

# *Hypocrea cornu-damae* (Hypocreales, Ascomycota), Newly Recorded Species in Taiwan

## 臺灣子囊菌新記錄種－火焰茸

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### Abstract

A saprophytic and poisonous fungus, *Hypocrea cornu-damae* (Hypocreaceae, Ascomycota) is reported from Taiwan for the first time. The morphological description, illustration, and habitat of this species are provided in this study.

### 摘要

本文描述一種臺灣子囊菌新記錄種－火焰茸 (*Hypocrea cornu-damae*)，為腐生性有毒真菌，文中提供形態描述、圖版、棲地及引證標本等。

**Key words:** Poisonous fungi, Ascomycota, Hypocreaceae

**關鍵詞：**毒菌、子囊菌、肉座菌科

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## Introduction

*Hypocrea cornu-damae* is a rare species of fungus belonging to the Hypocreaceae. Its fruit body is highly toxic. Several fatal cases of poisoning by *H. cornu-damae* have been reported in Japan (Saikawa *et al.*, 2001) and Korea (Ahn *et al.*, 2013), however no such case has ever been reported in Taiwan. *Hypocrea cornu-damae* was

first discovered in China, described and assigned under *Hypocrea* by Patouillard (1895), and later transferred to the genus *Podocrea* (Saccardo and Saccardo, 1905), before being placed under the genus *Podostroma* (Boedijn, 1934). Chamberlain *et al.* (2004) synonymized *Podostroma* with *Hypocrea*. This paper briefly describes its characteristics with illustrations and provides information on its habitats and distribution.

## Taxonomic Treatment

*Hypocrea cornu-damae* Pat., Bull. Soc. Mycol. France 11: 198. 1895.

=*Podocrea cornu-damae* (Pat.) Sacc. & D. Sacc., Sylloge Fungorum 17: 799. 1905.

=*Podostroma cornu-damae* (Pat.) Boedijn, Bull. Jard. Bot. Buitenzorg, ser. 3, 13: 274. 1934.

Fig. 1

Stromata simple and cylindrical to narrowly clavate or branched dichotomously, 6–10 cm tall, 0.7–1 cm broad, sometimes several cylindrical stromata arising from a common base, orange, surface glabrous, smooth, perithecia elevations not visible, perithecial papilla barely protruding through stroma surface, ostiola openings appearing as minute white dots. Surface region of stroma ca. 40  $\mu\text{m}$  thick in section of intertwined thin-walled hyphae, 3–4  $\mu\text{m}$  wide. Perithecia subglobose, 220–250  $\times$  120–200  $\mu\text{m}$ . Tissue below perithecia composed of intertwined hyphae, 9–13  $\mu\text{m}$  wide. Asci cylindrical, 65–81  $\times$  3.5–4.5  $\mu\text{m}$ , apex thickened. Ascospores hyaline, finely

spinulose, distal part subglobose to slightly conical, 3.4–4.2  $\times$  3.2–3.5  $\mu\text{m}$ , proximal part ellipsoidal to subglobose, 3.5–4.4  $\times$  3.3–3.6  $\mu\text{m}$ .

Habitat: Growing on the ground, solitary to scattered under broad-leaved trees.

### Distribution:

China, Japan, Korea (Patouillard, 1895; Doi, 1967; Ahn *et al.*, 2013). New to Taiwan.

Specimen examined: Taitung County: Tienchih (天池), Orchid Island, ca. 450 m in elevation, 22°01'11" N, 121°30'34" E, 11 February 2011, T. C. Lin 569.



**Fig.1.** *Hypocrea cornu-damae* Pat. A: Clavate stromata; B. Vertical section of perithecia; C. An ascus; D. Ascospores

**Remark :**

*Podostroma* was proposed for members having stipitate, clavate, erect, fleshy and bright colored stromata in the Hypocreaceae (Karsten, 1892), Chamberlain *et al.* (2004) synonymized *Podostroma* with *Hypocrea*, mainly based on anamorphic morphology of *H. alutacea* (Pers.) Tul. & C. Tul. and *H. leucopus* (P. Karst.) H. L. Chamb. Jaklitch *et al.* (2008) based upon *rpb2* sequences showed that the type species of *Podostroma*, *P. leucopus* P. Karst., and the type species of *Podocrea*, *P. alutacea* (Pers.) Lindau, are unequivocal members of the genus *Hypocrea*. The results corroborate that the synonymization of *Podocrea* and *Podostroma* with *Hypocrea* (Chamberlain *et al.*, 2004) is correct. Ten species of *Hypocrea* have been reported from Taiwan (Wang *et al.*, 1999; Chang and Wang, 2008). They all have pulvinate and broadly attached stromata, while *H. cornu-damae* is the first recorded species having stipitate and clavate stromata in Taiwan, and the locality recorded on Orchid Island, Taiwan, is the southernmost locality for this species. The ascospores of this species are described as smooth by Boedijn (1934), but Patouillard (1895) described those are very finely spinulose.

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