Two Species of Hypogeous Gasteroid Fungi (Basidiomycota) New to Taiwan

二種腹菌類(擔子菌)的台灣新記錄

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Abstract

Two species of hypogeous gasteroid fungi are described and illustrated as new records in Taiwan. They are *Descomyces albellus* and *Gymnoglossum connectens*.

摘　要

本文描述二種腹菌類的台灣新記錄種。它們分別爲小白似圓頭傘腹菌(*Descomyces albellus*) 及連體裸腹菌(*Gymnoglossum connectens*)。

Key words: false truffles, gasteromycetes, hypogeous fungi.

關鍵詞：假松露，腹菌，地下眞菌

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Introduction

The hypogeous gasteroid basidiomycetes, known as “false truffles” (Dodge & Zeller, 1934), usually inhabit under or on soil surface surrounding Fagaceous and Pinaceous trees. Traditionally, the truffle-like basidiomycetes were placed in the taxonomical class Gasteromycetes, but are now found to be actually closer to different agaricoid groups (Peinter et al. 2001). As such, the taxonomical term “gasteromycetes” is no longer valid. Two species of hypogeous gasteroid fungi, *Rhizopogon rubescens* and *Hymenogaster arenarius*, are reported in Taiwan (Chou, 2011). Two additional hypogeous species, *Descomyces albellus* and *Gymnoglossum connectens* are found, thus described and illustrated as new records in this paper. Specimens are deposited at the Herbarium of National Museum of Natural Science, Taiwan (TNM).

Taxonomy

Descomyces albellus (Massee & Rodway) Bougher & Castellano, Mycologia **85**(2): 282, 1993. (Fig. 1-3)
≡ *Hymenogaster albellus* Massee & Rodway, in Massee, Bull. Misc. Inf., Kew: 126, 1898.

Fruit bodies 2–3 cm wide and 1-1.5 cm tall, irregularly tuberous, exoperidium smooth, whitish, spotting gray-red when handled. **Gleba** grayish red-yellow to ochraceous-brown, gleba chambers irregularly daedaleoid. **Spores** broadly fusiform to obovoid, yellowish, smooth or slight roughened, apiculate, bearing a large, cup-like hilar appendix, with irregular, wrinkled utricle, 15-18× 6.5-8 μm (not counting the utricle). Hyphae with clamps.

Habitat: Hypogeous under *Cyclobalanopsis glauca* tree.

Specimen examined: Nantou: Hoshe (和社), 120°53' E, 23°36' N, elev. 780 m, W. N. Chou, CWN 11030, Nov. 17. 2015.

Distribution: Southern hemisphere, Australia (Bougher and Castellano, 1993), Brazil (Giachini *et al.*, 2000)

Notes: *Descomyces* can be separated from *Hymenogaster* by having distinctive spore morphology and characteristic peridium structure (Bougher and Castellano, 1993). In Australia, this species is very commonly associated with *Eucalyptus* trees (Dodge & Zeller, 1934; Bougher & Castellano, 1993; Liu, 1998). *Descomyces* is phylogenetically related to *Descolea*, thus was placed either in Cortinariaceae or Bolbitiaceae by different researches (Peinter *et al*. 2001, Tóth *et al*. 2013).

Gymnoglossum connectens (Bucholtz) Zeller, Mycologia 40(6): 643, 1948. (Fig. 4-6)
≡ *Dendrogaster connectens* Bucholtz, Hedwigia 40: 316, 1901.

Fruit bodies 2–4 cm wide and 1-3 cm tall, subglobose, exoperidium smooth, gray-brown. **Gleba** grayish red-brown to brown-black, gleba chambers irregularly oblong. **Spores** oblong-ellipsoid, yellowish brown, smooth, with irregular, apparently, saccate utricle, short-apiculate, with narrow base, 20-25 × 8-10 μm. Basidia capitate, 24-28× 7-8 μm, with two sterigmata. Hyphae without clamps.

Habitat: Hypogeous under Fagaceae tree.

Specimen examined: Nantou: Lienhwachih (蓮華池), 120°53' E, 23°56' N, elev. 700 m, W. N. Chou, CWN 09892, May 25. 2011.

Distribution: Europe, Russia (Smith, 1966).

Notes: This species is similar to *Descomyces albellus* superficially. However, it differs in having larger spores with a prominent utricle (Dodge & Zeller, 1934; Smith, 1966).

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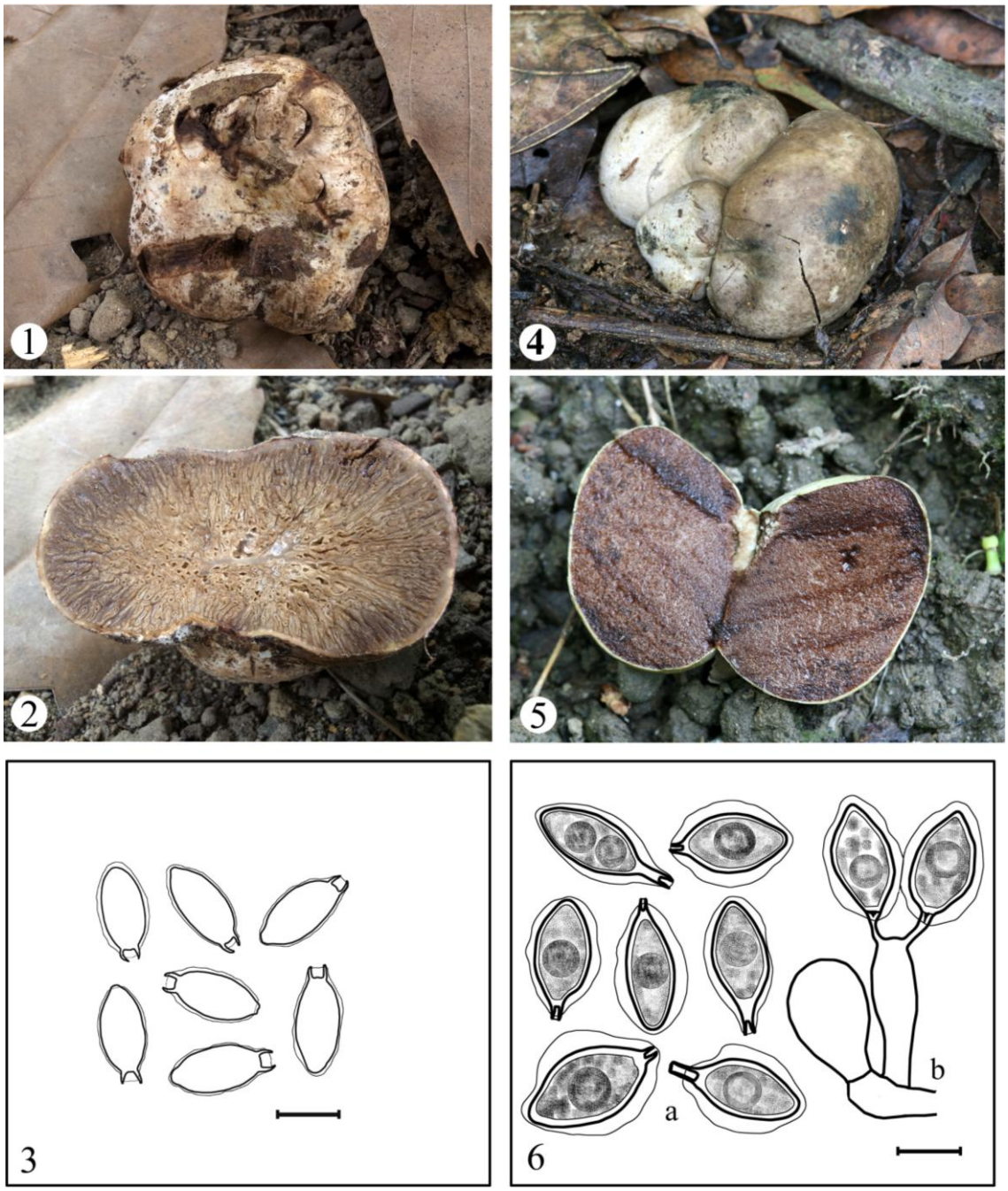

Fig. 1-3. *Descomyces albellus.* **1:** fruit body, **2:** section, **3:** baisidiospores.

Fig. 4-6. *Gymnoglossum connectens.* **4:** fruit body, **5:** section, **6:** baisidiospores (a) and basidia (b).

Bars=10μm