

Three species of corticioid fungi (Basidiomycota) new to China

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Abstract: Three species of corticioid fungi are newly recorded in China: *Cerinomyces pallidus*, *Dichopleuropus spathulatus* and *Erythromyces crocicreas*. *C. pallidus* collected from Hunan Province is characterized by its basidia having two sterigmata. *D. spathulatus* collected from Yunnan Province is characterized by its pileate and laterally stipitate basidiocarps, and its hyphal system is dimitic. *E. crocicreas* was collected from Hainan Province, it has resupinate, greyish brown to dark brown hymenophore which often reddens the substrate. The illustrated descriptions of these three species are given based on the Chinese materials.

Key words: *Cerinomyces pallidus*, *Dichopleuropus spathulatus*, *Erythromyces crocicreas*, lignicolous fungi, taxonomy

中国革菌 3 新记录种

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摘要: 本文报道了中国革菌 3 个新记录种: 灰白片花耳采自湖南省, 其担子上着生两个担孢子梗。匙形茸瑚菌采自云南省, 其担子果具菌盖、侧生柄, 菌丝二系。硬锈红菌采于海南省, 其平伏, 灰褐色至暗褐色的子实层体可使附着基物变红。本文根据所采集的标本对这 3 种真菌进行了详细的描述。

关键词: 灰白片花耳, 匙形茸瑚菌, 硬锈红菌, 木生真菌, 分类

INTRODUCTION

Wood-rotting fungi have been intensively studied in China (Cui *et al.* 2006, 2007; Dai 2009a, 2009b; Dai *et al.* 2001, 2002; Dai & Cui 2008a, 2008b; Dai & Xiong

2008; Xiong & Dai 2008). However, the flora of these fungi in Chinese tropical and subtropical forests are still poorly known (Yu *et al.* 2008; Yuan & Dai 2008a, 2008b). From 2002 to 2007, several surveys of the wood-inhabiting fungi were carried out in Hunan,

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Yunnan and Hainan provinces, and three corticioid species, *Cerinomyces pallidus* G.W. Martin, *Dichopleuropus spathulatus* D.A. Reid, and *Erythromyces crocicreas* (Berk. & Broome) Hjortstam & Ryvarden were identified from these collections. They are new to Chinese fungal flora, and their illustrated descriptions are given based on our collections in this paper.

1 MATERIALS AND METHODS

The studied specimens are deposited at the herbarium of the Institute of Applied Ecology, Chinese Academy of Sciences (IFP). The microscopic characters were studied under Nikon E600 microscope, and anatomical details were drawn by the Nikon drawing tube. The microscopic procedure follows Yuan *et al.* (2006). In the text the following abbreviations were used: L = mean spore length (arithmetical average of all spores), W = mean spore width (arithmetical average of all spores), Q = variation in the L/W ratios between the specimens studied (quotient of the mean spore length and the mean spore width of each specimen), n = the number of spores measured from given number of specimens. In presenting the size range of spores, 5% of the measurements were excluded from each end of the range, and the measurements were given in parentheses. IKI stands for Melzer's reagent, KOH for 5% potassium hydroxide, and CB is the abbreviation of Cotton Blue. IKI- = inamyloid and indextrinoid, CB+ = cyanophilous, CB- = acyanophilous.

2 DESCRIPTIONS

Cerinomyces pallidus G.W. Martin, Mycologia 41: 83, 1949.

Fig. 1

Fruitbody — Basidiocarps annual, resupinate, adnate, ceraceous, tightly attached to the substrate, less than 1 mm thick. Hymenophore buff, smooth, cracked when dry; margin indeterminate.

Hyphal structure — Hyphal system monomitic; generative hyphae bearing clamp connections; hyphae IKI-, CB-; tissue unchanged in KOH.

Subiculum — Hyphae in subiculum hyaline, slightly thick-walled, smooth, bearing clamp connections at all the septa, frequently branched, loosely interwoven, 2–3 µm in diam.

Hymenophore — Hyphae in hymenium hyaline, thin-walled, smooth, bearing clamp connections, frequently branched, densely interwoven, 2–2.6 µm in diam.; cystidia and cystidioles absent; basidia clavate, with a basal clamp connection and two sterigmata, 10.5–12 × 4–5 µm; basidioles in shape similar to basidia, but slightly smaller.

Spores — Basidiospores ellipsoid to suballantoid, hyaline, thin-walled, smooth, IKI-, CB-, (6.5–)7–8.6(–9) × 3–4 µm, L = 7.46 µm, W = 3.6 µm, Q = 2.07 (n=30/1).

Specimen examined — China. Hunan Prov., Yizhang County, Mangshan National Forest Park, on fallen angiosperm trunk, 24 VI 2007 Xiong 42.

Remarks — *Cerinomyces pallidus* is similar to *C. crustulinus* (Bourdot & Galzin) G.W. Martin by its basidia having two sterigmata, but the latter has longer spores (8.6–9.6 µm in length, Kotiranta & Saarenoksa 2000).

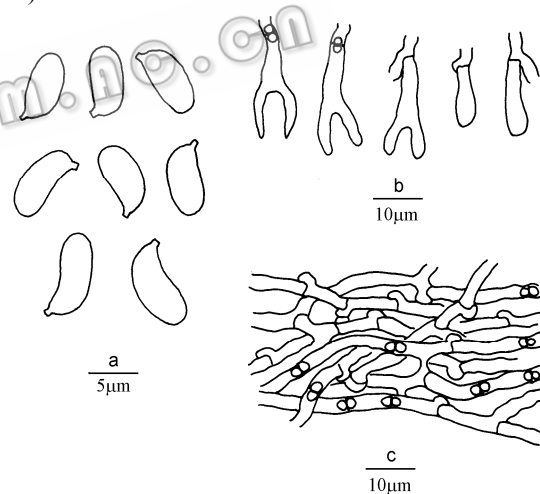


Fig. 1 Microscopic structures of *Cerinomyces pallidus* G.W. Martin (drawn from Xiong 42). a: Basidiospores; b: Basidia and basidioles; c: Hyphae from subiculum.

Dichopleuropus spathulatus D.A. Reid, Nova Hedwigia, Beih. 18: 329, 1965

Fig. 2

Fruitbody — Basidiocarps annual, pileate, laterally stipitate, solitary or several pilei arising from a common stipe base, without odour or taste when fresh, becoming fragile upon drying, coriaceous. Pileal surface ochraceous, glabrous, or covered with brownish string-like veins which radiate towards the pileus margin; margin paler. Hymenial surface ochraceous to pale brown, ridged, ceraceous, sometimes cracked.

Hyphal structure — Hyphal system dimitic; generative hyphae simple septate, skeletal hyphae dextrinoid in Melzer's reagent, CB⁺; all tissue unchanged in KOH.

Context — Generative hyphae hyaline, thin-walled, usually glued together, strongly interwoven, 3–5µm in diam.; skeletal hyphae dichotomously branched, hyaline, thick-walled with a narrow lumen to almost solid, 2–3µm in diam.

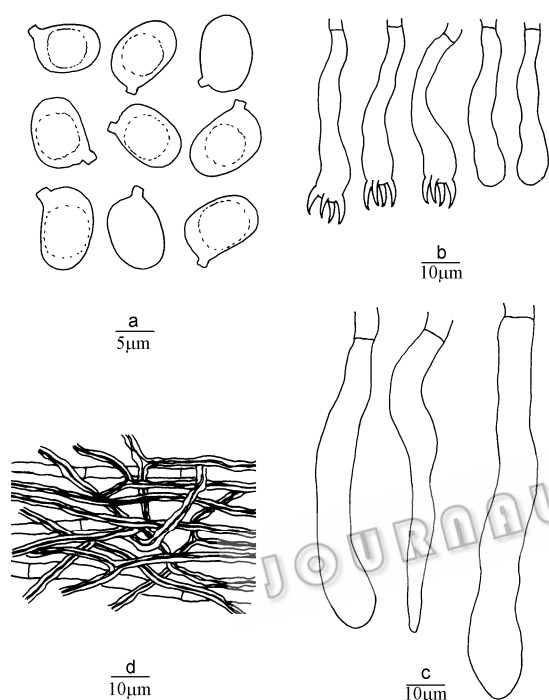


Fig. 2 Microscopic structures of *Dichopleuropus spathulatus* D.A. Reid (drawn from Dai 6684a). a: Basidiospores; b: Basidia and basidioles; c: Cystidia; d: Hyphae from context.

Hymenophore — Hyphae in subhymenium hyaline, thin-walled, 3–4µm in diam. Cystidia present, tubular, flexuous, apically obtuse or acute, hyaline, thin-walled, up to 200µm, 5–13µm in diam.; basidia clavate, with a basal simple septum and four sterigmata, up to 100µm, 7–8µm in diam.; basidioles in shape similar to basidia, but slightly smaller.

Spores — Basidiospores broadly ellipsoid, with a distinct apiculus, hyaline, thin-walled, smooth, guttulate, IKI[–], CB[–], 8.5–11 × (5.9–)6–7.2µm, L = 9.47µm, W = 6.49µm, Q = 1.46 (n=30/1).

Specimen examined — China. Yunnan Prov.,

Mengla County, Green Stone Forest Park, on ground, 4 VIII 2005 Dai 6684a.

Remarks — This species is characterized by having dimitic hyphal system, dextrinoid skeletal hyphae and tubular cystidia.

Erythromyces crocicreas (Berk. & Broome) Hjortstam & Ryvarden, in Hjortstam & Tellería, Mycotaxon 37: 55, 1990

Fig. 3

— *Hymenochaete crocicreas* Berk. & Broome, J. Linn. Soc., Bot. 14: 68, 1873.

— *Hymenochaete innata* Cooke & Massee, Grevillea 15: 99, 1887.

— *Porogramme crocicreas* (Berk. & Broome) Pat., Bull. Soc. Mycol. Fr. 31: 77, 1915.

— *Veluticeps crocicreas* (Berk. & Broome) Cooke, Grevillea 8: 149, 1880.

Fruitbody — Basidiocarps annual, resupinate, closely attached to the substrate, 0.2–1mm thick, woody hard, distinctly delimited towards the wood which is coloured in red zones. Hymenophore grayish brown, cinnamon brown to dark brown, smooth, hymenophore strongly pilose by protruding cystidia under lens, cracked upon drying; margin indeterminate. Subiculum reddish-brown, woody hard, 0.2–1mm thick.

Hyphal structure — Hyphal system dimitic; generative hyphae with clamp connections; skeletal hyphae dominant, IKI[–], CB[–]; tissues darkening in KOH.

Subiculum — Generative hyphae rarely, hyaline, thin-walled, unbranched, 1.5–2µm in diam.; skeletal hyphae hyaline to yellow brown, thick-walled to almost solid, sometimes slightly encrusted, mostly vertically arranged, 2–4µm in diam.

Hymenophore — Subhymenium hardly identification. Cystidia numerous, acute, strongly encrusted, thick-walled, yellowish-brown to reddish in KOH, 80–100 × 10–12µm; basidia clavate, with a basal clamp connection and four sterigmata, in a dense palisade, commonly more or less pedunculate, 20–30 × 4–5µm; basidioles in shape similar to basidia, but slightly smaller.

Spores — Basidiospores cylindrical to ellipsoid, hyaline, thin-walled, smooth, narrowing towards the apiculus, 6–8 × 2.8–3.2µm.

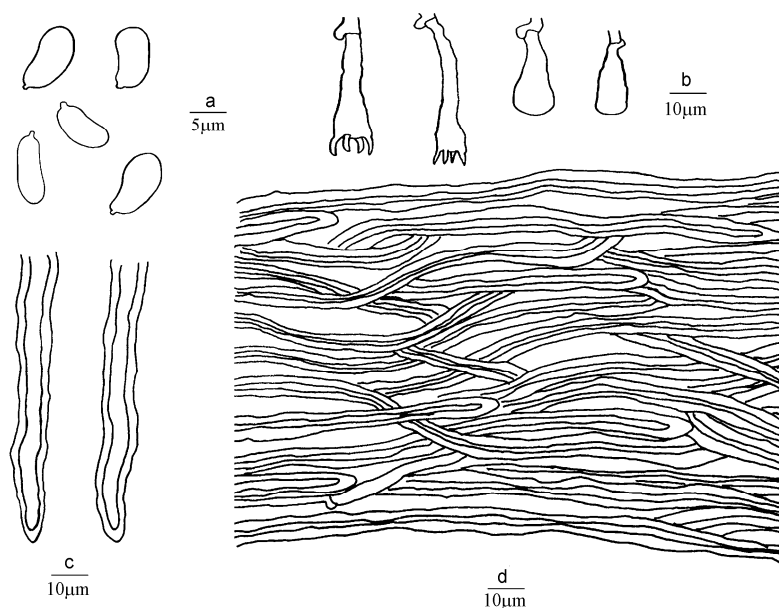


Fig. 3 Microscopic structures of *Erythromyces crocicreas* (Berk. & Broome) Hjortstam & Ryvarden (drawn from Dai 4525). a: Basidiospores; b: Basidia and basidioles; c: Skeletocystidia; d: Hyphae from subiculum.

Specimen examined — China. Hainan Prov., Lingshui County, Diaoluoshan Nature Reserve, on fallen decorticated angiosperm trunk, 24 XI 2002 Dai 4525.

Remarks — *Erythromyces crocicreas* can redden the living substrate and this may confuse it with *Tinctoporellus epimiltinus* (Berk. & Broome) Ryvarden which also can redden the living substrate. However the latter has a poroid hymenial surface. In addition, *Erythromyces crocicreas* is the only one species in the genus *Erythromyces* and usually occurs in tropical areas of China.

[REFERENCES]

- Cui BK, Dai YC, Knudsen H, 2007. Two species of Hymenochaetaceae (Basidiomycota, Aphyllophorales) new to China. *Mycosystema*, **26**: 144-147
- Cui BK, Sun XQ, Chen JX, Zhao MS, 2006. Two new forest pathogens from Tianmu Mts., Zhejiang Province. *Forest Research*, **20**: 97-100
- Dai YC, 2009a. A checklist of polypores in China. *Mycosystema*, **28**: 315-327
- Dai YC, 2009b. *Phellinidium* (Basidiomycota, Hymenochaetales) in China. *Mycosystema*, **28**: 25-28
- Dai YC, Cui BK, 2008a. Notes on *Megasporoporia* (Basidiomycota, Polyporales) in China. *Mycosystema*, **27**: 604-607
- Dai YC, Cui BK, 2008b. *Trichaptum* (Basidiomycota, Polyporaceae) in China. *Mycosystema*, **27**: 510-514
- Dai YC, Wu XL, Xu MQ, 2002. A new butt root rot of *Litsea cubeba* in Guizhou Province. *Forest Research*, **15**: 555-558
- Dai YC, Xiong HX, 2008. *Irpex* (Basidiomycota, Steccherinaceae) in China. *Mycosystema*, **27**: 515-519
- Dai YC, Zhang XQ, Zhou TS, 2001. New and noteworthy species of Hymenochaetaceae from China. *Mycosystema*, **20**: 16-21
- Kotiranta H, Saarenoksa R, 2000. Corticioid fungi (Aphyllophorales, Basidiomycetes) in Finland. *Acta Botanica Fennica*, **168**: 1-55
- Xiong HX, Dai YC, 2008. Notes on lignicolous and corticioid fungi in China I. Two species in *Mycoacia* and *Phlebia* new to China. *Journal of Fungal Research*, **6**: 1-3
- Yu CJ, Li J, Dai YC, 2008. Two polypores from Yunnan new to China. *Mycosystema*, **27**: 145-150
- Yuan HS, Dai YC, 2008a. Hydneous fungi of China I. *Stecchericum* (Aphyllophorales), a genus new to China. *Mycosystema*, **27**: 57-61
- Yuan HS, Dai YC, 2008b. Two species in Hymenochaetaceae (Basidiomycota) new to China. *Mycosystema*, **27**: 150-154
- Yuan HS, Li J, Huang MY, Dai YC, 2006. *Antrodiella stipitata* sp. nov. from Heilongjiang Province, northeastern China, and a critical checklist of polypores from the area. *Cryptogamie Mycologie*, **27**: 21-29