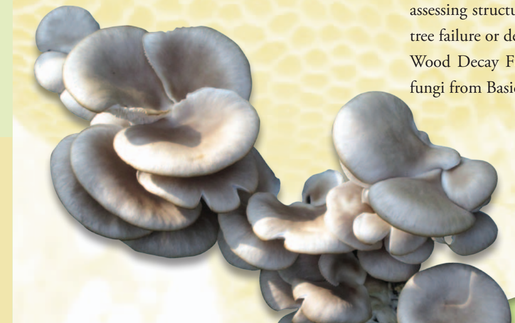
香港常見的
木材腐朽真菌
Common Wood Decay Fungi of Hong Kong

Herbarium Leaflet
植物標本室單張
F2

真菌由於能產生多種酵素以分解木材中複雜的分子結構，故此在生態系統中擔當著「木材分解者」的重要角色。除少數為子囊菌外，大部分的木材腐朽菌為擔子菌，主要屬於傘菌目、刺革孔菌目、多孔菌目或紅菇目。雖然真菌進行木質分解是大自然養分循環的一個自然過程，但此過程在城市中卻會引起嚴重問題。舉例說，木材腐朽菌可引致樹木木材的機械強度下降，受感染部份會較易折斷甚至被強風吹倒，從而造成人命傷亡或財物損失。故此，在評估樹木結構穩定性、預測樹木健康狀況或倒塌的可能性時，能及時準確辨認腐朽菌是非常重要的。繼首張「香港常見的木材腐朽真菌」單張後，此單張將介紹十種擔子菌門中的木材腐朽真菌給大眾認識。

Fungi serve an important ecological role as a wood decomposer which produces an array of enzymes with the unique ability to disintegrate complex molecules of wood. Except for a few Ascomycetes, most wood decay fungi are Basidiomycetes primarily belonging to Agaricales, Hymenochaetales, Polyporales and Russulales. Although degradation of wood by fungi is considered as a natural process of nutrient recycling in forest, their occurrence may pose serious threat in urban settings. Loss of mechanical strength caused by fungi can be linked to hazardous situations such as tree windthrow or limb failures, resulting in significant damage of property and injuries. Therefore, timely assessment and accurate identification of wood decay fungi are important for assessing structural stability and predicting the probability of tree failure or decline. Following the first leaflet of "Common Wood Decay Fungi of Hong Kong", ten more wood decay fungi from Basidiomycota will be introduced in this leaflet.



漁農自然護理署
Agriculture, Fisheries and Conservation Department

7 野生革耳
Panus rudis Fr.

分類 Classification :
多孔菌科，多孔菌目，擔子菌門
Polyporaceae, Polyporales, Basidiomycota

生境 Habitat :
在傷口、枯樹或樹樁上
On wound, dead trees or stumps

優美的紫色、多毛及扇形的菌蓋是這種真菌最好的辨認特徵。子實體有中生、偏生或側生的短柄，菌肉薄而堅韌。菌蓋呈扇形或楔形至不規則形，凸起，後期平展或凹陷，新鮮時淡紅色至紫紅色，顏色會隨著年齡的增長而褪至紫棕色至棕褐色，直徑2.5-10厘米，表面乾旱，被有濃密、粗糙、硬、如天鵝絨般的絨毛。菌褶延生，窄且稠密，邊全緣，呈白色、淺黃色、或與菌蓋的顏色相似。孢子無色或黃色，為光滑橢圓形狀，長5-7微米 × 寬2-3微米。

這種真菌通常成群生長在受損的樹木、枯木，或是在腐爛的樹樁上。有趣的是，雖然它的菌摺生長在菌蓋的底部，但根據脫氧核糖核酸（DNA）的分析，它卻是屬於多孔菌目的成員。事實上，還有一些多孔菌由於發生了「趨同進化」的關係而把菌蓋下演化成菌摺。據文獻記載，此真菌幼時可食，而子實體可以用來清洗皮膚，治療瘡疤等問題。

This mushroom is characterized by having a beautiful violet, hairy and fan-shaped cap. Fruiting body has a short, central, off-center or lateral stalk, and a tough and thin flesh. Capis fan-shaped or wedge-shaped to somewhat irregular in outline, convex becoming plane or depressed, reddish to purplish when fresh, fading to purplish-brown to tan with age, 2.5-10 cm in diameter, surface dry, covered with dense, coarse, stiff, velvety hairs. Gills are decurrent, close, narrow, edges entire, white, creamy, or colored like the cap. Spores are colorless or yellowish, smooth, elliptical, 5-7 µm long × 2-3 µm wide.

This mushroom grows usually in groups on damaged or dead wood or rotting stumps. It is interesting to note that although this mushroom has gills on the underside of the cap, it is still a polypore mushroom according to DNA analysis. There are actually some examples of "gilled" polypore which might have developed such character due to convergent evolution. According to the literature, this fungus is edible when young and the fruiting body has medicinal value of curing various skin problems.

8 側耳
Pleurotus ostreatus (Jacq.) P. Kumm.

分類 Classification :
側耳科，傘菌目，擔子菌門
Pleurotaceae, Agaricales, Basidiomycota

生境 Habitat :
在枯枝、傷口、枯樹或樹樁上
On wound, dead trees or stumps

側耳，俗稱「蠔菇」，是一種流行於世界各地的食用菇。子實體無柄或有柄，菌柄短而實心，為側生或有時中生，基部通常多毛或有絨毛。菌蓋白色、紫灰色、淡黃色或深灰色，蠔形或扇形，凸起，後期平展，或有時呈漏斗形，幼時邊緣向內捲起，後呈波浪或開裂。菌褶稍密，延生，白色或稍帶灰色，隨生長而變成淺黃色。孢子淡紫色或紫灰色，長圓形至橢圓形，光滑，長7-9微米 × 寬3-4微米。

這種真菌通常叢生在樹樁或倒木上，由於它與活樹上的裂縫及傷口有關聯，因此它的出現可作為樹木健康狀況不佳或下降中的指標。菌蓋的形態和顏色取決於子實體的位置。菌蓋在陽光下一般會比較深色；相對地，在陰暗的環境下，它的顏色較淡和蒼白。它也是一種「食線蟲真菌」，其菌絲能分泌有毒化學物質，使線蟲出現麻痺現象，然後分解及吸收線蟲身體。

This mushroom is commonly known as an oyster mushroom and has been popular throughout the world as an edible species. Fruiting body is either stemless or having short stalk which is solid, lateral or sometimes central, usually hairy or downy at least at base. Cap is white, violet-gray, yellowish or dark gray, oyster- or fan-shaped, convex becoming plane or sometimes funnel-shaped, margin usually inrolled when young, later wavy or lobed. Gills are fairly close, decurrent, white or tinged gray but often pale yellow in old age. Spores are pale lilac or lilac-gray, oblong to elliptical, smooth, 7-9 µm long × 3-4 µm wide.

The mushroom usually grows in clusters on stumps and fallen trunks, and associated with cracks, wounds on living trees. It is an indicator of poor or declining health. The morphology and color of the cap may be variable dependent on the location of the fruiting body. The cap is generally darker in sunlight and correspondingly paler in dim surroundings. The mushroom is also known as "nematophagus fungus", since its hyphae excrete toxic chemical to paralyze nematodes, and the hyphae resolve and absorb nematodes' body.

9 銀耳
Tremella fuciformis Berk.

分類 Classification :
銀耳科，銀耳目，擔子菌門
Tremellaceae, Tremellales, Basidiomycota

生境 Habitat :
在枯枝、枯樹或樹樁上
On dead branches, dead trees or stumps

銀耳呈柔軟膠質或果凍狀，一般在雨後出現。子實體無柄，濕時膠質狀，乾燥時硬如骨，白色或半透明白色，平滑而有光澤，通常由波浪狀或葉狀瓣片開裂及捲摺而成。孢子無色，卵圓形，光滑，長7-14微米 × 寬5-8.5微米。

銀耳會單獨或簇生在腐爛的木頭上。遇到長期乾燥的情況下會收縮，但當接觸到雨水後會立即膨脹，恢復原狀。它可能與炭團菌共生，亦可能寄生在炭團菌上。銀耳又稱為「雪耳」，是中國和日本的傳統滋補食品。

This fungus has a soft, gelatinous or jelly-like form and usually appears after raining. Fruiting body is stemless, gelatinous when moist, bone-hard when dry, white or translucent white, smooth and shiny, typically consisting of a complicated mass of wavy or leaf-like folds, lobes and convolutions. Spores are colorless, ovoid, smooth, 7-14 µm long × 5-8.5 µm wide.

This fungus grows solitary or in groups on rotten wood. It shrinks down under prolonged dryness but swells again after raining. It possibly lives either symbiotically with or parasitic on the mycelium of Hypoxylon. This fungus is also known as "snow ear" fungi and has been considered as a delicacy in China and Japan.

10 桂花耳
Dacryopinax spathularia (Schwein.) G.W. Martin

分類 Classification :
花耳科，花耳目，擔子菌門
Dacrymycetaceae, Dacrymycetales, Basidiomycota

生境 Habitat :
在枯枝、枯樹或樹樁上
On dead branches, dead trees or stump

鮮黃色膠質子實體是桂花耳的最大特色。子實體在基部長有圓柄，扁平向上生，扇形至匙狀，橙黃色至橙色，菌肉雖堅韌但為膠質。孢子無色，長橢圓形至香腸形，光滑，具橫隔，長9-11微米 × 寬4-5微米。

這種膠質真菌簇生或叢生在腐爛或脫皮的木上，引起木材褐色腐朽病，最後導致木的重量大幅減少。如發現此真菌的子實體，應為受感染部分進行修剪。有時，它會生長在木製扶手、圍欄或燈柱上，對人類活動造成額外的安全問題。

This fungus is characterized by the bright yellow and gelatinous fruiting body. Fruiting body has a rounded stalk at the base, flattened upward, and has an overall fan-shaped to spatula-shaped. It has a yellow-orange to orange color and the flesh is tough but gelatinous. Spores are colorless, elongated-elliptical to sausage-shaped, smooth, with a septum, 9-11 µm long × 4-5 µm wide.

This little jelly fungus grows in groups or clusters on decaying or decorticated woods. It causes brown rot in dead woods and results in substantial weight loss of wood. It is recommended to conduct pruning for the particular part colonized by fungal fruiting bodies. It sometimes grows out from the cracks of wooden railing, fence or lamp post, causing additional safety concern for human activities.

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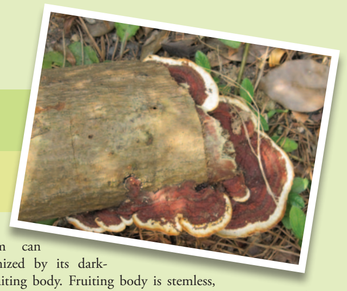
08/2013

1 粗硬春孔菌
Earliella scabrosa (Pers.) Gilb. & Ryvarden



分類 Classification :
多孔菌科，多孔菌目，擔子菌門
Polyporaceae, Polyporales, Basidiomycota

生境 Habitat :
於枯萎的樹幹、樹樁或倒木上
On dead trunks, stumps or fallen woods

暗紅色的架狀子實體是粗硬春孔菌的辯認特徵。未成熟的子實體無柄，扁薄，呈平伏狀或平展層反卷。成熟時形成明顯的菌蓋或呈層架狀，菌蓋暗紅色，並具白色至乳白色邊緣。菌孔面為白色至黃白色，菌孔角形至迷宮狀，單一菌孔可長達6毫米。孢子無色，圓柱形至長橢圓形，長7-10.5微米 × 寬3-4微米。

粗硬春孔菌是一種腐生真菌，一般生長在闊葉樹倒木或已枯萎的樹幹上，會引起木材白色腐朽。在一般情況下，子實體的出現不會對樹木的活體部分造成任何危害，但表示了該部分有潛在折斷或腐爛的可能。因此建議為受感染的枯枝或樹幹進行修剪。

This mushroom can easily be recognized by its dark-red shelf-like fruiting body. Fruiting body is stemless, thin, resupinate or effused-reflexed when young and it becomes distinctly pileateor shelf-like when mature. The cap is dark red with white to creamy margin. Pore surface is white to yellowish-white with pores in angular to maze-like shape. Individual pores may elongate up to 6 mm long. Spores are colorless, cylindrical to oblong ellipsoid, 7-10.5 µm long × 3-4 µm wide.

This is a saprophytic fungus which colonizes on fallen woods or dead trunks of broadleaf trees, causing white rot. In normal condition, presence of fruiting bodies will not cause any harmful effect on living trees but represents an increased potential for the colonized part to break or fail. Therefore, it is recommended to conduct pruning for the particular branch or trunks colonized by fungi.

2 金絲趨木菌
Xylobolus spectabilis (Klotzsch) Boidin

分類 Classification :
韌革菌科，紅菇目，擔子菌門
Stereaceae, Russulales, Basidiomycota

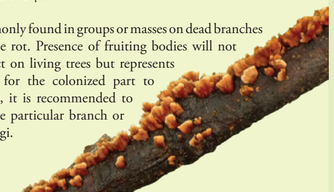
生境 Habitat :
於枯枝、枯萎的樹幹、樹樁、或倒木上
On dead branches, dead trunks, stumps, or fallen woods

金絲趨木菌的上表面為栗棕色，具有獨特的光澤，這些特徵讓人易於在野外發現其踪影。其子實體無柄，扁薄，革質，潮濕時肉質柔軟，乾後則萎得堅硬，子實體雖然是一年生，但長期可見。子實體菌蓋細小，弧形，列排疊生；部分為平伏生，蓋緣呈不規則狀。菌蓋表面為紅褐色至栗棕色，具有褐色絨毛及輻射狀皺紋，具不明顯的同心環帶，邊緣波浪狀及開裂；背面為淺棕色，表面平滑或稍為不平，亦有呈破裂狀。孢子無色，長橢圓形，光滑，長5-8微米 × 寬3.5-5微米。

金絲趨木菌可在枯枝或已枯的樹幹上簇生或大片生長，並引起木材白色腐朽。在一般情況下，子實體的出現並不會對樹木的活體部分造成有害的影響，但被感染的部分有潛在折斷或腐爛的可能。因此建議為受感染的枯枝或樹幹進行修剪。

This mushroom has a distinctively shiny and chestnut-brown upper surface that could be easily noticed in the field. Fruiting body is stemless, thin, leathery, flexible when moist, rigid when dry. Although the fruiting body is annual, it is persistent. Cap is small, bracket-like in overlapping rows or partially resupinate with a free margin, reddish-brown to chestnut-brown on upper surface, with brownish fine hair, radially wrinkled, zoned concentrically but faint, margin is wavy and lobed. The underside is light brown, smooth to slightly bumpy or cracked. Spores are colorless, oblong, smooth, 5-8 µm long × 3.5-5 µm wide.

This mushroom is commonly found in groups or masses on dead branches or trunks, causing white rot. Presence of fruiting bodies will not cause any harmful effect on living trees but represents an increased potential for the colonized part to break or fail. Therefore, it is recommended to conduct pruning for the particular branch or trunks colonized by fungi.



3 毛蜂窩菌
Hexagonia apiaria (Pers.) Fr.

分類 Classification :
多孔菌科，多孔菌目，擔子菌門
Polyporaceae, Polyporales, Basidiomycota

生境 Habitat :
於枯枝、枯萎的樹幹、樹樁、或倒木上
On dead branches, dead trunks, stumps, or fallen woods

菌蓋上表面又粗又硬的毛和背面的闊大蜂窩形菌孔，是此真菌最明顯的辨認特徵。子實體一年生，無柄，木栓質。菌蓋為深褐色至黑色半圓形，多毛，邊緣薄，具不明顯環紋，長4-20厘米 × 寬2.5-10厘米，厚3-6毫米。菌孔面橡色至棕色，略帶灰色，菌孔呈不規則排列蜂窩狀，每厘米3-4個。孢子無色，長橢圓形，光滑，長17.6-22微米 × 寬7.2-8.8微米。

此真菌生長在枯枝及枯幹上，特別常見於龍眼和荔枝樹上，所以又稱為「龍眼梳」，會引起木材白色腐朽。其出現代表該部位可能已腐爛或樹木健康開始衰退。因此建議為受感染的枯枝或樹幹進行修剪。據報導，此真菌可以食用，但味道略苦，也可以用作治療胃病和腸病的中藥。

This mushroom is characterized by its thick and stiff hair on the upper side and large hexagonal pores on the underside of the cap. Fruiting body is stemless, corky and annual. Cap is dark-brown to black, semi-circular, hairy, 2.5-10 cm broad and 4-20 cm wide and 3-6 mm thick, faintly zoned and with thin edge. Pore surface is hazel to brown with a greyish tint and irregularly arranged hexagonal pores, with 3-4 pores per cm. Spores are colorless, oblong, smooth, 17.6-22 µm long × 7.2-8.8 µm wide.

This is a common mushroom on dead branches and trunks, and prevalent on longan and litchi trees, causing white rot. Its occurrence may indicate the advanced decay on the particular trunk/branch or a general tree decline. Therefore, it is recommended to conduct pruning for the particular branch or trunk colonized by fungal fruiting bodies. It is reported to be edible but slightly bitter in taste. It may be used for medicinal purpose in curing problems of stomach or intestine.

4 漏斗多孔菌
Polyporus arcularius (Batsch) Fr.

分類 Classification :
多孔菌科，多孔菌目，擔子菌門
Polyporaceae, Polyporales, Basidiomycota

生境 Habitat :
於枯枝、枯萎的樹幹、樹樁、或倒木上
On dead branches, dead trunks, stumps, or fallen woods

漏斗多孔菌的子實體為有趣的漏斗狀，邊緣上長滿了細毛。子實體有柄，花瓶形，肉質堅韌。菌蓋漏斗形，中間凹陷，表面乾燥，長有細小的鱗片，呈黃褐色至黑褐色，邊緣長有明顯的絨毛。管孔面為白色或淡黃色，每毫米1-2個角形管孔或呈蜂窩狀。孢子光滑無色，圓柱形，長7-11微米 × 寬2-3微米。

這種真菌分佈廣泛，主要簇生於枯木上，會引起木材白色腐朽。在一般情況下，子實體的出現並不會對樹木的活體部分造成有害的影響，但被感染的部分有潛在折斷或腐爛的可能。因此，建議為受感染的枯枝或樹幹進行修剪。

This mushroom has an interesting funnel-shaped fruiting body and fine hairs at the margin. Fruiting body is stalked, vase-shaped and tough. Cap is convex with depressed center, dry, minutely scaly, yellowish-brown to dark brown and margin lined with conspicuous hairs. Pore surface is white or yellowish, with 1-2 angular or hexagonal pores per mm. Spores are colorless, smooth, cylindrical, 7-11 µm long × 2-3 µm wide.

This is a widespread mushroom which appears mostly in small groups on dead woods, causing white rot. Presence of fruiting bodies will not cause any harmful effect on living trees but represents an increased potential for the colonized part to break or fail. Therefore, it is recommended to conduct pruning for the particular branch or trunks colonized by fungi.

5 大孔多孔菌
Polyporus alveolarius (Bosc) Fr.

分類 Classification :
多孔菌科，多孔菌目，擔子菌門
Polyporaceae, Polyporales, Basidiomycota

生境 Habitat :
於枯枝、枯萎的樹幹、樹樁、或倒木上
On dead branches, dead trunks, stumps, or fallen woods

帶著鱗片的白色菌蓋及滿佈巨型蜂窩狀管孔的背面，是大孔多孔菌最顯著的辨認特徵。子實體有一條偏生或側生的短柄，新鮮時韌肉質，乾後變得堅硬。菌蓋半圓形至腎形，淡黃色，未成熟時平展及生有小鱗片，成熟時則變成乳白色，輕微下凹，光滑，邊緣波浪形或開裂。菌孔面乳白色或淡黃色，每厘米3-5個蜂窩狀菌孔。孢子光滑無色，圓柱形，長9-12微米 × 寬3-4.5微米。

這種真菌非常普遍，主要以簇生形式生長在枯木上，會引起木材白色腐朽。在一般情況下，子實體的出現並不會對樹木的活體部分造成有害的影響，但被感染的部分有潛在折斷或腐爛的可能。因此建議為受感染的枯枝或樹幹進行修剪。

The mushroom is conspicuous by its scaly white cap and large hexagonal-shaped pores on the underside. Fruiting body has a short, off-center or lateral stalk, tough when fresh and nearly rigid when dry. Cap is semi-circular to kidney-shaped, yellowish, plane and finely scaly when young, but becoming creamy white, slightly depressed and smooth when mature; margin often wavy or lobed. Pore surface is creamy white or yellowish, with 3-5 hexagonal pores per cm. Spores are colorless, smooth, cylindrical, 9-12 µm long × 3-4.5 µm wide.

This is a widespread mushroom which appears mostly in small groups on dead woods, causing white rot. Presence of fruiting bodies will not cause any harmful effect on living trees. However, it is recommended to conduct pruning for the particular part colonized by fungal fruiting bodies.

6 扇形小孔菌
Microporus flabelliformis (Fr.) Pat.

分類 Classification :
多孔菌科，多孔菌目，擔子菌門
Polyporaceae, Polyporales, Basidiomycota

生境 Habitat :
在枯枝、傷口、枯樹或樹樁上
On dead branches, wound, dead trees or stump

扇形小孔菌通常可在森林內的枯木上找到，從其薄薄的子實體上的環紋可輕易地把它辨認出來。子實體有一條偏生或側生的短柄，新鮮時肉質堅韌，乾後變得略硬。菌蓋為平展的半圓形至腎形，未成熟時或會有細鱗片，具黃褐色和紅褐色交替的同心環，邊緣通常呈淡黃色。管孔面乳白色或淡黃色，每毫米7-8個圓形管孔。孢子光滑無色，圓柱形，長4-6微米 × 寬1.5-2.5微米。

此真菌大多出現在枯枝或枯木上，並引起木材白色腐朽。在一般情況下，子實體的出現並不會對樹木的活體部分造成有害的影響，但被感染的部分有潛在折斷或腐爛的可能。因此建議為受感染的枯枝或樹幹進行修剪。

This mushroom is commonly found on dead woods in the forest and readily recognized by its thin fruiting body with banding pattern on the surface. Fruiting body has a short, off-center or lateral stalk, tough when fresh and nearly rigid when dry. Cap is semi-circular to kidney-shaped, plane or sometimes finely scaly when young, with alternating yellowish brown and reddish brown color on concentric rings, margin often yellowish. Pore surface is creamy white or yellowish, with 7-8 circular pores per mm. Spores are colorless, smooth, cylindrical, 4-6 µm long × 1.5-2.5 µm wide.

This is a widespread mushroom which appears mostly in small groups on dead branches or woods, causing white rot. Presence of fruiting bodies will not cause any harmful effect on living trees. However, it is recommended to conduct pruning for the particular part colonized by fungal fruiting bodies.