# 純黃白鬼傘

Leucocoprinus birnbaumii (Corda) Singer Flowerpot Parasol

### 分類 Classification:

蘑菇科,蘑菇目,擔子菌門 Agaricaceae, Agaricales, Basidiomycota

散生至群生於落葉、花盆或路旁花槽的泥土上 Scattered to numerous on leaf litter or soil of potted plant or roadside planter

辨認特徵: 菌蓋檸檬黃色, 闊3-5厘米, 初期鐘形, 後呈圓錐形至折平展,中央臍突形,表面帶有鱗片或 被有粉末,邊緣具條紋。菌褶密,離生,薄,奶黃 色。菌肉薄,黄色。菌柄檸檬黄色,長3-10厘米×粗 1-5毫米,修長但基部稍為膨大,平滑或覆有粉末, 菌環易碎,黃色,生於菌柄上部。孢子透明,光滑 橢圓形,長8-13微米×寬5.5-8微米,厚壁,頂端有

**臨床特徵:**此種菇類含有多種腸胃刺激物。病人通常 於進食後的6小時內出現腸胃炎型症狀,症狀類似典 型的食物中毒,例如腹痛、噁心、嘔吐和腹瀉等。病 人通常於數小時至數天內快速復原



辨認特徵:子實體初時以淡粉紅色或紫紅色蛋狀出 現,闊3-6厘米,近球形或卵形,外層之後破裂,釋

放菌蓋、海綿狀菌柄和一個大型的網狀菌裙(外菌 膜)。菌蓋圓錐形,覆有隆起的網格,外層佈滿有臭 味的深橄欖綠色的孢子液以吸引蒼蠅,頂端白色,中 央有一圓孔。外菌膜黃色至橙黃色,裙狀,網格多邊 形至圓形,在菌蓋邊緣展開,乾燥時脆弱。菌柄長 7-22厘米×粗15-25毫米,海棉狀,中空,表面有多 邊形坑狀網紋,白色、奶黃色至淡黃色,基部有粉紅 色至淡紅色包被。孢子無色、光滑、闊橢圓形至圓柱 形,長3-4微米×寬1.5-2微米,薄壁,基部常短截。

**臨床特徵**:此種菇類含有多種腸胃刺激物。病人通常 於進食後的6小時內出現腸胃炎型症狀,症狀類似典 型的食物中毒,例如腹痛、噁心、嘔吐和腹瀉等。病 人通常於數小時至數天內快速復原



Identification features: Cap is lemon-yellow, 3-5 cm broad, bellshaped, becoming conical to nearly flat with central knob, with scales or even powder on surface and striated margin. Gill is free, crowded, thin, yellowish cream. Flesh is yellow and thin. Stem is lemon-yellow, 3-10 cm long × 1-5 mm thick, slender, slightly enlarged at the base, smooth or powdery, with a fragile, collar-like yellow ring on upper stalk that often disappears. Spores are hyaline, smooth; elliptical, 8–13 µm long × 5.5–8 um wide, thick-walled, with a small apical pore.

Clinical features: This mushroom contains different kinds of gastrointestinal irritants. Onset of gastrointestinal symptoms is usually in less than 6 hours. The patient presents with a typical food poisoning syndrome such as abdominal pain, nausea, vomiting and diarrhea. Recovery is fairly fast and complete, usually from a few hours to several

# 黃硬皮馬勃

Scleroderma flavidum Ellis & Everh. Yellow Earthball

### 分類 Classification:

硬皮馬勃科, 牛肝菌目, 擔子菌門 Sclerodermataceae, Boletales, Basidiomycota

單生、散生或群生於土壤表面 Solitary, scattered or in group on soil

辨認特徵:子實體黃色至污黃色,闊2-10厘米,球 狀至近球狀,由繩索狀菌絲附著到基質上,外層厚實 堅硬,略為覆有鱗片及不規則地裂開。孢體初時呈紫 黑色,隨成熟變粉末狀。孢子深褐色,表面有刺,球 狀,直徑7-10微米。

**臨床特徵:**此種菇類含有多種胃腸道刺激物。腸胃炎 型症狀通常於進食後的6小時內出現。患者一般會出 現腸痛、噁心、全身刺痛,痙攣和肌肉僵硬等。病人 **通常於數小時至數天內快速復原** 

Identification features: Fruiting body is yellow to dirty yellow, 2-10 cm broad, globose to subglobose, attached to the substrate by cord-like mycelial threads, with a thick and tough outer layer, coarsely scaly and breaking open irregularly. Gleba purplish-black at first and becoming powdery when mature. Spores are dark brown, covered with spines, globose, 7–10 µm in diameter.

Clinical features: This mushroom contains different kinds of gastrointestinal irritants. Onset of gastrointestinal symptoms is usually in less than 6 hours. Symptoms may include abdominal pain, nausea, generalized tingling sensation, marked spasms and rigidity. Recovery is fairly fast, usually from a few hours to several days.



鄧銘澤博士 Dr. Alvin Tang

### 翻譯 Translation

朱佩玲、毛能之 Patty Chu, Neng-zhi Mao

## 圖 Photos:

鄧銘澤、林英豪、陳淑珊、蘇毅雄、馮寶儀、危令敦、簡偉發、祁惠明、蔡蕙文、王卓粵 Alvin Tang, Lam Ying Hoo, Suzanne Chan, Samson So, Bowie Fung, Ngai Ling Tun, David Kan, Daisy Ki, Raymond Choy, Chiky Wong

### 鳴謝 Acknowledgement

林英豪、陳淑珊 (醫院管理局毒理學參考化驗室) 提供相片

Lam Ying Hoo, Suzanne Chan (Toxicology Reference Laboratory, Hospital Authority) for providing photos

黃秀雯,陳建名 (1996) 臺灣毒蕈介紹。臺灣省政府農林廳臺灣省特有生物研究保育中心,南投縣

Benjamin, D.R. (1995). Mushrooms: poisons and panaceas: a handbook for naturalists, mycologists and physicians. Freeman and Company, New York.

Mckenzie, R. (2012). Australia's poisonous plants, fungi and cyanobacteria: a guide to species of medical and veterinary importance. CSIRO Publishing, Collingwood.

Turner, N.J., Szczawinski, A.F. (1991). Common poisonous plants and mushrooms of North America. Timber Press Inc.,

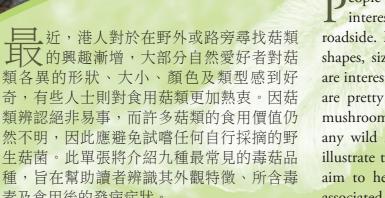
版權 ©2014 漁農自然護理署 香港植物標本室

©2014 Hong Kong Herbarium, Agriculture, Fisheries & Conservation Department. All Rights Reserved.

www.hkherbarium.net



Common Poisonous Mushrooms in Hong Kong



Deople in Hong Kong have recently showed increasing I interest in searching for mushrooms in the wild or by the roadside. Most nature lovers are curious about the myriad shapes, sizes, colors and forms of mushrooms, while others are interested in edibility of mushrooms. Because mushrooms are pretty difficult to tell apart and the edibility of many mushrooms is still unknown, people should never try tasting any wild mushrooms collected themselves. This leaflet will illustrate the nine most common poisonous mushrooms and aim to help readers identify those morphological features, associated toxins and onset of mushroom poisoning symptoms.

# 觀賞菇類應注意的事項:

素及食用後的發病症狀

Things to remember for appreciating mushrooms:

- 切勿在郊野公園或野外採摘菇類進食。因為菇類品種繁多,外觀特徵容易混淆,而且大部分菇菌品種 的食用價值不明
  - Do not eat mushrooms picked from country parks or natural environments. Mushroom species are extremely diverse, and their morphology is always ambiguous and the edibility is largely unknown.
- 切勿進食路邊種植範圍或市區公園採摘的菇菌。因為<u>這些地方的土壤可能含有重金屬、有毒污染物或</u> 殺蟲劑,使該些野菇受到污染。
  - Do not eat mushrooms from roadside planting areas or urban parks since planting soil may be contaminated with heavy metals, poisonous pollutants or pesticides.
- 不要根據坊間傳聞(如僅靠簡單的測試或外觀顏色)辨別該菇類是否可供食用。因為致命毒菇的顏 色往往是平平無奇的白色、黃褐色或褐色。
- Do not trust any folklore, such as simple tests or colors, for edibility. The deadly poisonous mushrooms are unremarkably white, yellow-brown or brown.
- 切勿進食任何未經徹底煮熟的菇類(包括在野外採摘及市場購買的)。未經煮熟的菇類內可含有一 些引致身體不適的化學物質,如聯氨類
- Do not eat raw mushrooms picked from the wild and in supermarket. Some chemical compounds in raw mushrooms, such as hydrazines, may make you sick.
- 許多同時具有膜質菌環、大型菌托或菌蓋覆有鱗片或疣點的菇類都有毒 Many mushrooms that have combined features of a membranous ring or large volva on the stalk, scales or warts on the surface of the cap are poisonous.
- 在野外觸摸任何菇類後,應徹底清潔雙手。 Wash your hands thoroughly after touching any mushrooms in the wild.
- 如進食菇類後身體不適,應盡快求醫,並建議患 者在求診時帶上未經烹煮的菇菌樣本。 If you experience symptoms of poisoning, consult

a doctor or go to a hospital immediately. Take the uncooked mushrooms with you and give them to your doctor.



Conservation Department



淡黃竹蓀 Phallus luteus (Liou & L. Hwang) T. Kasuya Yellowish Stinkhorn

## 分類 Classification:

鬼筆科,鬼筆目,擔子菌門 Phallaceae, Phallales, Basidiomycota

單生於地上,樹木或竹子下的腐殖質,特別是在剛竹屬、櫟屬或錐栗屬下 Solitary on the ground or humus under trees or bamboo, especially under Phyllostachys spp., Quercus spp. or Castanopsis spp.

**Identification features:** Fruiting body begins with a pale pink or reddish purple egg, 3-6 cm wide, subglobose to ovoid, later rupturing to release a cap, the spongy stem and a large net-like skirt (veil). Cap is conical, covered by a mesh of raised ribs coated in dark olive slime containing the spores that attracts flies by fetid odor, with a whitish disc and central hole at the top. Veil is yellow to yellowish-orange, skirt-like, meshes are polygonal to rounded, unfurled under the cap margin, fragile when dried. Stem is 7-22 cm long × 15-25 mm thick, spongy, hollow, surface reticulate with polygonal depressions, white, cream to pale yellow, with pink to reddish peridium at the base. Spores are hyaline, smooth, broadly ellipsoid to cylindric, 3-4 µm long × 1.5-2 µm wide, thin-walled, often truncate at base.

Clinical features: This mushroom contains different kinds of gastrointestinal irritants. Onset of gastrointestinal symptoms is usually in less than 6 hours. The patient presents with a typical food poisoning syndrome such as abdominal pain, nausea, vomiting and diarrhea. Recovery is fairly fast and complete, usually from a few hours to several

03/2014

## 致命白鵝膏

Amanita exitialis Zhu L. Yang & T.H. Li Guangzhou Destroying Angel

分類 Classification:

鵝膏科,蘑菇目,擔子菌門 Amanitaceae, Agaricales, Basidiomycota

生境 Habitat:

散生或群生於闊葉樹下的土壤表面 Scattered or in group on soil under broadleaf tree

辨認特徵: 菌蓋白色,闊4-7厘米,凸面至近平展,有時奶油色的中央會輕微下陷,平滑,邊緣不具長條紋。菌褶密,離生,淡白色。菌柄淡白色,平滑,有時帶有細小的纖維質鱗片,長7-9厘米×粗5-10毫米,近圓柱形或稍為向上逐漸變細。基部近球狀,寬1-2厘米。菌托薄,膜質,邊界分明,可達7毫米高,兩面白色。菌環膜質,白色,生於菌柄上部,持續或短暫存在。孢子無色,光滑,球狀,長9.5-12微米× 寬9-11.5微米,薄壁。

**臨床特徵:**此種菇類含有著名的鵝膏毒素。中毒症狀分三階段出現。初期──誤食6至24小時後會出現腸胃炎症狀,症狀包括口乾、噁心、嘔吐、腹部劇痛、腹瀉(通常便中帶血及黏液)等。中期──約24小時後,這些症狀會暫時緩解,進入2-4天的「假痊癒期」。後期──患者會進入最嚴重的中毒階段,肝及腎臟出現衰竭現象,若不處理,患者可能在7-10天內死亡。



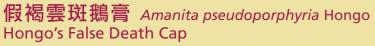
辨認特徵:菌蓋淡灰色至灰褐色,闊4-12厘米,上部凸起至近平展,中央部分顏色較深,被有纖毛,無毛或附有少許污白色的膜質殘餘物,邊緣平滑,常有殘餘物懸掛在邊緣。菌褶密,離生,薄及白色。菌肉白色及薄。菌柄白色,長8-13厘米×粗5-20毫米,基部稍為膨大,被白色纖毛狀及粉末狀鱗片覆蓋。菌托薄,膜質,邊界分明,可達5毫米高,外表面白色至污白色,內表面白色。菌環生於菌柄頂部至近上部,白色,易碎,持續或短暫存在。孢子無色,光滑,闊橢圓形至橢圓形,長(6.0-) 7.0-9.0 (-10.5)微米×寬(4.5-) 5.0-6.5 (-7.5)微米,薄壁。

**臨床特徵**:此種菇類含有正白胺酸毒素病人於進食後最少12小時後出現腸胃炎型症狀。有時,發病時間可延遲至數日以至數週。發病後期出現尿頻、劇渴、面部浮腫、及急性腎功能衰竭。



**Identification features:** Cap is white, 4–7 cm broad, convex to nearly flat, sometimes slightly depressed at the center with creamy color, smooth and margin is non-striate. Gill is free, crowded and whitish. Stem is whitish, smooth, sometimes with fibrous small scales, 7–9 cm long  $\times$  5–10 mm thick, roughly cylindrical or slightly tapering upward. Bulb is roughly spherical and 1–2 cm wide. Volva is thin, membranous, with distinct edge, up to 7 mm in height, and both surfaces are white. Ring is membranous, white, on upper stalk, persistent or fugacious. Spores are hyaline, smooth, spherical, 9.5–12µm long  $\times$  9–11.5 µm wide, thin-walled.

Clinical features: This mushroom contains the famous Amatoxins. Poisoning symptoms occur in three distinct stages. Onset of gastrointestinal symptoms is usually 6 to 24 hours after ingestion. Symptoms include: dry mouth, nausea, vomiting, sharp abdominal pains, diarrhea (often with blood and mucus), etc. After about 24 hours, these symptoms may be followed by a period of false recovery lasting for 2-4 days. This will be followed by the most serious stage of intoxication, with evidence of liver and kidney failure. This may lead to death in 7-10 days if left untreated.



分類 Classification:

鵝膏科,蘑菇目,擔子菌門 Amanitaceae, Agaricales, Basidiomycota

生境 Habitat:

散生或群生於闊葉樹下的土壤表面 Scattered or in group on soil under broadleaf tree

**Identification features:** Cap is greyish to grey-brown, 4–12 cm broad, convex to nearly flat, darker in the center, innately fibrillose, and glabrous or covered with a few dirty white, membranous remnants, margin is smooth, often with remnants hanging on the margin. Gills are free, crowded, thin and white. Flesh is white and thin. Stem is white, 8–13 cm long × 5–20 mm thick, slightly enlarged at the base, covered with white fibrillose to farinose squamules. Volva is thin, membranous, with distinct edge, up to 5 cm in height, outer surface is white to dirty white, while the inner surface is white. Ring is apical to subapical, white, fragile, persistent or fugacious. Spores are hyaline, smooth, broadly ellipsoid to ellipsoid, (6.0–) 7.0–9.0 (–10.5) µm long × (4.5–) 5.0–6.5 (–7.5) µm wide, thin-walled.

Clinical features: This mushroom contains at least the toxin allenic norleucine. Onset of gastrointestinal symptoms is at least 12 hours after ingestion. Sometimes, delay in onset is often much longer, from many days to even weeks. This is followed by the development of increased frequency of urination, intense thirst, facial edema and acute renal failure.

## 綠褶菇

Chlorophyllum molybdites (G. Mey.) Massee Green-gilled Parasol

分類 Classification:

蘑菇科,蘑菇目,擔子菌門 Agaricaceae, Agaricales, Basidiomycota

上境 Habitat

單生、散生、群生或形成磨菇圈於草地或草坪表面 Solitary, scattered, gregarious or in rings on grass or lawn

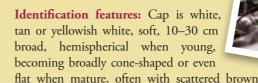
**辨認特徵:**菌蓋白色、古銅色或黃白色,柔軟,闊 10-30厘米,初期半球狀,隨成熟變為闊圓錐狀,甚至扁平,中部常密佈褐色鱗片。菌褶離生,幼時呈白色,後呈灰色至深綠色。菌肉白色,受傷處呈黃褐色,向基部漸變為淡褐色。菌柄白色,略帶褐色,表面光滑,堅實,基部略為膨脹,具可移動雙層大菌環。孢子綠色,橢圓形,光滑,長8-13微米×寬6.5-9 微米。

**臨床特徵**:此種菇類含有多種腸胃刺激物。病人通常於進食後的6小時內出現腸胃炎型症狀,症狀類似典型的食物中毒,例如腹痛、噁心、嘔吐和腹瀉等。病人通常於數小時至數天內快速復原。



辨認特徵: 菌蓋黃褐色或古銅色,通常中央部分顏色較深,闊1-2.5厘米,橢圓至圓柱形,但開展後呈鐘形,初期表面覆有白色或淡白色晶體,但這些晶粒在後期容易被沖走,溝棱紋由邊緣至中央。隨著年齡增長,這些溝棱會從底部裂開,最後溶化成墨汁狀,將孢子釋放出來。菌褶密,離生,初期白色,後轉變為深褐色,最後呈黑色。菌柄長4-10厘米×粗2-5毫米,中空,光滑或覆有粉末。孢子紅褐色,橢圓形或杏仁形,長7-10微米×寬4.5-6微米。

**臨床特徵:**此種菇類含有一些氨基酸衍生物如鬼傘素,這些化學物質會干擾人體的酒精代謝功能。因此,此菇菌的毒性只有在酒精存在下才引致進食者發病,症狀通常於30分鐘內出現,一般維持約兩小時。如果在毒發後的數天內再喝含酒精的飲品,患者可能會再次復發。主要的症狀可能包括臉和脖子發紅、胸部疼痛、出汗、心跳加速、低血壓、手腳腫脹、口部有金屬味、噁心、嘔吐,視覺障礙和頭暈等。



scales concentrated at the center. Gill is free from the stem, white when young, becoming gray to dark greenish when mature. Flesh is white, bruising yellow-brown, staining brownish toward the base. Stem is whitish, often tinged with brown, smooth, firm, slightly bulbous at the base, with a large movable double-edged ring. Spores are green, elliptical, smooth, 8–13  $\mu m \log \times 6.5–9 \ \mu m$  wide.

Clinical features: This mushroom contains different kinds of gastrointestinal irritants. Onset of gastrointestinal symptoms is usually in less than 6 hours. The patient presents with a typical food poisoning syndrome such as abdominal pain, nausea, vomiting and diarrhea. Recovery is fairly fast and complete, usually from a few hours to several days.

# <mark>晶粒鬼傘 Coprinellus micaceus (</mark>Bull.) Fr. Glistening Inky Cap

分類 Classification:

小脆柄菇科,蘑菇目,擔子菌門 Psathyrellaceae, Agaricales, Basidiomycota

境 Habitat

樹椿周圍或闊葉樹林或木片覆蓋物上大量群生

Gregarious around stumps or logs of broadleaf trees or woodchip mulch

Identification features: Cap is yellow-brown or tan, often with a darker center, 1–2.5 cm broad, oval to cylindrical, but expands to become bell-shaped, surface is covered with white or whitish shiny particles when young, but the particles are easily washed away in age, the margin is prominently grooved almost all the way to the center. As the mushroom grows older, the grooves split open from the bottom and eventually melt into inky liquid and spores discharged. Gill is free, crowded, initially white in color, becoming dark brown and eventually black. Stem is 4–10 cm long and 2–5 mm thick, more or less equal throughout the length, hollow, smooth or powdery. Spores are reddish brown, oval or almond-shaped, 7–10 μm long × 4.5–6 μm wide.

Clinical features: This mushroom contains some amino acid derivative such as coprine, which interferes with the body's alcohol metabolism. This toxic effect takes place only in the presence of alcohol and onset of symptoms is usually within 30 minutes and lasts about 2 hours. A recurrence may be experienced if alcohol is taken again within the next few days. Major symptoms may include flushed face and neck, chest pains, sweating, rapid heartbeat, low blood pressure, feeling of swelling in hands and feet, metallic taste in the mouth, nausea, yomiting, visual disturbance and dizziness.



*Gymnopilus aeruginosus* (Peck) Singer Magic Blue Gym

分類 Classification:

球蓋菇科,蘑菇目,擔子菌門 Strophariaceae, Agaricales, Basidiomycota

生境 Habitat:

樹椿或木片覆蓋物上大量群生或叢生 Gregarious to caespitose on stumps and woodchip mulch

辨認特徵:菌蓋初時暗藍綠色、黃色、鮭肉色及紅色,隨年齡增長變為暗黃色或暗黃帶粉紅色,鱗片淡紅色至深褐色。菌褶彎生至直生,或稍延生,密,暗黃色至橙黃色或土黃色。菌肉淡白色或略帶藍色。菌柄長2-3厘米×粗2-7毫米,綠褐色,光滑或生有纖毛及乾燥。孢子鏽色,具疣點,橢圓形,長6-9微米× 寬3.5-4.5微米。

**臨床特徵:**此種菇類含有裸蓋菇鹼和其他不明的神經毒素,令食用者出現幻覺。中毒症狀通常於進食後的1小時內出現。初期症狀包括嗜睡、頭痛、感覺麻木、肌肉無力、噁心、腹痛及瞳孔散大等。隨後,患者出現視覺影響和視象扭曲、無法控制地笑及出現幻覺。大約1-2個小時後,幻覺效果增強,包括視覺和時間感錯亂。大約2-4個小時後,症狀會逐漸減弱,但少數人可能仍會感到頭痛或疲勞。

辨認特徵: 菌蓋草黃色至黃褐色, 闊2-10 厘米, 圓錐

形或鐘形,頂部突出,覆有絲質纖毛,後呈輻射狀開

裂。菌褶彎生或直生,初期淡黃色,成熟後轉為淡褐

色。菌肉白色。菌柄長3-10厘米×粗4-12毫米,上端

白色,往下呈淡暗黃色,基部稍為膨大。孢子胡桃褐

**臨床特徵:** 此種菇類含有毒蕈鹼。中毒症狀一般於短

時間內出現,患者通常於進食後30分鐘至2小時內發

有時,症狀可能包括流涎、流淚、排尿、排便、腸胃

不適和嘔吐(SLUDGE綜合症)等。部分患者還可能

伴有其它症狀,包括視覺模糊、瞳孔收縮、血壓下降

導致的頭暈及脈率明顯下降等。死亡率估計為5%。

病。症狀包括出汗、流涎及流淚(PSL綜合症)等。

色,光滑,豆形,長9-12微米×寬4.5-7微米



**Identification features:** Cap is dull bluish-green, yellow, salmon and red, becoming buff or pinkish-buff in age, with scales reddish to dark brown. Gill is adnexed to adnate or slightly decurrent, close, buff to yellow-orange or ochre. Flesh is whitish or tinged blue or green. Stem is 2–3 cm long × 2–7 mm thick, more or less equal, greenish-brown, smooth or fibrillose and dry. Spores are rusty, warted, ellipsoid, 6–9  $\mu$ m long × 3.5–4.5  $\mu$ m wide.

Clinical features: This mushroom contains some psilocybin and other unknown neurotoxic substances that cause hallucination effects. Onset of symptoms is usually within an hour of ingestion. Initial symptoms may include drowsiness, headache, a feeling of numbness, muscular weakness, nausea, abdominal pain and dilated pupils. This will be followed by onset of visual effects and distortions, uncontrollable laughter and hallucination. After about 1–2 hours, the effects of hallucination become intensified, including distortion of visual and time sense. After 2–4 hours, there will be gradual reduction of symptoms, but a few people may still have headaches or fatigue.

# 裂絲蓋傘 *Inocybe rimosa* (Bull.) P. Kumm. Cracked Inocybe

分類 Classification:

絲蓋傘科,蘑菇目,擔子菌門 Inocybaceae, Agaricales, Basidiomycota

生境 Habitat:

散生或群生於闊葉樹下的土壤表面 Scattered or in group on soil under broadleaf tree

**Identification features:** Cap is straw-yellow to yellowish-brown, 2–10 cm broad, conical or bell-shaped with prominent umbo, covered with silky fibers and becoming radially separated. Gills are adnexed or adnate, yellowish and becoming brownish in maturity. Flesh is white. Stem is 3–10 cm long  $\times$  4–12 mm thick, white at apex, pale buff below and slightly enlarged at the base. Spores are walnut-brown, smooth, bean-shaped, 9–12  $\mu m$  long  $\times$  4.5–7  $\mu m$  wide.

Clinical features: This mushroom contains the toxin muscarine. Onset of muscarine symptoms is usually rather short, from 30 minutes to 2 hours after ingestion. Symptoms may include perspiration, salivation, and lacrimation (PSL syndrome). Sometimes, symptoms may include a combination of salivation, lacrimation, urination, defecation, gastrointestinal distress and emesis (SLUDGE syndrome). A number of other manifestations may also be associated: blurred vision with constricted pupils, dizziness due to a fall in blood pressure and a decidedly slow pulse rate. A mortality rate of about 5% has been estimated