

Because they reproduce themselves less commonly than. For fungi have extremely retiring habits. The vegetative (non-reproductive) part of the fungus is often just a tangle of minute tubes that wander in nutritive ground or gradually work their sinister way among the tissues of plants and sometimes animals. But at times the tangle of tubes or mycelium as botanists call this nondescript plant body will produce spores. In many species the spores are arranged on or enclosed in various fructifications of differing shapes, sizes and colours. These fructifications are the fungi we commonly see. The spores of fungi are microscopic but since they are produced with such enthusiasm the fructifications bearing them may be quite large. For instance, a mushroom may have a cap 3 inches across. This is estimated to produce 16,000,000,000 spores at the rate of 40,000,000 per hour, while the Giant Puff Ball, when it really "gets going" is good for seven billion spores. (N.B. The Editor has not personally checked these figures experimentally but they come from an absolutely reliable source).

The spores bearing parts, or fructifications suggest names appropriate to their various forms.

The Ascomycetes - the group discussed below - derive their name from a Greek word, askos, meaning a leathern bottle or wine skin - an allusion to the little sac in which the spores are contained. -mycetes is a frequent ending of the names of fungus groups, which is very understandable when we remember that it comes from the Greek, mukes, meaning a fungus. Pyrenomycetes comes from the Greek, pureus, a type of vessel, and mukes, while Discomycetes derives from the Greek, discos, something round or quoit-like. In both cases the name refers to the shape of the fructification.

SOME COMMON FUNGI

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Part I. The Ascomycetes.

The following are a few notes to help in the identification of some of the more common fungi found in the bush around Auckland. It must be remembered that there are a far greater number of species of fungi than there are of seed plants, but a large number of the species are microscopic and cannot be seen by the naked eye. In this article a few of the more conspicuous Ascomycetes are described. The fruiting bodies of most species included in this group are microscopic, but in some species may be several inches in length and in diameter. The sexually produced spores are formed in sac-like bodies called asci, but unfortunately these structures can be seen only under a microscope. The large species of the group can be divided into (a) the Pyromycetes, in which the asci are enclosed in a flask-shaped fruiting body called a perithecia, and (b) the Discomycetes in which the asci are arranged parallel to one another to form a superficial layer on the upper surface of a cup-shaped fructification called an apothecia, (A cushion-like body on or in which the spore-bearing parts are formed is known as a stroma.)

The Pyrenomycetes.

In the Pyrenomycetes one of the most interesting species is the vegetable caterpillar Cordyceps robertsii. The fruiting stroma is commonly found projecting a few inches above the ground; the vegetative part of the plant lives as a parasite on the larva of a moth that inhabits the leafmould layer of the forest floor - hence the name "vegetable caterpillar". The fungus mycelium completely replaces the tissue of the caterpillar and when mature produces a stalked fruiting body, usually from the head of the host, which penetrates above the ground. It is commonly found in tea-tree scrub, in tawa and kamahi forest. There are a number of other species of Cordyceps in New Zealand attacking other insects and spiders but none are as large as C. robertsii.

Hypocrella duplex, a closely related species to Cordyceps, parasitises scale insects and is common as small translucent cushions on the surfaces of leaves and stems of many shrubs and trees, in particular the nikau palm. This fungus completely smothers the host scale insects to form these translucent cushions; they are as large as $\frac{1}{2}$ inch in diameter and are often tuberculate with the fertile areas. Because the fungus completely masks the insect, its true nature was not appreciated and it was first described as a leaf parasite. There is only one species present in New Zealand but other species are common in other tropic and temperate countries.

Another group of Pyrenomycetes particularly common on dead fallen timber contains Daldinia, Hypoxylon, and Xylaria. Daldinia concentrica the only species in this genus present in New Zealand is extremely common; it occurs as black shiny globular fructifications, often over an inch in diameter. Although it appears to be more or less carbonaceous, it is easily broken and the concentric zones in the stroma will be seen, hence the name "concentrica". Species of Hypoxylon appear as flat shiny black growths tightly adhering to bark; sometimes they are more or less erumpent in the superficial layers of the bark. The stroma of this fungus consists of a large number of perithecia more or less united together to form an effuse mass. In Xylaria the perithecia are immersed in a stalked stroma; they are black, club-shaped, often several inches long and about $\frac{1}{8}$ to $\frac{1}{4}$ inch thick and occur either in clusters or in groups. In both these genera there are a number of species present in New Zealand but little is known about them.

The Discomycetes.

The Discomycetes are a more showy group. The flat disc-like apothecia varies from about $\frac{1}{8}$ inch to as much as 2 inches in diameter; some are bright and lightly coloured, usually translucent, a few are hairy, while others are quite leathery and drab coloured. They are common in the bush in the autumn, winter and spring. A description of a few of the larger and more common ones is given.

Chlorociboria aeruginosa. In this species the small apothecia is a characteristic vivid green colour. It is a stalked but more or less flattened disc about $\frac{1}{4}$ - $\frac{1}{2}$ inch in diameter; it occurs in the late autumn and winter on wood. The mycelium of this fungus discolours the wood on which it grows to give it a characteristic vivid green colour. It is a cosmopolitan species and in some countries this discoloured wood is used in making small ornaments.

Cookeina colensoi. This is a stalked cup, pale salmon in colour, $\frac{1}{2}$ - $\frac{3}{4}$ inch in diameter, the cup being $\frac{1}{4}$ inch deep. It is usually found in the late autumn or winter, on decorticated wood. The genus is a small one more or less limited in its distribution to the warm temperate and tropical countries. This species was first described from New Zealand material but has been found in other warm temperate countries.

Peziza aurantia. This cosmopolitan species produces a large orange cup, often found growing in the soil on newly formed clay roads. These cups form large colonies, often in clusters; each apothecia is shortly stalked and often several inches in diameter while the cup is $\frac{1}{2}$ - 1 inch deep. The outer surface is lighter coloured than the inside tissue.

Sarcosoma rhytida. Common on rotting logs. The apothecia are very large and fleshy, forming irregularly shaped flattened discs 1 - 3 inches in diameter often attached by a stout stalk and coloured a very drab black-brown. S.rhytida is particularly common on old tawa logs.

Scutellinia colensoi. This is the most common of all Discomycetes. It can be found during most seasons of the year. The apothecia are sessile, flattened discs $\frac{1}{2}$ - $\frac{3}{4}$ inch in diameter, orange in colour, translucent, with the outer margin covered with dark brown hairs.

Urnula melastoma is especially common on debris in tea-tree scrub. It is as much as 1 inch in diameter, cup-shaped, about $\frac{1}{4}$ - $\frac{1}{2}$ inch deep, black and very hairy, usually shortly stalked. It is particularly common in the early spring.

Cyttaria gunnii is found in association with galls on Nothofagus menziesii. This fungus also belongs to the Discomycetes. It is, of course, not found around Auckland. In the late spring and early summer its cream balloon-like fructifications are found in great numbers on the floor of the beech forests throughout New Zealand. The balloon-like fructification contains a number of apothecia united together to give a honeycomb appearance. This fungus is found associated with beeches in South America and Tasmania.

Morels are occasionally found in New Zealand but they are most ephemeral and are only met with if one is lucky enough to be in the bush when they are fruiting which is usually in the early autumn. The species have not yet been worked out and similarly it is not known whether or not they are edible.

CONGRATULATIONS

It is with very real pleasure that the Botanical Society notes the award of the Hector Medal to Mrs. Cranwell-Smith. A high honour indeed, has been bestowed upon her. Our Society has followed her career with interest and appreciation, and some members had the satisfaction of witnessing the presentation at the Annual Meeting of the Auckland Institute. Miss L. Moore discusses her services to Botany in our next issue.

Unfortunately Mrs. Cranwell-Smith is unable to stay long in New Zealand but members are hoping it may be possible to see her again at some meeting of our Society.