

The genus *Coprinus* and allies

Most of the species previously in the genus *Coprinus* and commonly known as Inkcaps were transferred into three new genera in 2001 on the basis of their DNA: *Coprinopsis*, *Coprinellus* and *Parasola*, leaving just three British species in *Coprinus* in the strict sense.

The name Inkcap comes from the characteristic habit of most of these species of dissolving into a puddle of black liquid when mature - or 'deliquescing'. In the past this liquid was indeed used for ink. Many species are very short-lived – some fruit bodies survive less than a day – and they occur in moist conditions throughout the year in a range of different habitats according to species including soil, wood, vegetation, roots and dung.

Caps are thin-fleshed, usually white when young and often appear coated in fine white powder or fibrils called 'veil'; they range in size from minute (less than 0.5cm) to more than 5cm across. Gills start out pale but soon turn black with the deliquescing spores. Stems are white and in some species very tall in relation to cap size. One species, *Coprinopsis atramentaria*, has a seriously unpleasant effect if eaten a few hours either side of consuming alcohol, acting like the drug 'Antabuse' used to treat alcoholics.



Coprinus comatus

Photo credit: Nick White



Coprinopsis lagopus

Photo credit: Penny Cullington

The genus *Agaricus*

This genus contains not only our commercially grown shop mushroom (*Agaricus bisporus*) but also about 40 other species in the UK including the very tasty *Agaricus campestris* (Field Mushroom) and several others renowned for their excellent flavour.

Not all members of this genus are good to eat and some are poisonous. They can be found from the middle of Summer and throughout the Autumn, some species occurring in woodland litter, others in grassland.

Caps range in size from 3cm to 15cm across according to species and are mostly white to brown. They can be smooth but are often scaly. Some stain red when damaged, others stain yellow.

When young the gills are pale pink but with age gradually darken to chocolate then black brown – the colour of the spores. The stem is white and has a ring (sometimes lost with age) and can also stain either red or yellow when handled or damaged.

Several species have the typical ‘mushroomy’ smell of the shop-bought variety, others smell of almonds or even of ink.



Agaricus impudicus

Photo credit: Penny Cullington



Agaricus silvaticus

Photo credit: Penny Cullington

The genus *Lactarius*

There are over 70 different species of this distinctive genus in the UK, known as 'Milkcaps'.

The common English name comes from the 'milk-like' liquid which exudes – sometimes copiously – from damaged gills and flesh.

Some species are rare, some are common, a few are considered good to eat. They occur in Autumn growing under many different types of trees with which they have a mutually beneficial relationship. Some are host specific.

Caps range in size from less than 3cm to over 10cm across according to species; most are shades of brown, grey or tan though a few species are white; some are smooth, others are hairy and some are marked with concentric zoning.

Gills and spores are usually a shade of cream and stems are usually paler than the cap and have no ring.

Some species have interesting smells. In certain species the liquid from the gills can change colour from white to grey, green, yellow, orange, pink or even deep lilac!



Lactarius blennius

Photo credit: Nick Standing



Lactarius deterrimus

Photo credit: Nick Standing

The genus *Inocybe*

There are over 140 species of this genus in the UK, commonly known as the 'FibreCAPs' owing to their characteristic fibrous cap texture.

Many of the genus are best described as typical LBJs – Little Brown Jobs and most need a microscope to identify to species but a few are distinctive.

They can be found in Autumn growing under many different types of tree with which they have a mutually beneficial relationship. All but one species are poisonous, one is known to be deadly.

Caps can be smooth or scaly and are often split at the edges; size range is from 1cm to about 8cm across according to species. Many species are some shade of brown, a few are white, a few are yellow and one is a beautiful lilac.

Gills start out pale brown and gradually darken to snuff brown - the colour of the spores; stems are usually whitish to brown, sometimes lilac, they lack a ring but often have a 'bulb' at the base.

Some species have interesting smells, such as of *Pelargonium* leaves, marzipan, honey, fish, even pear drops.



Inocybe cookei

Photo credit: Penny Cullington



Inocybe lilacina

Photo credit: Claudi Soler

The genus *Scleroderma*

There are just 6 species of this genus found in the UK, commonly known as 'Earthballs'. They are all poisonous and mainly occur in deciduous woodland, growing on the ground in association with various tree species.

It is easy to confuse the poisonous 'Earthballs' with the somewhat similar 'Puffballs'* which also occur in deciduous woodland.

Here are a few distinguishing features of 'Earthballs' to look for:

- 'Earthballs' tend to be misshapen with thick tough scaly skins which are never white but either brown or dirty yellow.
- When cut in half they are olive brown inside but soon turn black. They have an unpleasant strong smell.

Illustrated from top to bottom are the three common 'Earthball' species; Common Earthball (*Scleroderma citrinum*), Scaly Earthball (*Scleroderma verrucosum*) and Leopard Earthball (*Scleroderma areolatum*).

- * See the genus sheet on *Lycoperdon* (the 'Puffballs') nearby for further information and comparison.



Scleroderma citrinum

Photo credit: Claudi Soler



Scleroderma verrucosum

Photo credit: John Tyler



Scleroderma areolatum

Photo credit: John Tyler

The genus *Lepiota* and allies

About 40 different species of *Lepiota* occur in the UK; these and their small but close cousins in *Cystolepiota* are commonly known as Dapperlings. There are also some very large species (sometimes dinner plate size) now split off into two different genera: *Macrolepiota* and *Chlorophyllum* – commonly known as Parasols.

All occur in late Summer and Autumn in woodland litter and the Parasols can also be found in grassy areas and even dunes.

Typical of the genus are their rough scaly caps which are often pale brown to white with a darker brown central zone.

Gills and spores are nearly always white. Stems often have a ring or a ring zone and sometimes a swollen base.

A few species have distinctive smells. *Chlorophyllum* flesh stains orange when damaged.

A few of the larger species could be confused with the genus *Amanita*, but the cap scales in *Lepiota* do not rub off whereas the scale-like flecks on *Amanita* caps are only loosely attached and can be removed by rubbing or even with rain.



Lepiota aspera

Photo credit: Nick Standing



Macrolepiota konradii

Photo credit: Penny Cullington

The genus *Russula*

This genus has over 150 different species in the UK, many of which are brightly coloured. The English name of Brittlegill comes from the characteristic crumbly gills. Some species are rare and some are common. Many species are edible but not worth while, just a few are good to eat and a very few are considered poisonous.

They occur in Autumn growing under many different types of tree with which they have a mutually beneficial relationship. Some are host specific.

Caps range in size from less than 5cm to over 10cm across according to species; they come in shades of red, yellow, green, mauve, white, brown or even black. They are often nibbled by squirrels, mice or slugs.

Gills and spores are mainly white to cream but a few are ochre to orange.

Stems are usually white, have no ring and in some species are marked with patches of the cap colour; in others the stem blackens where damaged. A few species have a distinctive smell, such as fruity or fishy!



Russula claroflava

Photo credit: Penny Cullington



Russula emetica

Photo credit: Penny Cullington

The genera *Peziza* & *Otidea*

These two very similar genera have over 60 species between them in the UK, the clear majority being in *Peziza*. They both belong to the Ascomycetes – the ‘Spore shooters’ and are referred to as ‘cup fungi’ owing to the cup-like shape of the fruit bodies.

The Ascomycetes form a vast Phylum (group) of fungi separated from other phyla by their method of spore dispersal. The gilled / pored fungi which include the mushrooms and toadstools are classed as Basidiomycetes - the ‘Spore droppers’.

To tell these two cup fungi families apart in the field:

- The fruit bodies of *Peziza* form a complete cup with no split.
- The fruit bodies of *Otidea* form an incomplete cup having a split down one side and tend to be ‘ear-shaped’.

Cups vary in size from 3cm to 6cm across according to species. They are mostly some shade of brown although one *Peziza* is purple and another one white.

Some species have a short stem, others grow flat on the soil or wood substrate. A microscope is nearly always necessary to make a definitive identification.



Peziza arvernensis

Photo credit: Penny Cullington



Otidea onotica

Photo credit: Nick Standing

The genus *Hygrocybe*

Over 50 different species of this genus occur in the UK; they are commonly known as Waxcaps and many of them are amongst our most colourful and attractive fungi.

They are found in areas of unimproved grassland (that which has not been treated with artificial fertilisers) including lawns, cricket pitches, churchyards, etc., also occasionally in woodland.

They tend to occur in late Autumn, sometimes in large numbers when they can resemble a scattering of large brightly coloured pebbles.

Caps are often shiny and greasy, even sticky and slimy, and come in a range of colours according to species: red, yellow, orange, pink, white, brown to black and even bright green.

Most species are quite small with caps under 4cm across. Gills are widely spaced and are a similar or paler colour to the cap.

Stems can be sticky, dry or glutinous. Spores are white.

Some species have interesting smells such as honey or even of Russian leather!



Hygrocybe coccinea

Photo credit: Penny Cullington



Hygrocybe psittacina

Photo credit: Penny Cullington

The genus *Geastrum*

There are 18 different species of this genus in the UK, commonly known as 'Earthstars'.

They are similar in basic structure to the Puffballs and Earthballs but differ in having a thinner skin which in early stages is given protection by a tough covering.

As the fruit body emerges through the woodland litter this covering gradually splits open and folds down giving the impression of flower petals which gives this genus its unique and distinctive star-shaped base.

When the spores within are mature, raindrops and air movement trigger their dispersal through an opening at the top of the puffball-like structure.

Earthstars fruit in Autumn and grow under many different trees, both coniferous and deciduous.

Look under Beech trees in thick litter for one of the commoner and larger species, *Geastrum triplex* (Collared Earthstar).



Geastrum pectinatum

Photo credit: Penny Cullington



Geastrum triplex

Photo credit: Andy Richards

The genus *Lycoperdon*

There are over 10 different species belonging to this genus in the UK. They are commonly known as 'Puffballs' due to their round shape and method of spreading spores by puffing them out in a cloud of brown smoke. Some 'Puffballs' occur in grassland and some in woodland where they are sometimes confused with the similar but poisonous 'Earthballs'* which occur in the same habitat.

Two very common woodland species of Puffball are *Lycoperdon pyriforme* and *Lycoperdon perlatum*. Both are edible but be warned: do not collect unless you are sure of the difference between these and the poisonous 'Earthballs'.

'Telling Puffballs apart from Earthballs'

Puffballs are regular in shape and have soft skins which start out white and turn at most pale brown at the spore-puffing stage. The flesh inside is also white until this stage when it becomes brown. They have very little smell.

Earthballs are irregularly rounded to misshapen and have thick rough skins marked usually with pocks or scales, they are never white but are brown or dirty yellow. The flesh inside very soon turns olive brown to grey black. They have an unpleasant strong smell.

* See the genus sheet on *Scleroderma* (Earthballs) nearby for further information and comparison with Puffballs.



Lycoperdon pyriforme

Photo credit: Nick Standing



Lycoperdon perlatum

Photo credit: John Tyler

The genus *Amanita*

We have over 40 different species belonging to this genus in the UK. Some are rare, some are common, some are extremely (even deadly) poisonous. Very few are considered edible.

Many of the commoner species have English names, such as Death Cap (*Amanita phalloides*), Destroying Angel (*Amanita virosa*) and the charismatic Fly Agaric (*Amanita muscaria*) which is the most brightly coloured member of the genus with its vivid red cap and white 'spots' and is often used as an example of a typical toadstool in illustrations for children's books and other literature.

Caps range in size from 5cm to more than 10cm across according to species, and can be white, yellow, red, orange, some shade of cream, beige or brown; they are often flecked with white or occasionally grey 'spots' which can be rubbed off or washed off by rain.

Gills and spores are white. The stem is often white and in many species has a skirt-like 'ring' just under the gills.

At its base it often has a characteristic swelling or enclosing 'sac' called a volva.



Amanita phalloides

Photo credit: John Tyler

The genus *Mycena*

There are over 70 different species of this genus in the UK, commonly known as Bonnets.

Most are small and delicate with thin-fleshed smooth caps and long thin stems.

They grow in a wide range of habitats and substrates according to species, sometimes clustered in large numbers. In woodland they occur on living and fallen wood of many trees, in soil and litter and on dead herbaceous stems. Some species frequent lawns and other grassy places.

A few species are recognisable without a microscope and have distinctive characters but most require identification by an expert.

Some species have tiny caps - less than 5mm across, in a few species they can get to 3cm or more, but most species have caps between 1 to 2cm across. They are mostly some shade of brown but can be red, pink, white, black, even blue according to species.

Gills and spores are white. In a few species stems exude fluid when damaged which can be colourless, white, bright orange red or wine red according to species.



Mycena arcangeliana

Photo credit: Ali Ashby



Mycena epipterygia

Photo credit: Mike Stroud



Mycena rosea

Photo credit: Penny Cullington

The genus *Pluteus*

There are around 20 species of this genus in the UK, commonly known as 'Shields'.

A few species are common, some are very rare, but with practice the genus is quite an easy one to recognise.

Whether caps are large or small, smooth or textured, all species occur on fallen wood, submerged roots or woodchips and all have pink gills and spores when mature.

Caps range from about 2cm to more than 8cm across according to species; most are some shade of brown, a few are yellow or white, one very rare species is bright red. Some species have smooth caps, some wrinkled or veined, some rough.

Gills start out white but gradually turn pale pink then pinkish brown – the colour of the mature spores, and never become dark brown. In a very few species the gills have a contrasting dark brown edge.

Stems are usually paler than the caps and lack a ring or a swollen base.



Pluteus thomsonii

Photo credit: Ali Ashby



Pluteus chrysophaeus

Photo credit: Claudi Soler