

Didymium lenticulare Thind & Lakhanpal (Physarales, Myxomycetes) — New to Taiwan

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ABSTRACT : *Didymium lenticulare* Thind & Lakhanpal is reported for the first time from Taiwan. Detailed species description and illustration are provided.

KEY WORDS : Myxomycetes, Physarales, *Didymium lenticulare*, Taiwan.

INTRODUCTION

In the past few years a Myxomycete resembling *Didymium squamulosum* had been collected for several times from various parts of Taiwan. It is then identified as *D. lenticulare*. As this species is only hitherto known from India (Thind and Lakhanpal, 1968; Thind, 1977; Lakhanpal and Mukerji, 1981), we summarize our observations here based on Taiwanese collections.

MATERIALS AND METHODS

Traditional herbarium methods were used in collecting specimens; moist chamber cultures were processed according to Chiang and Liu (1991). Measurements of capillitia and spores were done under an oil immersion objective. Voucher specimens are deposited in the Mycology Herbarium of the Department of Botany, National Taiwan University, Taipei.

RESULTS

Didymium lenticulare Thind & Lakhanpal, Mycologia **60**: 1083. 1968. Figs. 1-14

Fructification gregarious to scattered, white, sporangiate, 1-1.5 mm tall, sporangia (0.3-)0.5-0.84 mm in diameter, 0.23-0.25 mm thick, discoid with a wide, limy umbillicus below. **Stalk** white to ochraceous, longitudinally furrowed, tapering above, rotate, erect or

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bent, surface sprinkled with amorphous lime. *Peridium* single with abundant white lime deposition, forming an uneven or corrugated limy surface; the umbilicate basal plate also limy with obvious ridges radiating from the stalk; dehiscence irregular. *Columella* none. *Hypothallus* concolorous with the stalk, distinct, wrinkled as venose branches, sometimes adjoining other hypothalli nearby. *Capillitium* hyaline to brownish, about 1 μm thick, branched and interconnected, with numerous minute bead-like markings, sometimes with a few brownish swellings. *Spores* blackish brown in mass, dark brown in transmitted light, marked by small warts mixed with clusters of larger ones, globose to subglobose, 8-10(-12) μm in diameter; some elliptical ones 7-9 x 9-11 μm . *Plasmodium* not seen.

India and Taiwan. Taiwan on plant debris, bark of *Ficus* sp. and other trees.

Specimens examined:

TAIWAN: Taipei County, Tanshui (淡水), Tan-chiang University (淡江大學), CHLB 941, fruiting bodies developed from a moist chamber culture (Jan.20-Feb.20,1992) on bark of *Ficus* sp. (MORACEAE) collected in Dec.1,1991; **Keelung City** (基隆市), Chi-tu (七堵), Tai-an-pu-bu Waterfall(泰安瀑布), CHC675(442), on plant debris, Oct.16,1994; **Hualien County**, Chi-nan (池南), CHLB 1084, fruiting bodies developed from a moist chamber culture (Sep.12-Oct.5, 1992) on unidentified bark collected in Sep.5,1992; CHLB 1085, *ditto* except fruiting bodies developed in Oct.4,1992.

DISCUSSION

Superficially our specimens in having sporangia with thick but uneven corrugated lime crust resemble that of *D. squamulosum* (Albertini et Schweinitz) Fries. It differs, however, from *D. squamulosum* in possessing strongly discoid sporangia, no columella, and subulate and longer stalk, features that characterize *D. lenticulare*. Nevertheless, the stalk of our specimens is whitish due to a dense covering of amorphous lime crystals. Thind and Lakhanpal (1968) described the stalk as deep brown to dark brown below, lighter-coloured and translucent above, and scantily sprinkled with crystals of lime. We think that the color difference may due to environmental variations. Before a laboratory culture can be achieved, we tentatively identify our specimens as a more limy form of *D. lenticulare*. This species may superficially also look like *D. clavus* (Albertini et Schweinitz) Rabenhorst, and *D. applanatum* Nannenga-Bremekamp. The following characters may help in delimiting *D. lenticulare* from these allies: (1) a clearly defined venose basal plate; (2) larger and distinctly cluster-warted spores; (3) rather long stalks and wrinkled lime crust on peridium. In addition, it should be noted that the lime crust of several sporangia in the collection CHLB1084 is not so rough, and the clustered warts on the spore surface and bead-like markings on capillitial threads are not very prominent either.

The latitude of the type locality (Kulu Hills, northern India) is about 32°N, and the latitude of our sites of collection is about 24-25°N. This suggests that *D. lenticulare* might have a tropical/subtropical distribution.

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Fig. 1. Map of Taiwan, showing the three localities where *Didymium lenticulare* were found.

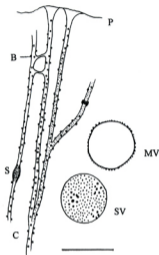


Fig. 2. *Didymium lenticulare*, capillitia (C) attached to the peridium (P) with bead-like protuberances (B) and brownish swellings (S); two spores, each showing marginal view (MV) and surface view (SV).

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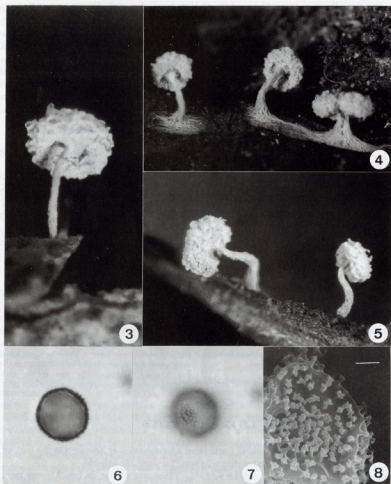


Plate I. Light (Fig. 3-7) and scanning electron micrographs of *Didymium lenticulare*.

Fig. 3. Sporangium seen from lower side (note the venose basal plate), ca. 64X.

Fig. 4. Three sporangia showing adjoining hypothallus, ca. 31X.

Fig. 5. Two atypical sporangia from CHLB 1084, ca. 48X.

Fig. 6. Spore, marginal view, ca. 268X.

Fig. 7. Spore, surface view, ca. 268X.

Fig. 8. Part of the spore, note the clavate warts, bar = 1 μ m.

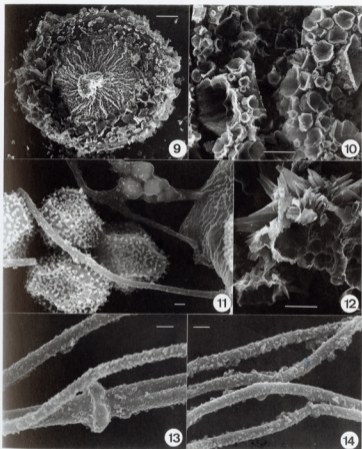


Plate II. Scanning electron micrographs of *Didymium lenticulare*.

Fig. 9. The venose basal plate of a sporangium, bar=100 μ m.

Fig. 10. Lime deposition on basal plate, bar = 1 μ m.

Fig. 11. Spores and part of peridium attached by capillitia, bar = 5 μ m.

Fig. 12. Lime crystals on peridium, bar = 5 μ m.

Fig. 13. Capillitia showing one swelling, bar = 1 μ m.

Fig. 14. Capillitia with numerous bead-like markings, bar = 1 μ m.

Didymium lenticulare Thind & Lakhanpal (絨泡黏菌目，眞黏菌綱)—
臺灣新記錄種

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摘 要

Didymium lenticulare Thind & Lakhanpal 在臺灣首次發現，本文對此種作了詳細的描述並附有圖片說明。

關鍵詞：黏菌，絨泡黏菌目，*Didymium lenticulare*，臺灣。

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