

# Pembrokeshire Fungus Recorder

## Issue 2/2022

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[www.pembsfungi.org.uk](http://www.pembsfungi.org.uk)



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### Editorial

When I started compiling this newsletter it seemed that a dry spring and summer had resulted in a dearth of fungus records and there would be little to report. Happily the rains have arrived in time to support production of fungus fruitbodies in both woodland and grassland sites with interesting finds are already coming in.

On another positive note, the Pembrokeshire Fungus Recording Network (PFRN) made a successful application to both the Pembrokeshire Nature Partnership and the BMS small grant scheme at the end of 2021.

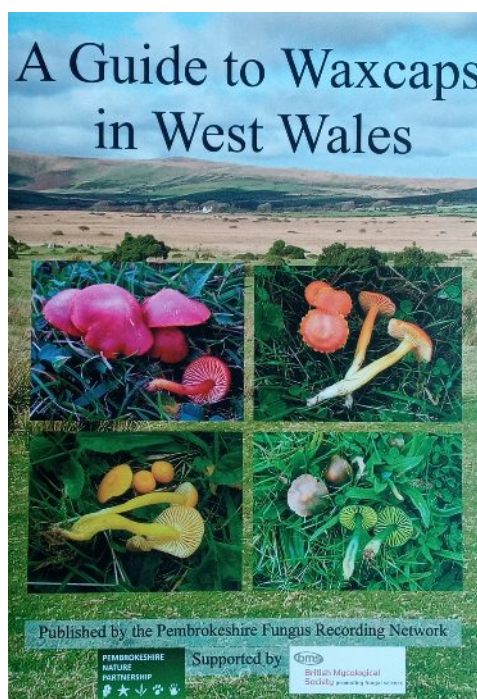
The combined grants covered two thirds of the cost of printing an updated version of “A guide to Waxcaps in West Wales”. The balance was drawn from PFRN resources.

The reprint allowed for expansion of the full-colour booklet from 24 to 40 pages with larger images and coverage extended to include 49 waxcap species found in the UK.

The target audience for the booklet is newcomers to field mycology with the book used for training at local events in west Wales.

Please continue to report interesting finds. Our Facebook page can be useful for help in identifying tricky collections.

David Harries, October 2022



### Useful website links:

<https://www.facebook.com/groups/PembsFungi>  
<https://www.wwbic.org.uk/wildlife-recording/>  
<https://aderyn.lercwales.org.uk/>

## Fungus Records

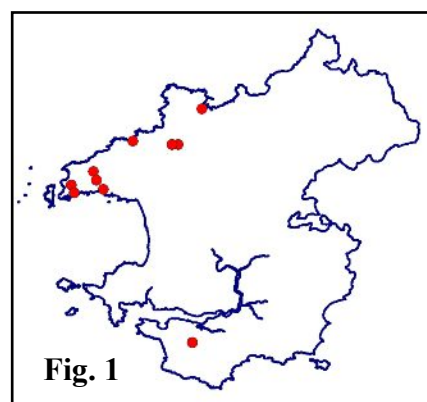
### Pear rust (*Gymnosporangium sabinae*)

Colin Russell reported an interesting find in June: Pear rust (*Gymnosporangium sabinae*) on a leaf of a pear tree purchased in 2021 from Tesco. The record was confirmed by Nigel Stringer who believes it is the first Pembrokeshire record for this species.

This rust alternates between two hosts: pear, as shown in the photo, and juniper.



### Willow blister (*Cryptomyces maximus*)



Willow blister continues to thrive in its stronghold in the north-west of Pembrokeshire. In May, Sarah Beynon reported the first record from fields at “The Bug Farm” near St. David’s.

Elsewhere in the County, Trevor Theobald and Jane Hodges checked some key sites and confirmed the continuing presence of the fungus at sites in the north-west. We now know of nine sites in the north, together with a recent find from south Pembrokeshire spotted by Holly Harries.

Fig. 1 shows the current distribution of records in the County. Please continue to look for examples of this fungus as it may be more widespread than our records suggest.

### Blushing milkcap (*Lactarius controversus*)

Nigel Lee reported a find of *Lactarius controversus*. This large milkcap can produce fruitbodies up to 45 cm across and gets its common name from the faint pinkish blush seen on the gills.

Collections are usually found in the vicinity of willow. The Fungus Records Database of Britain and Ireland (FRDBI) shows just three previous records from Pembrokeshire.



## *Leccinum* collections



Rob Mackeen reported that Bluestone was having a good fungus season and forwarded these images of *Leccinum duriusculum* (Slate bolete) and *L. aurantiacum* (Orange oak bolete) found growing in grassland under aspen. The latter species has reddish-brown woolly scales (see photo).

## *Cystolepiota pulverulenta*

This collection of small, fragile, fruitbodies was found in late September at the base of a hedge amongst leaf debris and soil. The convex-conical caps measured up to 30 mm across, but the size range for this species can extend to 50 mm. The description corresponded with that given in Kibby (2020) Mushrooms and Toadstools of Britain and Europe. Vol. 2.

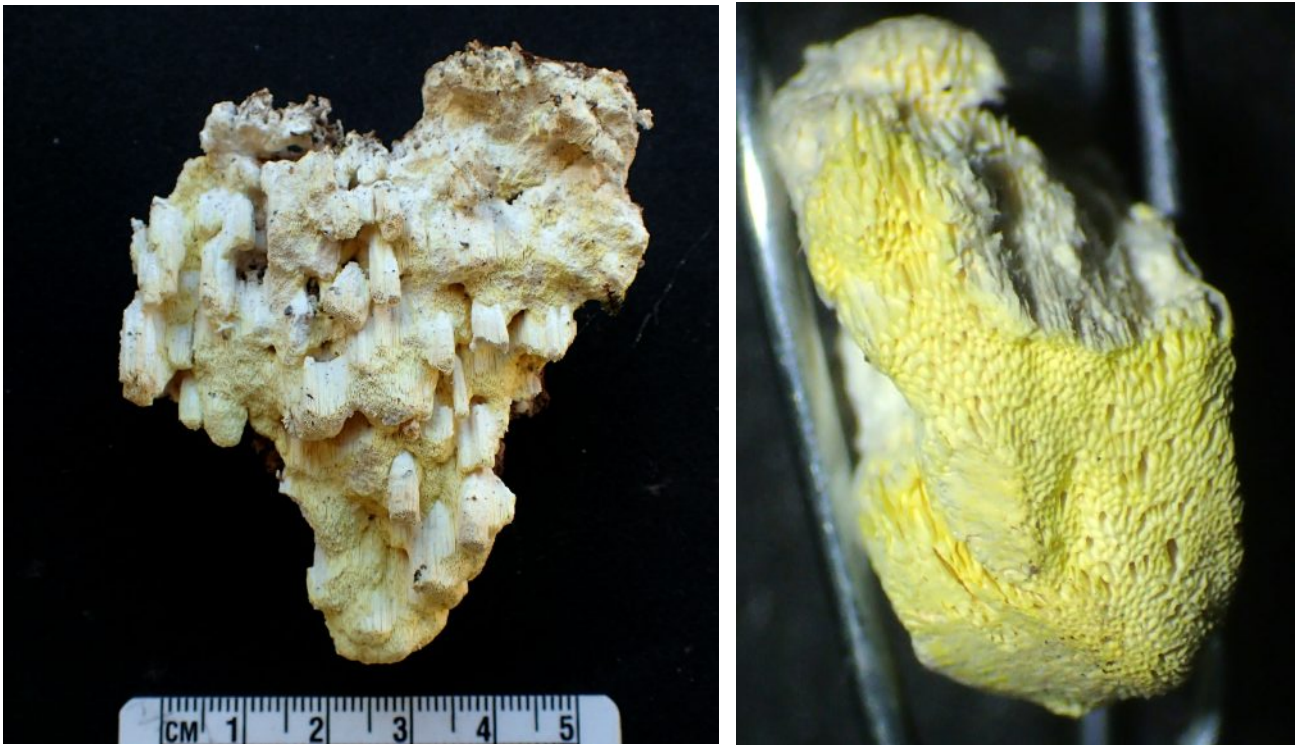
Although likely to be relatively common, relatively few records are shown for Wales: the FRDBI shows just three, all in the south and east, whilst the ADERYN system shows no records.



## Yellow porecrust (*Antrodia xantha*)

A walk around the National Trust woodland at Little Milford revealed an interesting crust fungus on a dead stump. Technically a resupinate (lying flat), poroid (pores instead of gills) fungus, it formed a mat of white chalky material with a distinctive sulphur yellow colour over an area of approximately 30 x 30 cm.

The FRDBI shows just four records in Wales, whilst ADERYN shows twelve records, all in south Wales.



### And finally...An unusual mutation on the cap of a mushroom

The example here is a field mushroom (*Agaricus campestris*) with gills appearing on the uppermost part of the cap. This growth is known as Rosecomb and can be problematic for commercial mushroom growers. Many species can exhibit this abnormal growth which is thought to be triggered by exposure to petroleum products.

The photos here show the sample as collected and a section through the cap.



## Powdery Mildews in west Wales (R. Nigel Stringer and Mark Evans)

During this summer and early autumn many of the distal leaves of plants in our hedgerows and gardens have appeared with a white powdery deposit on the upper surface, which in some cases covers the whole plant. An example is oak (Figures 1&2) where such discoloured plants stand out in the hedgerows when we drive past.



Fig. 1



Fig. 2



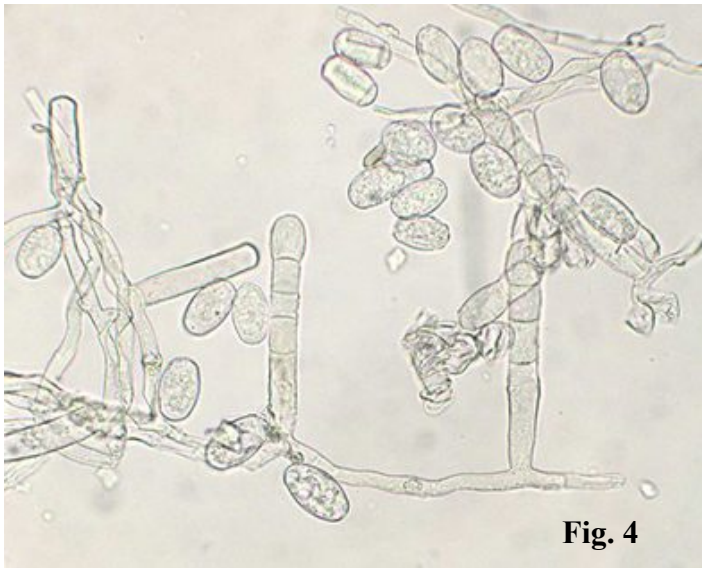
Fig. 3

If one walks along the edge of the highway or field margins other plants such as Red Clover appear to have a thin white film on the surface of the leaves (Figure 3). These white ‘deposits’ are in fact the fungal threads and spores of a group of parasitic fungi called Powdery Mildews (PMs).

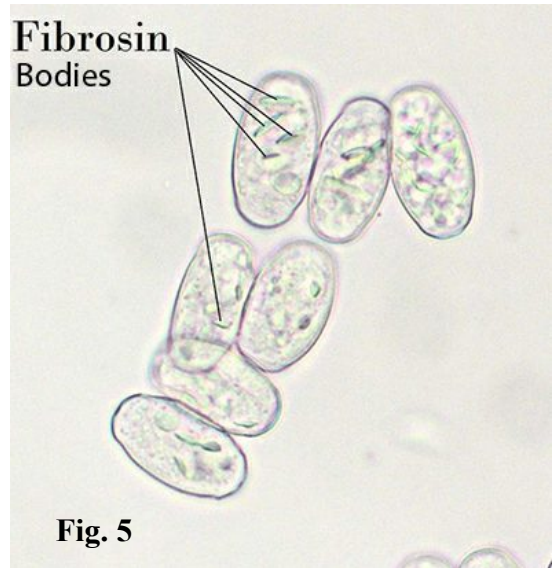
The dry weather in recent months together with above average temperatures has resulted in massive infections of PMs on native and cultivated plants which has made them more noticeable this year compared to previous. PMs are parasitic fungi (just like rusts and smuts) living within the host plant. They belong to the group of fungi called Ascomycetes, a majority of which are the ‘disc’ fungi with which we all are familiar.

Powdery mildew disease can be caused by several species of fungi in the order Erysiphales. Commercially, they can cause serious damage to sunflowers, cereal crops, soybean, grapes, gourds and melons and even apples and pears where losses of up to 40% can occur.

They are one of the easier plant diseases to identify, as the symptoms are quite distinctive with the white deposit on plant organs, especially the leaves. The white deposit consists of the fungal mycelium together with masses of spores. Two kinds of spores are produced. The first is the ‘asexual’ spore which spreads the infection rapidly through the host population. The spores (called conidia) are



**Fig. 4**

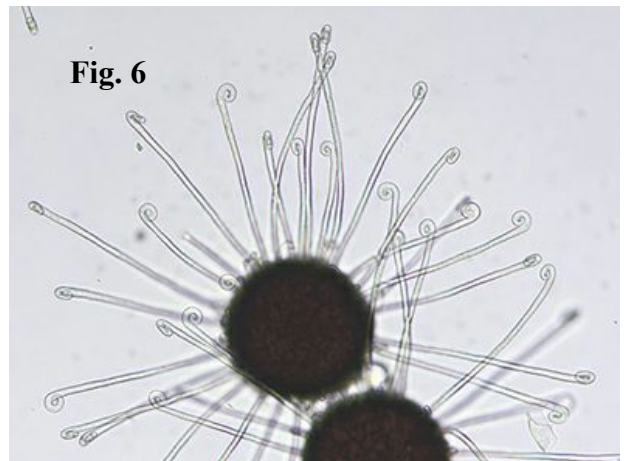


**Fig. 5**

elongated in shape and are produced in long chains (Figure 4). In some genera these spores contain reflective shard-like structures called fibrosin bodies (Figure 5) which are important in identification of the mildew.

The second type of spore produced is confined to the sexual stage. Late on in the season the mildew produces rounded bodies called Chasmothecia inside which the genetic material recombines.

Many have hair like appendages of varying shapes which again are an aid to identification (Figure 6).



**Fig. 6**

The spores (called ascospores) are produced within the chasmothecia and are released to initiate new infections.

Many PMs are host specific so their identification is relatively easy as long as one can identify the host. The recording of these fungi has sadly been neglected in Wales over the years but in recent times this has changed due to the activities of Bruce Ing and Debbie Evans in the north, Arthur Chater and Ray Woods in mid and west areas and Ian Morgan and the authors in south Wales.

In the UK there have been 1,356 PM/host associations recorded to date (Ray Woods pers. comm.). Half (684) occur in Wales and 252 have only been recorded in Wales. On a local level, nearly 400 associations are recorded for Cardiganshire, 250 for Carmarthenshire but only 50 for Pembrokeshire. Interestingly, the PMs were well recorded during 2021/22 in Carmarthenshire mainly due to the activities of Ian Morgan during his detailed recording of urban plants and habitats in and around his home in Llanelli during the two years of travelling restrictions due to the pandemic. During this period, he recorded over 200 records, many of which were new county records and a few were new Welsh/UK records. The most notable were the powdery mildew *Erysiphe ulmi* (on *Ulmus procera* from Morfa Berwick, Bynea and the Powdery mildew (*Erysiphe heraclei*) on Parsley from his garden (both of which are new Welsh records, the latter a UK record). Ian's recording has significantly increased the number of Powdery Mildews found in the county which is very convenient at this time with the publication of a new book on parasitic fungi early next year. The book will be the sixth in the series on parasitic fungi published in Wales since 2015. Ray Woods and Arthur Chater are the two principal authors and this book will be a census catalogue of all micro-parasitic fungi found in the UK

(with detailed lists for Welsh vice-counties) noted in the first five books (with updates) plus an additional listing of ‘Leaf Curl and Wart’ fungi. Anybody thinking of starting out to record fungi would do well just to concentrate on Powdery Mildews. Only two books are required - one is a fairly recent publication (2012) by U. Braun & R.T.A. Cooke ‘Taxonomic Manual of the Erysiphales’ (Powdery Mildews) which deals with the taxonomy of PM’s worldwide and the other is ‘The Powdery Mildews of Wales’ (2019) by Arthur Chater and Ray Woods which lists the PMs found in Wales based on vice-county. These two books will be all that is needed to study such an interesting group of fungi.... and of course, a microscope is essential to carry out this research.

Author’s note - all photographs © Mark Evans.

**References:**

Braun, U., & Cook, R. T. A. (2012). Taxonomic manual of the Erysiphales (powdery mildews). CBS Biodiversity Series 11. CBS, Utrecht, the Netherlands.

Chater, A. O., & Woods, R. G. (2019) The Powdery Mildews of Wales.

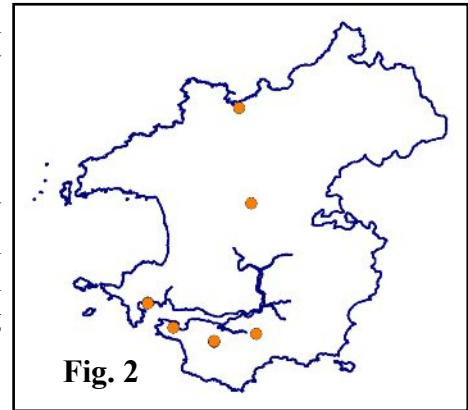
**Update on the spread of Ping-Pong bat fungus (DJH)**



Fig. 1

The Ping-Pong bat fungus (fig. 1. © A. Rivett) continues to spread across the County with the most recent finds reported by Andrew Lennox from Scolton Country Park and Adam Pollard-Powell from Holyland Woods.

Arthur Rivett reported the continuing presence of the fungus in good numbers at St. Ishmael's. Figure 2 shows the currently documented sites.



A recent publication by researchers in China (Zhang & Dai, 2021) describes research into the *F. calocera* complex. They concluded that the complex is made up of six species based on analysis of DNA sequences. They generated a key based on macro and micromorphology which is reproduced below as fig 3.

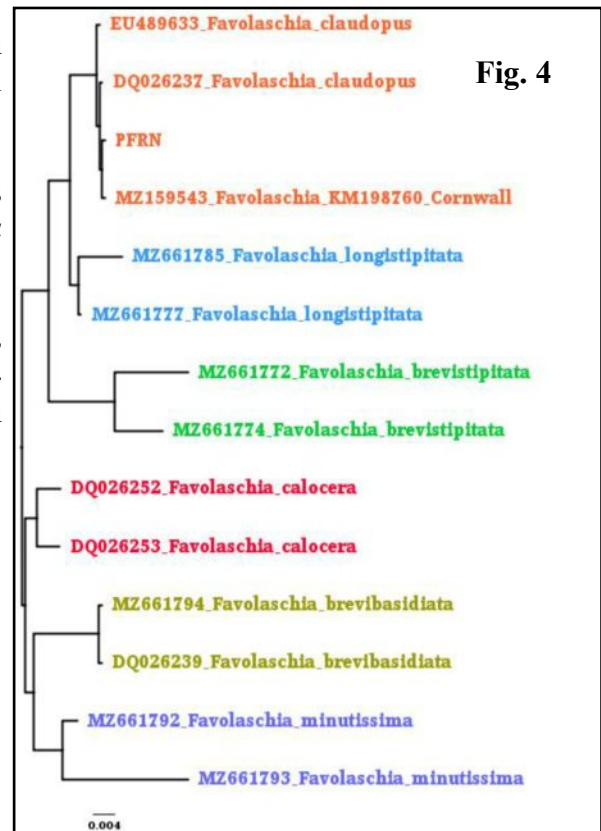
**Fig. 3 Key to *Favolaschia calocera* complex**

1	Basidiocarps apricot-orange when fresh	2
1	Basidiocarps lemon-chrome when fresh	4
2	Pileus usually <5 mm	<i>F. minutissima</i>
2	Pileus usually >5 mm	3
3	Mature pores up to 2 mm in the largest dimension	<i>F. calocera</i>
3	Mature pores 0.4–1 mm	<i>F. brevbasiata</i>
4	Stipe usually <5 mm long	<i>F. brevistipitata</i>
4	Stipe usually >5 mm long	5
5	Basidiospores up to 15 µm in length	<i>F. claudopus</i>
5	Basidiospores 9.8–13 × 6–8 µm	<i>F. longistipitata</i>

Collections sampled from Europe (Italy), along with material from Australia, New Zealand and Kenya, all fell into the *F. claudopus* group.

UK collections will most likely correspond with this species name but are currently assigned to *F. calocera* in the various recording systems

Figure 4 shows a tree constructed using the sequences published by Zhang with the inclusion of a Pembrokeshire sample (labelled PFRN) and a Kew sample from Cornwall downloaded from Genbank.



**Reference:**  
 Zhang, Q. Y., & Dai, Y. C. (2021). Taxonomy and Phylogeny of the *Favolaschia calocera* Complex (Mycenaceae) with Descriptions of Four New Species. *Forests*, 12(10), 1397.