

HOW MANY TYPES OF LARGE FUNGI ARE THERE?

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When asked how many types of large fungi there are, most people think only of mushrooms and toadstools. While mushrooms and toadstools are amongst the commonest of fungi, there are many other types of large fungi and many ways of grouping them. People who study fungi (known as mycologists) group fungi on features such as spore colour, shape of the cells that make up their tissues, the way they react to certain chemicals, and many other characters. This can become very complex and is almost impossible without a good microscope, access to chemicals, and a lot of study.

Another, simpler, way is to group them according to some basic and obvious features. The groups constructed this way may not always be closely related to the scientific classification of the fungi, but they are convenient and helpful for the amateur fungi forager. Here are some of the common groups.

Bird-nest fungi are quite small, less than 1 cm across, and look like tiny bird nests with grey or white eggs inside. These “eggs” contain the spores and are flicked out of the “nest” by the impact of rain drops. When they first develop they have little caps which cover the top of the nest and protect it until the spores are mature. They are common in many places that have moist mulch or litter, and are often found in garden beds where they break down wood or leaves into nutrients plants can use.



Bracket-gilled fungi are, as their name implies, bracket-shaped and usually grow from the sides of dead or living trees, or on fallen branches or twigs. On the underside they have “gills” – plate-like structures which produce the spores. Many are white or brown but some may be brightly coloured. This picture shows the underside of the fungus, exposing the beautiful delicate gills. It is growing on a fallen dead palm frond which it will help to decompose, releasing nutrients.

Bracket-pored fungi are also bracket or shelf-shaped but underneath they have tiny pores or tubes, not gills. The spores form within these tubes and then drop out the bottom to be picked up by wind currents. Some of the bracket-pored fungi are parasites on living trees and may kill their host. Those in the picture are growing on fallen decaying wood which they help to decompose. One bracket has been broken off and turned over so that the underside of the bracket is exposed. It is paler than the upper surface. The pores are sometimes minute and difficult to see, but may be quite large in other species.





Coral fungi, as their name implies, look like coral, although there are many that just form a single, stick-like fruiting body, often brightly coloured. The spores form within the tissue of the coral and are distributed by wind and animals. They may grow on decaying wood or on soil and are often seen after heavy rains in rainforest. They assist in decomposing wood and fallen leaves and converting it into nutrients for nearby plants.

Corticoid (outer layer) or “paint” fungi form a paint-like skin or fleshy coating on living or dead wood. They cause decay in the wood and help to break logs and stumps down into nutrients that plants can use. They also aid in removing, over time, large logs that would otherwise make rainforest impassable. Several are brightly coloured in yellows, reds or purples.



Cup fungi, technically known as ascomycetes, are a highly varied group ranging from tiny flake-like specks on soil or decomposing leaf litter to fruiting bodies (like this one which is over 100 mm tall) and helping to break down wood-chip mulch. The term cup fungi refers to the reproductive structures, not the overall shape of the fungus. Many cup fungi look like thick black hairs or like tiny coloured wine-glasses.

Jelly fungi look and feel like jelly and come in white, red-brown or yellow and in the shape of blobs, layers and seaweed-like or brain-like masses. They are amongst the first fungi to appear on decaying wood after rain and are important food for slugs, snails and insects.





Slime moulds are not technically fungi but are very common around Cairns on mulch and lawns, and often attract attention with their bright colour. They are included here because they are frequent in gardens and on roadsides. With age they turn brown then a purplish-grey colour and are then sometimes referred to as “dog-vomit” fungi – an apt description. They decompose wood and return nutrients to the soil. There are many types of slime moulds, some of them very beautiful.

Stinkhorn fungi are so named because of the bad smell produced by the spore-bearing slime formed between the ridges on the cap. This odour attracts blow-flies, which then walk on the spore mass, pick up spores on their feet and carry them to new places. The stinkhorns are decomposers of organic matter including wood and manure. There are many types of stinkhorn from simple tubular structures to complicated ones with delicate skirts of netting.



Puffballs and earthstars are highly variable, from simple golf-ball-like structures to star-shaped forms and some that grow on stalks. One type, *Pisolithus*, can force its way up through bitumen roads. All burst or disintegrate to release their spores which are stored inside the structure. Many are important associates of plant roots, passing nutrients to the plant and receiving sugars in return.

Stalked-gilled fungi are the mushrooms (some edible species) and toadstools (not-edible) with which most of us are familiar. Most have gills (flat plates under the cap) on which the spores are produced and then drop down between the gills to be picked up in breezes and moved around to new growing sites. There are dozens of types of stalked-gilled fungi, in every colour and many different forms. Some are decomposers, some live in cooperation with plant roots and some are parasites.





Stalked-pored fungi also have stalks to raise the cap above the ground to assist in spore dispersal but they have pores beneath the cap instead of gills. Many are large and fleshy and some are brightly coloured. Many are associated with plant roots in a mutually agreeable relationship where the fungus passes minerals to the plant and the plant passes carbohydrates (made by photosynthesis) to the fungus.