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New records of genus *Stachylina* (Trichomycetes) in Taiwan

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ABSTRACT

In peritrophic membrane of larval Chironomidae, two species of the Genus *Stachylina* in Taiwan, namely, *S. nana* and *S. pedifer* are described and illustrated. These are recorded as new to the fungal flora of Taiwan.

Key words: *Stachylina nana, S. pedifer,* Trichomycetes, Taiwan.

Itroduction

Trichomycetes (Zygomycota) are obligate symbionts associated with large variety of terrestrial, marine and freshwater arthropods, including Insecta, Crustacea, and Diplopoda. The thallus lived in the digestive tract of hosts, which attached without penetration to the linings of the gut (Lichwardt, 1986).

The genus *Stachylina* is one of the worldwide genera of Trichomycetes in aquatic dipteran larvea (Lichwardt, 2001). The thallus attach on peritrophic membrane (base of thallus sometimes penetrating the membrane) of larval Chironomidae, Orthocladiinae (Alencar *et al*., 2003) and Psychodidae (Williams and Lichtwardt, 1984). During the study of Trichomycetes in Taiwan, two new records species of *Stachylina* in larvae Chironomidae, namely, *S. nana* and *S. pedifer* were identified. Characters of above two species are described and illustrated.

Materials and Methods

This study was conducted in March 2004 to April 2005 in upper and middle stream of Waishuangsi (Taipai), and Kaobingsi (Kaohsiung). Aquatic dipteran larvea (Chironomidae, Simuliidae) were collected using pans and pipettes. Lotic living insects were keep on ice or 5°C until dissected in laboratory. The insects were dissected under dissecting microscopes in distilled water with needles. The peritrophic membrane and hindgut were mounted on slides in distilled water, and detected of the presence of gut fungi under light or phase-contrast microscope. Photographed after slides permanent by infiltration with lactophenol-cotton blue and sealed with clear fingernail polish. The taxaonomic systems of Lichtwardt *et al*. (2001) were used for identification.

Taxonomy

Stachylina nana Lichtwardt, Mycotaxon 19: 529–550, 1984. (Fig. 1. A.).

Thalli cymbiform to fusiform, 60–80 × 10–20 µm, and attached by a small holdfast disk. Producing 1–2 oval to biconical trichospores, 25–35 × 7–8 µm, with a single appendage and no collar. Zygospores unknown.

Specimen examined. Silde Or4aC7m, deposited with author, isolated from peritrophic membrane of Chironomidae, Waishuangsi, Taipai, and Kaobingsi, Kaohsiung, Taiwan. Apr. & Nov. 2004.

Distribution. France (Lichtwardt, 1984), Japan (Lichtwardt *et al*., 1987), New Zealand (Williams and Lichtwardt, 1990) and Taiwan.

Note. This species is confused with *S. paucispora*, but *S. paucispora* attsched to hindgut, *S. nana* attsched to peritrophic membrane of Chironomidae.

Stachylina pedifer Williams & Lichtwardt, Mycologia 75: 728–734, 1983. (Fig. 1. B & C.).

Thalli cymbiform, 70–180 × 8–10 µm, and with a footlike extension of the basal cell that penetrates through the inner membrane of gut. There are eight ovoide trichospores with a slight medium swelling, 30 × 10 µm, with one long, and narrowing appendage but no collar. Zygospores unknown.

Specimen examined. Silde Or4oC3m, deposited with author, isolated from peritrophic membrane of Chironomidae, Waishuangsi, Taipai, Taiwan. Apr. 2004.

Distribution. Montana, U.S.A. (Williams & Lichtwardt, 1983), Norway (White and Lichtwardt, 2004), and Taiwan.

Note. This species is characterized by footlike basal cell, and trichospores can be 2–8 per thallus.

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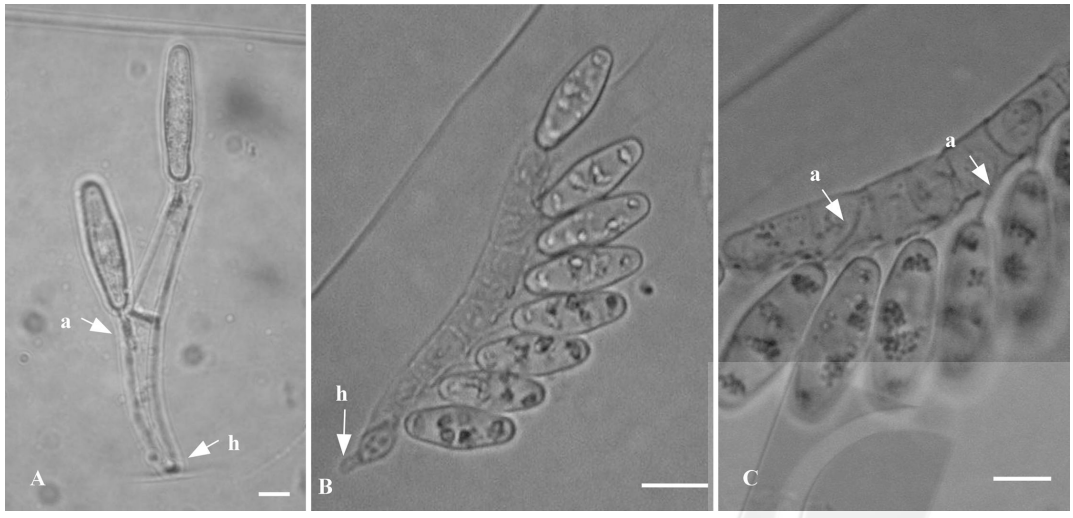

Fig. 1. *Stachylina.* A, *S.nana* ((bar = 15 µm); B. C. *S. Pedifer* (bar = 10 µm). Arrow a. appendage of non-released trichospores was observed in thalli; Arrow h. holdfast of thalli.

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