SOME PYROPHILOUS DISCOMYCETES (PEZIZALES) IN TAIWAN

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ABSTRACT—Eight pyrophilous discomycetes collected from burnt ground and wood in forest are included in this report. Among them, Anthracobia maurilabra, A. melaloma, Peziza avernensis, Pyronema omphalodes, and Sphaerospora brunnea are new to Taiwan. Descriptions and illustrations of these newly recorded species are provided.

KEY WORDS: Anthracobia, Carbonarius, Phoenicoid.

Pyrophilous or phoenicoid discomycetes (Carpenter and Trappe, 1985) is a group of fungi which fruits among ashes where fire has occurred. The ecology and diversity of pyrophilous fungi have been intensively studied in various countries (Egger and Paden, 1986; Petersen, 1970; Warcup, 1990). In temperate areas, the post-fire forest fungal flora is dominated by operculate discomycetes (Pezizales) and a few mushrooms (Dix and Webster, 1995). However, very few of them have been reported in Taiwan. This report includes eight discomycetes collected from burnt ground and wood in the forest of central Taiwan.

*Ascobolus carbonarius* P. Karst.

This species is characterized by its habitat and warty ascospores and was previously reported by Wang (1999). Specimens were found in the mixed forest at Meifeng, where visitors frequently make fires to stay warm and then leave the burnt wood on the side of trails.


*Anthracobia maurilabra* (Cooke) Boud. (Figs. 1, 6)

Apothecia gregarious, discoid, yellowish brown, 1-3 mm wide; receptacle dark brown, with short brown hairs 20-70 x 5-7 μm. Ectal excipulum of *textura angularis*, composed of polygonal cells, brown walled, 20-35 μm diam., layer 100-500 μm thick. Medullary layer 450-600 μm thick, polygonal cells 25-40 μm diam. Asci 8-spored, cylindrical, 130-180 x 9-12 μm. Ascospores uniseriate, ellipsoid, 17-20 x 8-9 μm, hyaline, each with 2 oil droplets. Paraphyses filiform, base 2-3 μm, enlarged at tips, to 5-6 μm wide, filled with orange granules.


The ascospores of this collection are slightly smaller than the typical material. (19-22 x 9-10 μm in Yao and Spooner, 1995).

Anthracobia melaloma (Alb. & Schwein.: Fr.) Arnould
(Figs. 2, 7)

Apothecia gregarious, discoid, 2-3 mm wide, yellow to orange; receptacle brown, granular, margins covered with short brown hairs, 25-30 x 10-15 μm. Ectal excipulum of textura angularis, cells 15-35 μm diam., medullary excipulum of textura intricata, hyphae 6-15 μm diam. Asci 8-spored, cylindrical, 171-196 x 10-13 μm. Ascospores uniseriate, ellipsoid, hyaline, smooth, each with 2 oil droplets, 15-17.5 x 7.5-10 μm, de Bary bubble appeared in dry specimen. Paraphyses filiform, base 2.5-3 μm, enlarged at tips 5-10 μm wide, filled with orange granules.


This species differs from A. maurilabra by the orange apothecia and smaller ascospores (Yao and Spooner, 1995, 1998).

Peziza arvernensis Boud.
(Figs. 3, 8)

Apothecia scattered to gregarious, disc cupulate, pale brown, 3-6 cm diam., recep-
Fig. 2. Anthracobia melaloma A. An ascus. B. Paraphysis tips. C. Hairs. D. Ascospores. Bar = 25 µm for A, B; and 10 µm for C, D.

Fig. 3. Peziza arvernensis A. A part of excipulum. B. Ascospores. C. Paraphysis tips. D. An ascus. Bar = 50 µm for A; 10 µm for B; and 25 µm for C, D.
tacle, white, fragile. Excipulum differentiated into 3 layers, the outer layer composed of large, globose cells 25-75 μm, layer 200-300 μm thick; middle layer 325-575 μm thick, with brown, thin-walled, globose cells; subhymenium layer 25-50 μm thick, with small cells and hyphae, 7.5-20 μm. Hymenium layer 250-275 μm thick, pale brown. Ascii 8-spored, apex turning blue in Melzer’s reagent, cylindrical, 225-250 × 12-15 μm. Ascospores ellipsoid, hyaline, finely punctate, 15-17 × 9-10 μm. Paraphyses filiform, slightly expanded at apex to 4-7 μm wide.

Colonies on MEA reaching 9 cm diam. in 12 days at room temperature, plain, velvety, mycelium diffused, white, 2-5 μm wide, no conidia-producing structures observed.

Specimen examined: Nantou: Meifeng, on burnt wood and ground, July 16, 2000, Y. Z. Wang, WAN 778 (TNM F11298).

This species is widely distributed in the world (Rifai, 1968). Seaver (1942) found that it also occurs on steamed soil. The ascospores of North American collections are smaller (10-13 × 5-8 μm in Seaver, 1942).

Rhizina undulata Fr.

This species is characterized by flat, brown apothecia, and large apiculate ascospores. It was previously described in Chinese by Wang (Wu et al., 1996).

Specimens examined: Chiayi: Nanshilindu, on burnt soil in Pinus forest, May 3, 1994, S. Z. Chen, WAN 032 (TNM F1972); S. H. Wu and

Peziza echinospora P. Karst.

This species is characterized by the echinulate ascospores and was previously reported by Wang (1996).

Specimen examined: Nantou: Meifeng, on burnt wood, July 18, 1995, W. N. Chou; WAN 176 (TNM F3447).

Pyronema omphalodes (Bull.) Fuckel (Fig. 4)


Specimen examined: Nantou: Meifeng, on burnt wood and ground, May 16, 2000, Y. Z. Wang, WAN 778 (TNM F11298).

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Fig. 4. Pyronema omphalodes A. An ascus. B. Paraphysis tips. C. Ascospores. Bars = 10 μm.
Fig. 5. Sphaerosporalla brunnea. A. Hairs. B. Ascospores. C. An ascus. D. Paraphysis tips. Bar = 25 μm for A, C, D; and 10 μm for B.


Sphaerosporalla brunnea (Alb. & Schwein.) Svček & Kubčka
(Figs. 5, 9)

Apothecia gregarious, sessile, discoid, yellowish brown, 1-5 mm diam. Receptacle brown, margins with short hairs, 85-98 x 7.5-10 μm. Excipulum with textura globulosa, cells 20-50 μm diam., subhymenium textura intricata, hyphae 3-5 μm diam., hymenium layer pale brown, 275-300 μm thick. Asci 8-spored, occasionally 4- or 6-spored, cylindrical, 160-255 x 22-26 μm, base with a crozier. Ascospores globose, hyaline, 14-18 μm diam., each with a large oil droplet. Paraphyses clavate, enlarged at tips to 3-8 μm wide, filled with brown granules.

Specimens examined: Taiwan. Nantou: Meifeng, on burnt wood. Y. Z. Wang; WAN 300, July 2, 1996 (TNM F5125); Y. Z. Wang; WAN 684, June 29, 1999 (TNM F9846).

This species is characterized by hairy apothecia and globose ascospores. Some ascospores have a loose coating on the surface (Rifai, 1968). It can form ectomycorrhizae with species of Pinus, Picea, Larix, and Populus (Danielson, 1984). Yao and Spooner (1996) treated S. hinnulea as a synonym with S. brunnea.

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REFERENCES


台灣的喜高溫盤菌

王也珍

摘要

本文報告採集自台灣中部森林內的8種喜高溫的盤菌，它們都生長在火燒過後的木頭或地上。其中的Anthracobia maulilabra, A. melaloma, Peziza aevernensis, Pyronema omphalodes 與Sphaerospora brunnea是台灣的新記錄種。

關鍵詞：喜火盤菌，炭生的，高溫處理後的。