

DNA Sequencing Results

Update March 2026 Part 2

Waxcaps

***Hygrocybe constrictospora* aff.** I now have a sequence in the other direction for this one and have a longer, better quality sequence. It is still not near other sequences and the microscopic characters did not fit *constrictospora* with only about 40% of the spores constricted. I will upload to GenBank as *Hygrocybe constrictospora* aff. and see if this leads to any other finds. Found by Simoen Cathcart at the Giant's Causeway in the very rich hay meadow field between the upper car park and the visitor centre.



Hygrocybe aff. *constrictospora* Giant's Causeway

- ***Hygrocybe phaeococcinea*:** I now have a reverse improved sequence from the find reported in the last report. It matches a number of European sequences of *phaeococcinea* but there are definitely other different sequences of *phaeococcinea* around as well. There needs to be a good reference sequence for this species and then we can compare how this one fits. It is the same as the other *phaeococcinea* find at the Giant's Causeway – see both photos below.



Hygrocybe phaeococcinea, Giant's Causeway

- ***Hygrocybe mucronella***: I went back over older finds of *mucronella* measuring spores to see if we have any finds of *Hygrocybe amara*. The differences are cap colour and spore Q value (length / width). *H. amara* is pale orange, yellowish orange to orange with spore Q value of 1.32-1.39 while *H. mucronella* is more reddish orange and has a Q value of 1.51-1.63 so are more elongate. The one specimen that could possibly have been *amara* was from Knocknaliffina on the Marlbank. The Q values for this specimen came out right in between the two published ranges at 1.42 but the sequence is clearly of *Hygrocybe mucronella*.

Dermoloma

- ***Dermoloma cuneifolium***: Two more sequences of the common *cuneifolium* – one from Cushendall Layde Parish Church and Keble NNR. So we are not finding many of the new *Dermoloma* species at all to date.



Dermoloma cuneifolium Cushendall

Others

Agaricus cf. vinosobrunneus: This *Agaricus* was found on Keble by Jolanda. We are going to have to look at these dark grassland *Agaricus* species more carefully. We have found *Agaricus sylvaticus* in grassland before that reddens significantly when sliced but these may also have to be checked. I have recorded a number of *Agaricus impudicus* on waxcap grassland sites before where they do not

redden or yellow when sliced and with small spores but these are under question now. I've struggled a bit getting a good sequence from these but this one finally produced a good clean sequence. It came out nearest to a number of sequences labelled "*Agaricus* sp." from Mexico on GenBank and UNITE but not near to *impudicus*. After a bit of googling, I found that these sequences were used in a paper describing *Agaricus cervinoculus* in Mexico and this sequence was a 99.28% match to the type. Sharing with others, David Harries in Wales had an identical sequence and Geoff Kibby suggested that we contact Luis Parra in Spain who wrote the Fungi Europaei volume on *Agaricus*. Luis responded very quickly as our sequences match a species that he is working on with collections from Spain and Italy. He thinks it is the same as *Agaricus vinosobrunneus* which was originally described by Peter Orton in England. It is now down as a synonym of *Agaricus sylvaticus* on Species Fungorum but if Luis is correct, it will be split out as a good species. Hence this is a "cf." for now. Until this species is re-described, it is unclear as to what macro and micro features to look out for. Peter Orton's original description says that it reddens especially at the top of the stipe but I have not observed that with it appearing to have no colour change.



Agaricus cf. vinosobrunneus, Kebble NNR, Rathlin

- ***Agaricus porphyrocephalus***: This species is close macro and microscopically to *Agaricus cf. vinosobrunneus* but the sequence is different. Found at Rue Point on Rathlin by Matthew Flood.



Agaricus porphyrocephalus, Rue Point, Rathlin

- ***Arrhenia cupulatoides***: A second confirmed sequence of this small *Arrhenia* found on Dog Lichen, *Peltigera*. *Arrhenia peltigerina* s. lat. is rarely recorded in Ireland but is probably under-recorded. It has been split into two species but our finds so far are *A. cupulatoides*. Found by Chris Stretch at Linford Barrows on 12/11/2025.
- ***Inocybe sp.***: I tried extracting DNA from a few older specimens of *Inocybe* from the summit of Slieve Donard. I failed on two from 2000 but got a sequence from one knobbly spored *Inocybe* found in 2011 which I had identified as *Inocybe soluta*. Unfortunately, it slipped after about 305 base pairs so this is too short to have any confidence with a result but, hopefully, I'll be able to get a reverse sequence and join them together at the point it slipped.
- ***Pseudoclitocybe cyathiformis clade II***: There has long been a discussion about the Goblet on grassland. Some keys say that the grassland Goblet is different to the woodland Goblet and this may prove to be the case. Books and keys often have conflicting interpretations of species. A recent paper on the group (Alvarado, P., Moreau, P-A., Dima, B. et al, Fungal Diversity (2018) 90:109-133) looked at the group molecularly and came to the conclusion that *P. expallens* is a nomen dubium but *P. obbata* is a good distinct species from *P. cyathiformis* but that there are two distinct clades of *P. cyathiformis*. Two grassland sequences of the Goblet from the Marlbank from 2024 and from an NIFG foray to Linford Barrows in 2024 both came out in Clade II of *P. cyathiformis* distinct to *P. obbata*. It would be very interesting to collect some woodland Goblets and sequence them to see if they fall into Clade I.

- ***Pseudoomphalina***: Our mystery *Pseudoomphalina* is still in the mystery category. I was sent two specimens from the Royal Botanic Gardens Edinburgh that were labelled *P. graveolens* that were collected by Prof. Roy Watling, one from 1961 and the other 1990 and another from Wales collected by Peter Roberts. All three failed to produce a good DNA gel result or sequence. Another recent possibility from North Wales turned out to be *Omphalina pyxidata*.



Pseudoomphalina sp., Keble NNR