

## **A new species of *Corynesporella* and two new records from southern China**

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**Abstract** – Three taxa of dematiaceous hyphomycetes with tetric conidiogenous cells, *Corynesporella cinnamomi* sp. nov., *Dendryphion comosum* and *Tretospeira ugandensis*, are described and illustrated from plant debris in natural areas from the tropical forests of southern China. All are first records for China.

***Dendryphion comosum* / Mitosporic fungi / systematics / taxonomy / *Tretospeira ugandensis***

### **INTRODUCTION**

Southern China spans several climate zones and covers much tropical and subtropical forest ecosystems. It is a unique geographical area which has complex terrains and notable elevation difference. The seasonal marine monsoon in this region is strongly conducive to the development and distribution of various plants and fungi. The tropical forests of southern China are the rich habitat for anamorphic fungi (Yang et al. 2011, Su et al. 2011, Zhao et al. 2010), and many wood-inhabiting species collected in this region have recently been published (Dai et al. 2009, Dai & Li 2010). During our continuing surveys of conidial fungi of decaying plant materials in tropical forests of southern China, three interesting fungi were collected. Among them, *Corynesporella cinnamomi* are described as new for science. *Dendryphion comosum* and *Tretospeira ugandensis* are first records for China.

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## MATERIALS AND METHODS

Dead branches are a rich habitat for hyphomycetes. Pieces of submerged plant material were placed in separate paper bags and taken to the laboratory, then incubated in Petri dishes with 200 ml sterile water plus 2 ml glycerol at 27°C in an RXZ-260A Artificial Climate Box. The plant material was examined at regular intervals for the presence of microfungi. Microscopic measurements were calculated on the basis of 50 mature conidia and 30 conidiophores. Micrographs were obtained with an Olympus BX51 microscope. The studied specimens were deposited in the Herbarium of the Department of Plant Pathology, Shandong Agricultural University (HSAUP) and Mycological Herbarium, Institute of Microbiology, Chinese Academy of Sciences (HMAS).

## TAXONOMY

*Corynesporella cinnamomi* Y.D. Zhang & X.G. Zhang, sp. nov. Figs 1-5

*Mycobank* MB 561158

*Etymology*: The epithet refers to the host *Cinnamomum ilicioides* A.Chev., from which the taxon was isolated

*Coloniae effusae in substrato naturali, atrobrunneae, pilosae. Mycelium partim superficiale et partim in substrato immersum, ex hyphis ramosis, septatis, pallide brunneis, laevibus, 2-3 µm crassis compositum. Conidiophora macronematica, mononematica, singula, erecta, ramosa ad apicem, recta vel leviter flexuosa, brunnea vel atrobrunnea, usque 500 µm longa, 7-10.5 µm crassa, saepe basi ad 8-12 µm inflata. Cellulae conidiogenae monotreticae, integratae, terminales, per proliferationes percurrentes successivas, determinatae, laeves, discretae, brunneae, cylindrica vel subcylindrica, 7-18 × 3-7 µm. Conidia solitaria, sicca, acrogena, obclavata, 3-5-distoseptata, laevia, brunnea, cellula apicali pallide brunnea, 31.5-52 µm longa, 4.5-10 µm crassa, apicem versus ad 2-3 µm attenuata.*

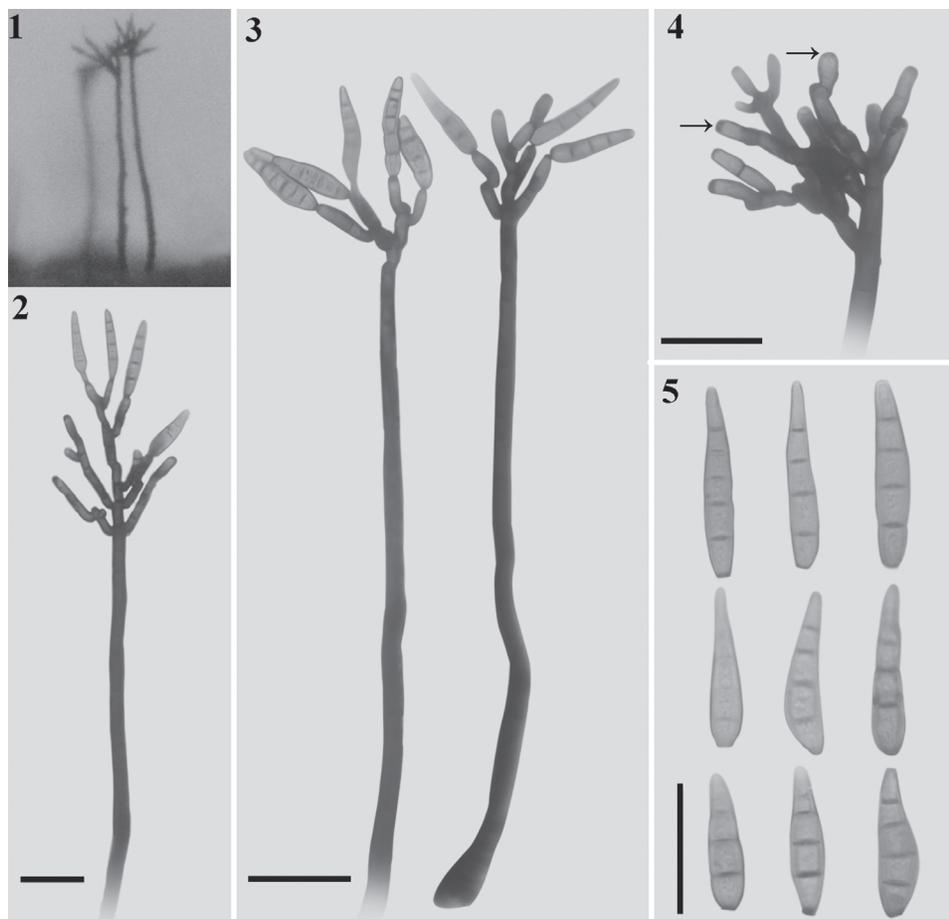
**Colonies** effuse on natural substratum, dark brown, hairy. **Mycelium** partly superficial, partly immersed in the substratum, composed of branched, septate, pale brown, smooth-walled hyphae, 2-3 µm thick. **Conidiophores** macronematous, mononematous, arising singly, erect, up to 500 µm high, 7-10.5 µm wide, straight to slightly flexuous, branched at the apex, brown to dark brown, often swollen at the base, 8-12 µm wide. Branches produce more secondary or tertiary branches. **Conidiogenous cells** monotretic, integrated, terminal on stipe and branches, elongating by successive percurrent proliferations, determinate, smooth, discrete, brown, cylindrical or subcylindrical, 7-18 × 3-7 µm. **Conidia** solitary, dry, acrogenous, obclavate, 3-5-distoseptate, smooth-walled, brown, apical cell pale brown, 31.5-52 µm long, 4.5-10 µm thick in the widest part, tapering to 2-3 µm at the apex.

*Habitat*: on dead branches of *Cinnamomum ilicioides* A.Chev.

*Distribution*: China.

*Teleomorph*: Unknown.

*Type*: China, Hainan Province, Bawangling Nature Reserve, collected from dead branches of *Cinnamomum ilicioides*, 16 Dec. 2010, Y. D. Zhang, holotype HSAUP H3347, isotype HMAS 146145).

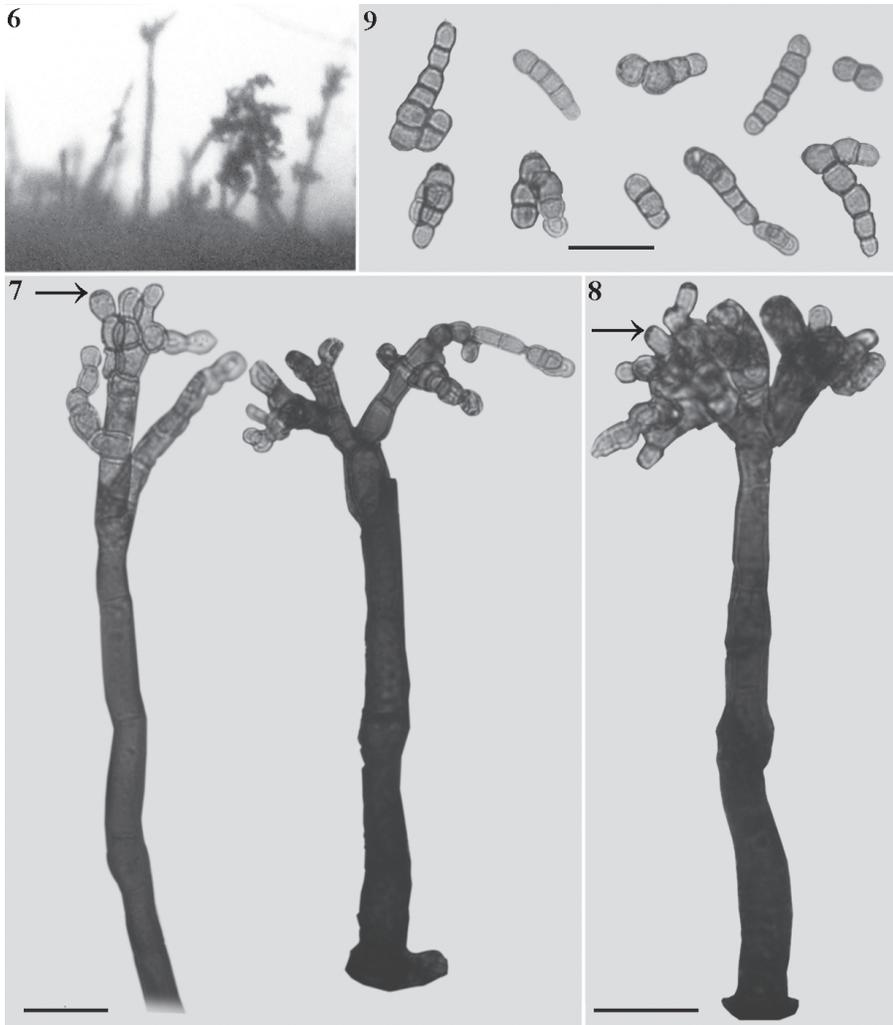


Figs 1-5. *Corynesporella cinnamomi* (holotype). **1.** Colonies on natural substratum. **2-3.** Conidiophores and conidia. **4.** Conidiophores. **5.** Conidia. Scale bars: 2 = 50  $\mu\text{m}$ , 3 = 40  $\mu\text{m}$ , 4-5 = 20  $\mu\text{m}$ .

***Dendryphion comosum*** Wallroth, Flora. crypt. German. 2: 300 (1833) Figs 6-9

**Colonies** effuse on natural substratum, dark brown, hairy. **Mycelium** partly superficial, partly immersed in the substratum, composed of branched, septate, pale brown, smooth-walled hyphae, 1-3  $\mu\text{m}$  thick. **Conidiophores** macronematous, mononematous, solitary, branched at the apex, forming a stipe up to 200  $\mu\text{m}$  long and 8-10  $\mu\text{m}$  wide. Branches produce more secondary or tertiary branches. **Conidiogenous cells** polytretic, cylindrical, terminal, later becoming intercalary, with several thickened conidiogenous pores. **Conidia** catenate, cylindrical with round ends or obclavate, slight curved, pale brown, with simple or branched chains, 1-5 euseptate, 11-29  $\mu\text{m}$  long, 5-7  $\mu\text{m}$  wide, with thickened scars.

*Specimen examined:* on dead branches of unidentified plant, tropical forest of Zhangjiajie, Hunan Province, China. 14 Aug 2010, Y. D. Zhang, HSAUP H3166 (duplicate HMAS 146146).

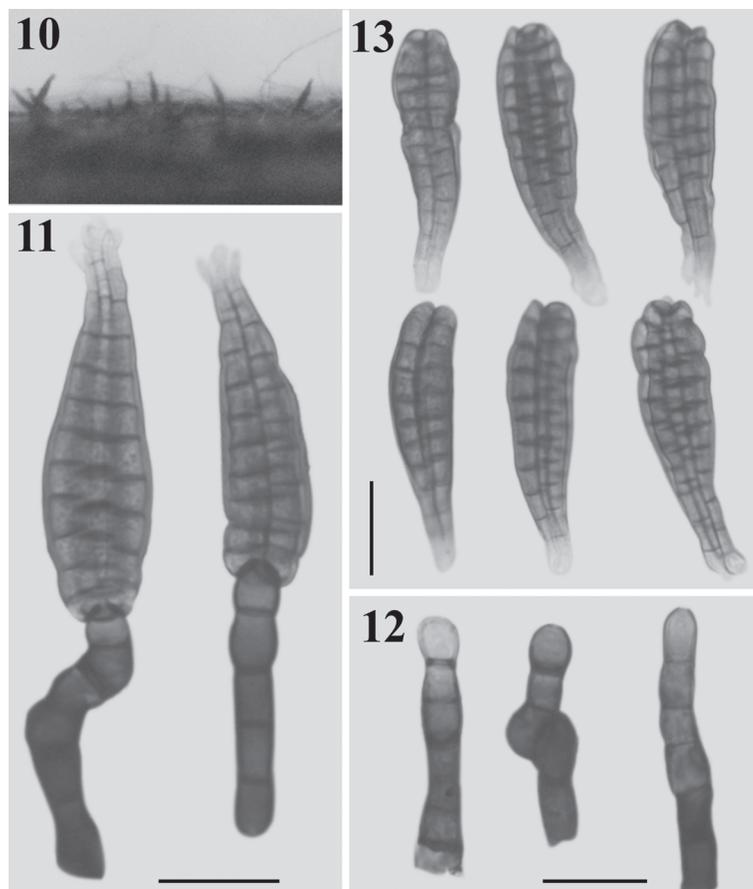


Figs 6-9. *Dendryphion comosum*. **6.** Colonies on natural substratum. **7-8.** Conidiophores and conidia. **9.** Conidia. Scale bars: 6-9 = 20  $\mu$ m.

***Tretospeira ugandensis*** (Hansf.) Piroz., Mycological Papers 129: 58 (1972) Figs 10-13

**Colonies** effuse on natural substratum, dark brown. **Mycelium** partly immersed in the substratum, composed of branched, septate, pale brown, smooth-walled hyphae, 2-3  $\mu$ m thick. **Conidiophores** macronematous, mononematous, solitary, dark brown, 3-5 septate, 40-56.5  $\mu$ m long, 5-7.5  $\mu$ m wide. **Conidiogenous cells** monotretic, terminal, integrated, subspherical. **Conidia** made up of four obclavate columns of cells, fused laterally except at the apex, each column made up 8-12 cells, euseptate, dark brown, 56-70  $\mu$ m long, 12.5-18.5  $\mu$ m wide.

*Specimen examined:* on dead branches of unidentified plant, tropical forest of Zhangjiajie, Hunan Province, China. 14 Aug 2010, Y.D. Zhang, HSAUP H3294 (duplicate HMAS 146147).



Figs 10-13. *Tretosporea ugandensis*. **10.** Colonies on natural substratum. **11.** Conidiophores and conidia. **12.** Conidiophores. **13.** Conidia. Scale bars: 10-13 = 20  $\mu$ m.

## DISCUSSION

Munjal and Gill established *Corynesporella* with *C. urticae* as the type species. *C. urticae* was collected from stems of *Urtica dioica* in India (Munjal & Gill 1961). Later, *C. pinarensis* R.F. Castañeda and *C. helminthosporioides* Hol.-Jech. were described from Cuba (Castañeda 1985; Holubová-Jechová 1987). Matsushima (1993) and Subramanian & Srivastava (1994) added *C. superioramifera*, *C. simpliphora* and *C. bhowaliensis* into this genus. *Corynesporella* is mainly characterized by macronematous, mononematous, branched conidiophores, monotretic, discrete, cylindrical conidiogenous cells and thick-walled, distoseptate conidia (Munjal & Gill 1961). In conidial morphology, this species resembles *C. helminthosporioides* (Holubová-Jechová 1987) and *C. bhowaliensis* (Subramanian & Srivastava 1994). However, the conidia of *C. cinnamomi* are smaller than those of either *C. helminthosporioides* (50-75  $\times$  8.8-12.8  $\mu$ m) or *C. bhowaliensis* (70-192  $\times$

8-10  $\mu\text{m}$ ), and the conidia are less septate than those of *C. helminthosporioides* (9-13 septate) and *C. bhowaliensis* (15-32 septate).

*Dendryphion comosum* is the first record from China. The conidial shape and size of our collection *D. comosum* compare well with those of the type species. This species was reported and illustrated from France, United Kingdom, New Zealand and India. It survives as a saprobe on rotten culms, dead branches, and decaying twigs of various plants.

*Tretospeira* was introduced by Pirozynski (1972) with *T. ugandensis* (Hansf.) Piroz. as the type species. The genus has remained monotypic. This is the first record of *T. ugandensis* from China. Our specimen is much similar to the type material. It is characterized by a monotretic conidiogenous cell, compound, made up of four columns of conidia cells which are fused laterally except at the apex.

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