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Leptographium qinlingensis sp. nov. Associated with *Dendroctonus armandi* in *Pinus armandi* *

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Abstract During a recent survey of fungi associated with bark beetle in Qinling Mountains of China, a new species was isolated, and the aim of this study was to describe this fungus.

Key words *Leptographium qinlingensis*; *Dendroctonus armandi*; *Pinus armandi*

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Most species in *Leptographium* are associated with insects, particularly bark beetles that infect trees^[1~4], they may contribute to tree death or alternatively be accidental associates of the insects that are disadvantageous rather than advantageous to their vectors^[5,6].

1 Materials and methods

Isolations were made from 30 bark beetles (*Dendroctonus armandi*) collected individually from galleries in the sapwood of *Pinus armandi* in China. Insects were washed lightly in sterile distilled water and plated on 2% MEA (20 g Biolab malt extract, 20 g Biolab agar, 1000 mL distilled water) amended with 0.01% cycloheximide, after cooling to approximately 60°C. Individual beetle was squashed onto the surface of agar plates, and insect parts were spread across the surface of the agar. All measurements were made from cultures after growth at 25°C on 2% MEA.

2 Results

After study of the *Ophiostoma* sp. and comparison with various other similar species, it was concluded that this is a previously undescribed taxon. The fungus is described as follows:

***Ophiostoma qinlingensis* Chen & Tang sp. nov.**

Perithecia produced on host tissue, perithecia occurring singly, bases black, globes, slightly smooth walled, with sparse hyphen ornamentation, 191.50~396.12 μm diam, neck black, cylindrical with slight apical taper, smooth, 599.56~1131.32 μm long, 63.75~76.50 μm wide above globes base, 17.85~25.51 μm wide at the apex (Fig. 1-A), ostiolar hyphae present, light brown to hyaline, convergent, soft, aseptate, 17.80~51.25 μm long, asci evanescent, ascospores ellipsoidal, aseptate, hyaline (2.99~5.10) μm × (2.55~3.83) μm (Fig. 1-B).

***Leptographium qinlingensis* Tang sp. nov.**

Hyphae dark-brown, smooth, 4.02~5.03 μm wide. Occasionally constricted at the septa, but frequently constricted at the non-septa. Conidiophores occurring singly from the hyphae, erect, macronematous, mononematous, 199.96~300.12 μm long, rhizoidlike structures absent. Stipe dark-brown, smooth, 4.98~11.32 μm long. Occasionally constricted at the septa, but frequently constricted at the non-septa, 149.85~180.36 μm long (from first basal septum to below primary branches). 8.91~10.20 μm wide at base, basal cell also occasionally swollen (Fig. 1-C). Conidiogenous apparatus up to 127.52 μm long (exclude the conidial mass), with 2 to 5 series of cylindrical branches, 2~4 pri-

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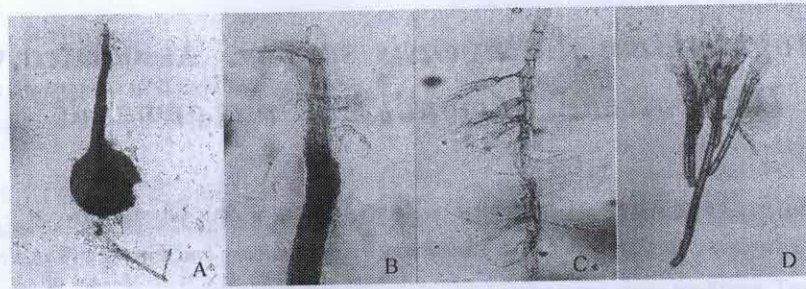


Fig. 1(A~D)

A. Perithecia of *O. qinlingensis*; B. Ostiolar hyphal of Perithecia; C. Hyphae of *L. qinlingensis*; D. Conidia of *L. qinlingensis*

mary branches, dark-brown, cylindrical aseptate, 19.75~30.16 μm long and 11.48 μm wide. Secondary branches lightly brown, aseptate, 20.25~29.63 μm long, 5.50~6.53 μm wide, conidiogenous cells discrete, cylindrical. Conidia, aseptate, obovoid with truncated ends, (1.31~1.73) $\mu\text{m} \times$ (4.72~5.26) μm . Conidia accumulating in slimy droplets at the apex of conidiogenous apparatus (Fig. 1-D).

3 Discussion

Ophiostoma qinlingensis superficially resembles *O. protearum* (Marais & Wingfield), but can be distinguished from former is larger than later and later have lunette ascospores^[7,8]. Furthermore, anamorph of *O. constrictus* is *Leptographium*, but anamorph of *O. protearum* is sporothrix^[9]. Because of *Leptographium qinlingensis* character obvious constricted in conidiophore and hyphal, therefore it is different from other *Leptographium* spp.

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华山松大小蠹共生真菌新种 *Leptographium qinlingensis*

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摘要 报道了与危害中国秦岭华山松的华山松大小蠹相关的真菌新种, 描述了其有性阶段和无性阶段的形态特征。研究标本保存于西北农林科技大学。

关键词 秦岭细粘束孢; 华山松大小蠹; 华山松

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