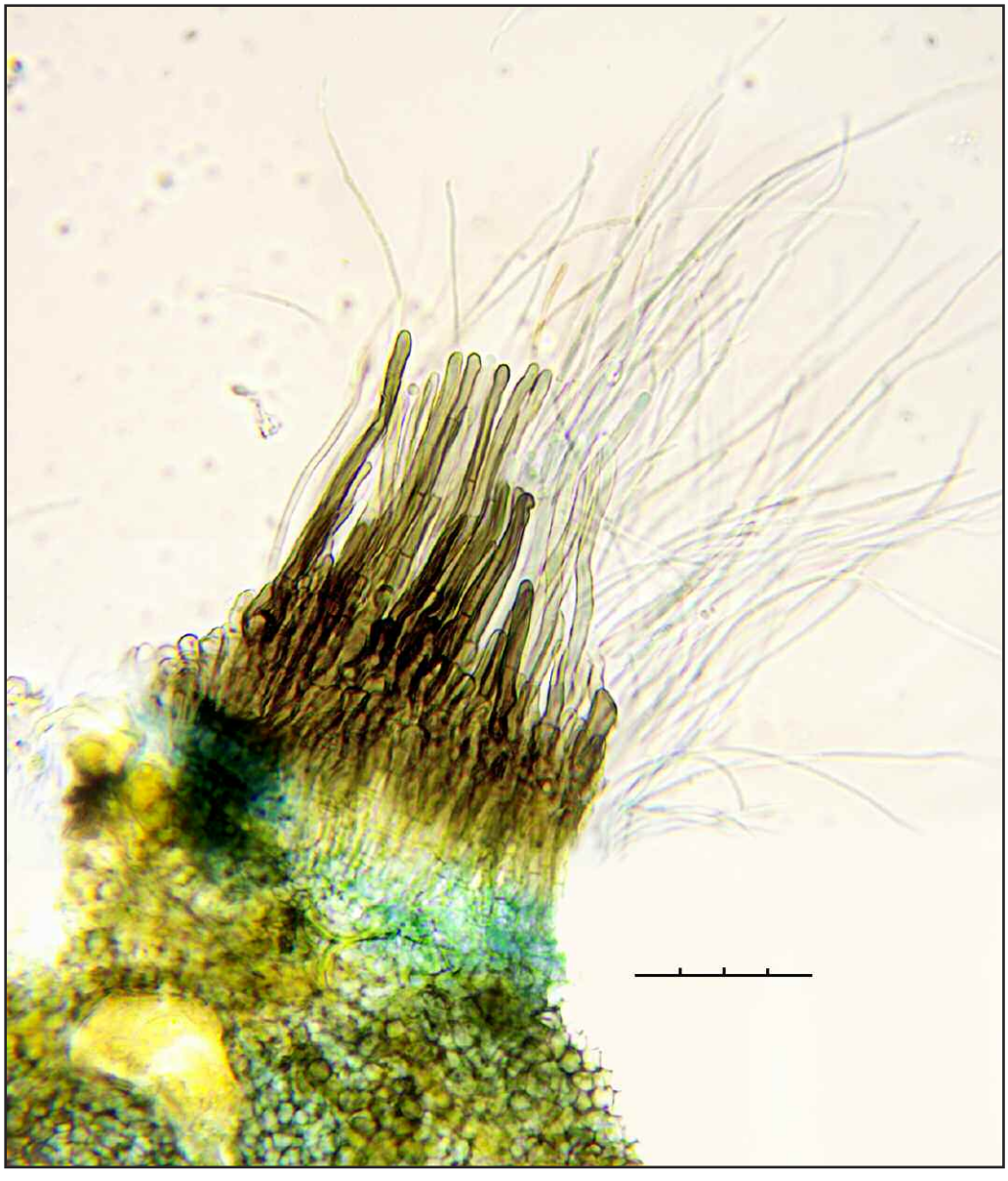

Fig. 4. Setae, paraphyses and basal stromatic tissue, from squash mount. Scale = 40 µm. Photo © Brian Spooner.

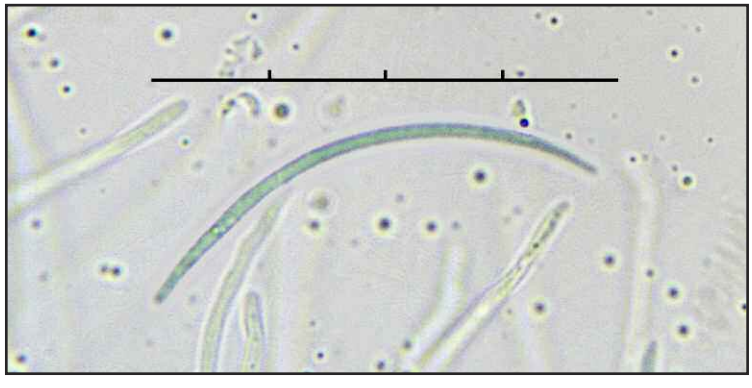

Fig. 5. Conidium. Scale = 40 µm. Photo © Brian Spooner.

Mycena picta, a seldom-recorded species new to Cornwall

Finley N. Hutchinson*

Three specimens of this attractive *Mycena* species were found by chance by the author on a rotting fragment of wood in a small stand of trees at Higher Trewithen, West Cornwall (VC1; SW7337), on 15th May 2023 (Figs 1–4). Unusually for the genus, *M. picta* (Fr.) Harmaja is a highly distinctive species, being the monotype of sect. *Pictae*, and is easily identified by the cylindrical pileus and horizontal, somewhat decurrent, lamellae (Aronsen & Læssøe, 2016).

In Britain and Europe, *Mycena picta* is a very rare species, even being prematurely declared extinct in the UK in Ing's 1992 provisional Red Data List with there having been just two British records in the two centuries up to publication, in 1799–1800 (Perthshire) and 1901 (Yorkshire). It was, however, rediscovered in 1993 and the 2017 Red Data conservation assessment classed the species as Endangered D for which the criteria are 5–24 discrete fruiting patches representing 50–240 (<250) mature individuals. It borders on Critically Endangered, with a maximum of 60 mature individuals recorded in the UK across 6 sites, when the latest assessment was published. This was an upgrade from its Vulnerable / D2 (recorded in 1–5 hectads since 1960) status given in the 2006 equivalent (Evans *et al*., 2006). Most of these records are from SE England (Hampshire, Surrey & Sussex) but more recently it was recorded in Pembrokeshire in 2012 (Davies *et al*., 2017), Anglesey in 2020 and North Somerset in 2022 (The British Mycological Society, 2023). It is similarly rare throughout Europe (Davies *et al*., 2017).

M. picta occurs on rotting wood and woody litter in woodlands, and is largely found on *Fagus* and *Quercus* (Davies *et al*., 2017). Kibby (2020) also mentions an association with conifer needle beds. The small stand of woodland in which the Cornish specimens were found was almost entirely comprised of *Salix*, although the log on which they were growing was so rotten that it wasn't possible to determine its identity.

Of the three fruiting bodies found, one was collected and is currently stored in FNH's private collection, while the other two were left in situ. As the significance of the record wasn't known to the author until later, there may well have been more specimens present that were overlooked.

* 40 College Road, Reading, Berkshire RG6 1QB; finleynhut@gmail.com

References

Aronsen, A. & Læssøe, T. (2016). The genus *Mycena* s.l. (*Fungi of Northern Europe* – Vol. 5). Mundelstrup, Denmark: Svampetryk.

Davies, V., Jordan, M. & Nichol, P. (2017). *Red Data conservation assessment of selected genera of fungi, based on national and local database records, fruit body morphology, and microscopic anatomy. Red List 4 (2017): Delicatula, Hemimycena, Inocybe, Marasmius, Mycena and Russula*. Alston: The Fungus Conservation Trust. Available at: https://www.fungustrust.org.uk/page/red-lists/51/redlist4.html (Accessed 26.vi.2023).

Evans, S., Henrici, A. & Ing, B. (2006). *Red Data List of Threatened British Fungi*. London: British Mycological Society. Available at: https://www.britmycolsoc.org.uk/field_mycology/conservation/red-data-list (Accessed 26.vi.2023).

Ing, B. (1992). A Provisional Red Data List of British Fungi. *The Mycologist* 6(3): 124–128.

Kibby, G. (2020). *Mushrooms and Toadstools of Britain & Europe*, Volume 2: Agarics – part 1. Geoffrey Kibby, privately published. fieldmycol@yahoo.co.uk

The British Mycological Society. (2023). *Fungal Records Database of Britain and Ireland*. http://www.frdbi.info/ (Accessed 27.vi.2023).

Figs. 1-4. *Mycena picta* (Higher Trewithen, West Cornwall, 15 May 2023; photos © F. Hutchinson)
Fig. 1. Whole specimen. Fig. 2. Pileus, lateral. Fig. 3. Pileus, dorsal. Fig. 4. Lamellae.

Notes and Records

Alick Henrici*

In my August column last year I noted that Kew Gardens had had a drought and a record 40° temperature, and speculated on when any agarics might start to reappear. *Coprinopsis lagopus* did so on August 28 followed by a clutch of ectomycorrhizals on September 8. Writing now in June after a month with no rain at all, I return to this topic. Two other items have the common theme of DNA. Fungi have so few distinguishing characters that its taxonomic effect has perhaps been greater in mycology than in botany or zoology. This and every recent issue of FM all contain reports of species new to Britain supported by DNA evidence. I belong among the majority of FM readers who I suspect are never likely to embark personally on the still fairly complex task of DNA extraction. I can only admire the ever growing band of those who now do so, and thereby promptly record significant new finds.

Did you see morels this year?

There has been general agreement among the many morel aficionados who post their finds on Facebook that this year the wet spring produced an excellent crop. [Andy Overall concurs in this issue p. 87, unseen when this was written.] Morels fruit almost exclusively in April and May and have a well-deserved reputation for unpredictability. One year they appear in quantity where never seen before but, alas for the gourmets, never the next or seemingly ever again. [Overall references his 2004 account, possibly the most recent comparable year.] At least one species is now thought to be limited to firesites of a certain age, which would explain its seemingly random appearance. Amid this enthusiasm it is worth emphasizing that it is next to impossible to identify *Morchella* species without sequencing. The one exception is the fairly common but rather variable *M. semilibera*, formerly placed in a separate genus *Mitrophora*, with opulent growths mistakenly assigned to an untenable further species *M. gigas*.

A troop of morels duly appeared in Kew Gardens this year, the first this century, so far unidentified awaiting sequencing. The previous record had been in 1998 when Brian Spooner cautiously identified a collection as *M. hortensis* sensu auct. (now subsumed in *M. elata*). Much earlier Massee (1906) had recorded several now doubtful species. These included forms of *M. semilibera* under three different species names.

I would encourage readers to revisit the admirable summary of the current state of morel taxonomy published in FM by Michael Loizides (2017). He outlines the still very partial knowledge, even just in Europe, of what has proved to be a large and difficult genus, still with many loose ends despite the 50+ references he cites. In his words "the morphological recognition of morel species remains challenging". Less specialist literature from Dennis (1981) onwards has been fairly uniform in recognising no more than three to five European species, each considered variable in appearance. Loizides listed 29 European species in his Table 3, giving for each a list of the European countries where its presence has received DNA confirmation, e.g. 12 demonstrably distinct species all known from France but none from Britain (no published sequenced records). I am told that current understanding of European species has recently been consolidated in a major treatment by Clowez & Moreau (2021) not seen personally.

And when did you see your first mycorrhizals of 2023?

I am here talking about mycorrhizals as generally and loosely understood, more specifically about ectomycorrhizal species. They deserve a less cumbersome designation - here I will call them ECMs. There seems to be some sort of common trigger, probably based loosely on a combination of temperature and moisture over the previous weeks, which ensures that the earliest fruitings of most ECM genera (*Russula*, Boletes, *Amanita*, *Inocybe*) at any one site all tend to occur within a few days of each other. Long months with none of them, then suddenly one week they all appear (though admittedly *Cortinarius* usually comes a bit later). For most of the last twenty years and certainly all of the last ten I have noted the happy day when I recorded my first ECMs in Kew Gardens. This is

likely to have been within a week of their actual appearance.

This year, after a lot of rain and a few warm days I went in with high hopes on May 10. Everything looked very lush. In two hours the only agarics of any kind I found were two fruit-bodies of *Agrocybe praecox*. [Incidentally this too is agreed to be a complex needing DNA studies to clarify. It looked like it does in Phillips (1981) and Kibby (2021), but nothing like the photo so named in FTE (Læssøe & Petersen, 2019).] I began to think my eyesight was failing. But three days later Geoffrey Kibby, spurred on by reports of ECMs elsewhere, drew just as much of a blank. Going back to my records I decided we had both been unreasonable. The earliest ECMs I had ever recorded in Kew had been on 27 May 2002 and 30 May 2014, in both cases including a Kew speciality, the little finely scaly red *Russula melzeri* (illustrated on p.52 of the last issue of FM).

In Kew *R. melzeri* has always been among the earliest ECMs to appear in those years when it has appeared at all. But in four of the last six years a summer drought set in and it probably never did fruit. For instance in 2017 no ECMs were seen until three other *Russula* species appeared on July 28. And then, just nine days later, there were also Boletes, Amanitas and Inocybes - at least 20 ECM species in total. In 2018, 2020 and 2022 I saw no ECMs at all until the second week in September. 2015 had been yet another dry summer but the rains came slightly earlier (mid August). Just one ECM species, *R. melliolens* appeared on August 27. A fortnight later the simultaneous eruption had started. Two adjacent large sweet chestnuts (*Castanea sativa*), already known to be rich hosts, had 15 different ECM species fruiting under them, including an unusually late *R. melzeri*.

More news of *Artomyces pyxidatus*

Two issues ago I highlighted the recent spread of *Artomyces pyxidatus* in Britain - two records in 120 years but ten sites spread over four vice-counties in the five years 2018-2022. Already this year there has been another, from Hounslow Heath in West London, a first for Middlesex. This was reported to me by Andy Overall, who writes elsewhere in this issue on his survey of the area. He had been greatly surprised to be shown a photo of this species taken on 22 Oct. 2022 by the local ranger, correctly identified via the iNaturalist website, though nobody had told him it was rare. Andy was shown the log where it had fruited. To his surprise on returning three weeks later (9 May 2023) it was fruiting once again (see Fig. 6 on p. 90 of this issue), and also on two further logs nearby, all old decorticated and not easily identifiable. Such a substrate is typical, but the spring fruiting is a novelty (at least for Britain). The collection is now in Kew. As a further addition to my earlier account, the host logs at the most prolific E. Kent site were later identified with some certainty as aspen (*Populus tremula*), in line with the view in FTE that it most often occurs on this host or other species of *Populus*.

What has been happening to *Polyporus* and *Lentinus*?

The following notes are triggered by the radically different treatment of *Polyporus* in FTE from the traditional concept of this genus used in CBIB and maintained recently in Ryvarden & Melo (2014). In FTE (Læssøe & Petersen, 2019) its traditional members are split between five genera including *Lentinus*, with nothing among the impressive 370 references to say where this treatment comes from. Only 16 of these relate to polypores, listed on p.824 under 'Further Reading'. All can be quickly dismissed by their dates and titles from being sources of the treatment adopted.

It had long been suspected that *Polyporus* might be closely related to *Lentinus*, a gilled genus and thus treated in the 'Agarics and Boletes' literature. Moser (1983), widely used in its English translation before the arrival of *Funga Nordica* (2008), even included *Polyporus*, though nothing else poroid. Moser's concept of *Polyporales* was of a small otherwise gilled order. It covered *Lentinus* and *Panus* (both in *Polyporales* as now understood), but also *Pleurotus* and *Phyllotopsis* (now retained in *Agaricales*).

By the time of CBIB (2005) there had been a generic change. *Lentinus tigrinus* with a white rot was retained. The other three British species belonged in another genus *Neolentinus* with a brown rot, subsequently placed in a new order *Gloeophyllales*. There had also been changes within *Polyporus*. The well known *P. badius* first published as *Boletus badius* was illegitimate, ousted by Fries's later but sanctioned use of that

name for what is now *Imleria badia*. It became *P. durus* which had an earlier combination in *Polyporus*, until that too was found to be illegitimate and *P. badius* was restored to CBIB. The equally well known *P. varius* suffered similar complications. As the earlier of two names both sanctioned by Fries it had to become *P. leptocephalus*. In CBIB it remains there.

In recent years a succession of DNA studies have been gradually unravelling the very varied mix of genera included in *Polyporales* as now understood. The morphology that used to place gilled fungi in one identification handbook, polypores in another and corticioids in a third may be convenient but doesn't reflect phylogeny. *Polyporales* contains a mix of all these and also oddities like *Sparassis*, excluded from all three. A major multi-authored 3-gene study (Justo *et al*., 2017) treated 292 taxa of *Polyporales*, assigning family names to most of the clades revealed. They suggested "the classification proposed here provides a framework for further taxonomic revision". It revealed the inconvenient truth that the type species of *Polyporus* and *Lentinus* were uncomfortably closely related. Just how close depends on differing views on which species of *Polyporus* is deemed to be the type; some say *P. squamosus*, most now say *P. tuberaster*. Further taxonomic revision has continued apace in obscure journals. I do no more here than tabulate the results, listing the British species treated in *Polyporus* by Ryvarden & Melo (2014) and their latest names as used in FTE:

Fig. 1. *Polyporus badius*, also known as *P. durus* and for some in a new genus as *Picipes badius*. Photo © Mario Tortelli.

P. badius →	*Picipes badius*
P. brumalis →	*Lentinus brumalis*
P. ciliatus →	*Lentinus substriatus*
P. melanopus →	*Picipes melanopus*
P. squamosus →	*Cerioporus squamosus*
P. tuberaster →	*Polyporus tuberaster*
P. umbellatus →	*Cladomeris umbellata*
P. varius →	*Cerioporus varius*

Incidentally, *substriatus* is a long forgotten British epithet, stemming from Bolton's 1788 *An History of the fungusses growing about Halifax*.

A correction:

In my notes on *Hydropus* in the last issue I confused readers who had reached the last paragraph on p.69. The 'least uncommon' species there discussed was *H. subalpina*, but I inadvertently called it *H. floccipes*.

* 8, Victoria Cottages, Sandycombe Rd., Richmond, Surrey TW9 3NW

References

Clowez, P. & Moreau, P-A. (2021). *Morels of Europe*. Cap Regions Editions.

Dennis, R.W.G. (1981). *British Ascomycetes*. J.Kramer.

Justo, A. *et al*. (2017). A revised family-level classification of the *Polyporales* (*Basidiomycota*). *Fungal Biology* 121: 798—824.

Kibby, G. (2021). *Mushrooms & Toadstools of Britain & Europe* Vol. 3. Privately published. fieldmycol@yahoo.co.uk

Læssøe, T. & Petersen, J.H. (2019). *Fungi of Temperate Europe*. Princeton University.

Loizides, M. (2017). Morels: the story so far. *Field Mycol*. 18(2): 42–53.

Massee, G. (1906). The Wild Fauna and Flora of the Royal Botanic Gardens Kew: Fungi. *Kew Bulletin Additional Series* 5: 103–140.

Moser, M. (1983). *Keys to Agarics & Boleti*. Roger Phillips Publishing.

Overall, A. (2004). Morels abound. *Field Mycol*. 5(3): 83–84.

Phillips, R. (1981). *Mushrooms*. Pan Books.

Ryvarden, L. & Melo, I. (2014). *Poroid fungi of Europe*. Fungiflora.

Field Mycology

Vol 24 (3) August 2023

British Mycological Society

www.britmycolsoc.org.uk