

## Is this a CHEGD fungus?

Ancient Grasslands are an irreplaceable and declining habitat across the world but are still well represented across the UK. These grasslands have enjoyed some stability but are now under threat from changes in land use, air pollution and climate change. It's vital that we identify them and maintain the practices which have supported them over hundreds of years.

Some can be identified by their plant communities but for others we are reliant on a selective group of fungi which are largely restricted to long standing and undisturbed grasslands. These are known as the CHEGD fungi, each letter representing a different genera or group of fungi.

The best known and most recorded of these five groups are the H (Hygrocybe), commonly known as Waxcaps. The release of David Boertmann's book – The Genus Hygrocybe demystified what had previously been a very confusing genus. Since its publication more species have been discovered and the whole genus has been split into several genera. They have been much researched and surveyed and a number of helpful field keys have been made to help amateur recorders get to grips with them.

The other four groups have no definitive works to help determine them in the field and this means they have been less well recorded. The result of this is that some important ancient grasslands which are mycologically rich are overlooked. I have tried to create field keys for the next two commonest and most diverse groups, the C (Clavariaceae) and the E (Entoloma).

Keys are a tool to help us distinguish one species from another. They may help us to identify exact species or simply to indicate diversity. Success with keys comes from practice and experience of the subject. It's most helpful to work with an experienced surveyor who can confirm your IDs and point out where you became lost in the key. Keys often talk about features which are not familiar and make subjective statements which are only relevant to the experienced user.

Most importantly when you find a grassland fungus you first need to be able to determine if it is a CHEGD fungus and then decide which key to use. Fortunately the range of fungi in grasslands is much less than in woodlands but you will still need to learn the general features of both the CHEGD fungi and the other common grassland fungi.

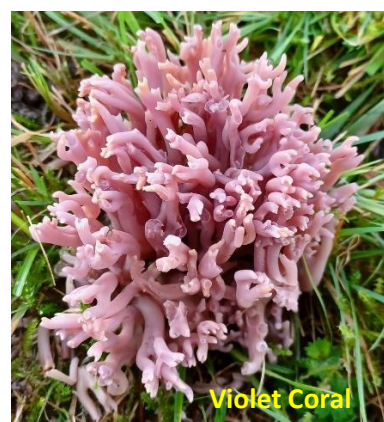
### C – Clavariaceae, the Fairy Clubs and Corals

These come in three forms.

Clubs, single fruitbodies which may grow individually or in groups.

Spindles, similar but fused at the base.

Corals, fused at the base with branching structures.



The commoner species are white or yellow but rarer species can be pink, violet, brown or black. There aren't too many confusion species other than Scarlet Caterpillar Club and the G (Geoglossaceae) or Earthtongues which are generally brown or black but can be colourful.



H - Hygrocybes – Waxcaps – (Chromosera, Cuphophyllus, Gliophorus, Gloioxanthomyces, Hygrocybe and Porpolomopsis)

Waxcap are mushrooms which can be very colourful or very plain. They have some qualities in common which helps to separate them from most other grassland species. The D (Dermoloma) are similar to the Hygrocybe and used to be included in that group.

Waxcaps and some Dermoloma tend to have widely spaced gills.



Other grassland species tend to have closely spaced gills



Waxcaps and Dermoloma tend to be medium to large sized fungi with stout stems, although younger fruitbodies can be as small as 10-15mm across. Generally, these have a button type appearance and are likely to be white, yellow, green, orange or red.





**Shadowed Waxcap**



**Butter Waxcap**

Other small species are likely to have a narrow stem in comparison to the cap.



**Orange Mosscap**



**Ivory Bonnet**

A common group of grassland fungi are the dung fungi which have black spores. Field mushrooms start with pink gills that turn black as they age, this is because they have black spores. Many dung fungi also have long narrow stems in comparison to the cap. Whatever the shape, if it is growing from dung, it is not CHEGD.



**Dung Roundhead**



**Egghead Mottlegill**

Waxcaps and Dermoloma have white spores which are sometimes visible at the top of the stem. Some Waxcaps and Dermoloma turn black with age, but this is not limited to the gills.





When Waxcaps are fresh they have gills which are paler than the caps and the colour of the stem usually matches the gills or cap.



### E- Entomola – Pinkgills

The Pinkgills are less common than the Waxcaps, much more difficult to identify and therefore much less recorded. They vary greatly in size, form, and colour. They all have pink spores but in younger specimens that may not be evident. There are features which can help point you to a Pinkgill ID.

Some species have a coloured gill edge.



Many have blue or black colours in the cap and stem and can have blue gills too.





Some are brown in cap and stem and the pink spores can be difficult to see on the gills.



There are some large species too in blues, greys and brown. All the below are Red Data listed species.



Unlike the Waxcaps and Dermoloma they tend to have long slender stems in comparison to their caps.

Many Pinkgills smell 'mealy', described as smelling like wet flour or pastry. One smells of mouse urine and another smells of bubble-gum.

### G - Geoglossaceae – Earthtongues

Small and difficult to see, in a grassland context they are unlikely to be confused with other species although there are some black clubs which could appear similar.

Earthtongues have an infertile stem and a fertile head. There are four genera in this group, and these are separable in the field but microscopy is needed for a species ID.

The more common species are brown or black





*Geoglossum fallax*



*Glutinoglossum glutinosum*



*Trichoglossum variabile*

The other genus (*Microglossum*) has more colourful species.



*Microglossum rufescens*

#### D – *Dermoloma* – Crazy Caps and Allies

This group includes *Dermoloma*, *Hodophilus*, *Camarophyllopsis* and *Pseudotracheloma*. It is something of an add on to the CHEG fungi. What all these species have in common is white spores and relatively widely spaced gills.

Only one of these species is relatively common, *Dermoloma cuneifolium* - Crazy Cap. A distinctive feature is the pale edge to the cap, emarginate gills and a strong mealy smell. As the cap dries it develops a 'crazed' effect.



Crazy Cap





Hodophilus and Camarophyllopsis (both Fanvaults) have adnate to decurrent gills. Relatively small species, they are rarely found. Pseudotracheloma metapodium Mealy Meadowcap, is a single species from the genus found in grassland. It is a stout and discolouring species, bruising red, it is a rare find.



### Other Important Species

There is one other important species to look out for in grasslands. Powdercap Strangler (*Dissoderma paradoxus/Squamanita paradoxa*) is a rare UK Red Data Book species. It is a parasite of Earthy Powdercap, the mycelium spreads into the stem of the Earthy Powdercap digesting it and swelling the stem, eventually a grey cap emerges from the digested Powdercap and may retain the original veil remnants of the host.



## Other Grassland Species

There are many common grassland species, but few should cause confusion with CHEGD species. Everything with dark spores can be excluded, that includes most dung fungi and Liberty Caps. Orange Mosscap and Ivory Bonnet, show above are often confused for CHEGD species so it helps to be familiar with them. Another common genus in CHEGD grasslands is *Galerina*, these are small orange mushrooms with straight caps, orange gills, stems and spores. They occur in a range of sizes. Yellow Fieldcap can have a slimy yellow cap, but it has a coloured cap, long white floccose stem and the spores are a rusty brown.



One common grassland fungus is the Earthy Powdercap, when fresh it's clearly not a Waxcap because it has powdery veil remnants on the cap and stem, however when older and after rain the cap can become smooth, and it can look like a *Cuphophyllus* or *Gliophorus*.



Like the Yellow Fieldcap above, several species have coloured caps and white stems, Waxcaps with coloured caps always have stems of a similar colour to the cap. There are several species of *Strophia* with Blue/Green slimy caps with white stems. Where grassland meets woodland you may find Brittle-gills with coloured caps and stout white stems. The cap colour is only skin deep so you may see white patches where the cuticle is damaged. These tree associates grow with tree roots which can stretch tens of metres underground. The classic red and white toadstool, the Fly Agaric, is distinctive, but it can lose its spots in the rain. This is another with a white stem and gills.