

Notes on Dictyostelid Cellular Slime Molds of Taiwan (I): *Dictyostelium minutum* and *Dictyostelium clavatum*

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ABSTRACT: During a survey of dictyostelid cellular slime molds in Taoyuan County in 2001, *Dictyostelium minutum* and *Dictyostelium clavatum* were isolated from forest soils and were identified as new records to Taiwan. These isolates are examined and illustrated in this text. The specimens and pure cultures are deposited in the Mycology Laboratory, Department of Biology, National Taiwan Normal University, Taipei, Taiwan, R. O. C.

KEY WORDS: *Dictyostelium minutum*, *Dictyostelium clavatum*, Dictyostelid cellular slime molds, Taoyuan, Taiwan.

INTRODUCTION

The taxonomic studies of dictyostelid cellular slime molds in Taiwan have been briefly reviewed in previous papers (Yeh and Chien, 1983; Hagiwara *et al.*, 1992; Lin and Yeh, 1999; Fan *et al.*, 2001; Hsu *et al.*, 2001). During a survey of forest soils in Taoyuan County in 2001, *Dictyostelium minutum* Raper and *Dictyostelium clavatum* Hagiwara, two new records to Taiwan, were isolated. These isolates were examined and illustrated in this text. The examined specimens and pure cultures are deposited in the Mycology Laboratory, Department of Biology, National Taiwan Normal University, Taipei, Taiwan, R. O. C.

MATERIALS AND METHODS

The methods used for isolation, cultivation and observation have been described previously (Hsu *et al.*, 2001). The taxonomic system of Raper (1941) and Hagiwara (1989, 1992) were followed for identification.

TAXONOMIC TREATMENT

Dictyostelium minutum Raper, Mycologia, 33: 634, 1941. 細小網柱細胞黏菌 Fig. 1

Sorocarps usually clustered, gregarious or solitary, unbranched or sparsely and irregularly branched, erect, rarely prostrate, not phototropic. Sorophores colorless, sinuous, 0.23-1.00

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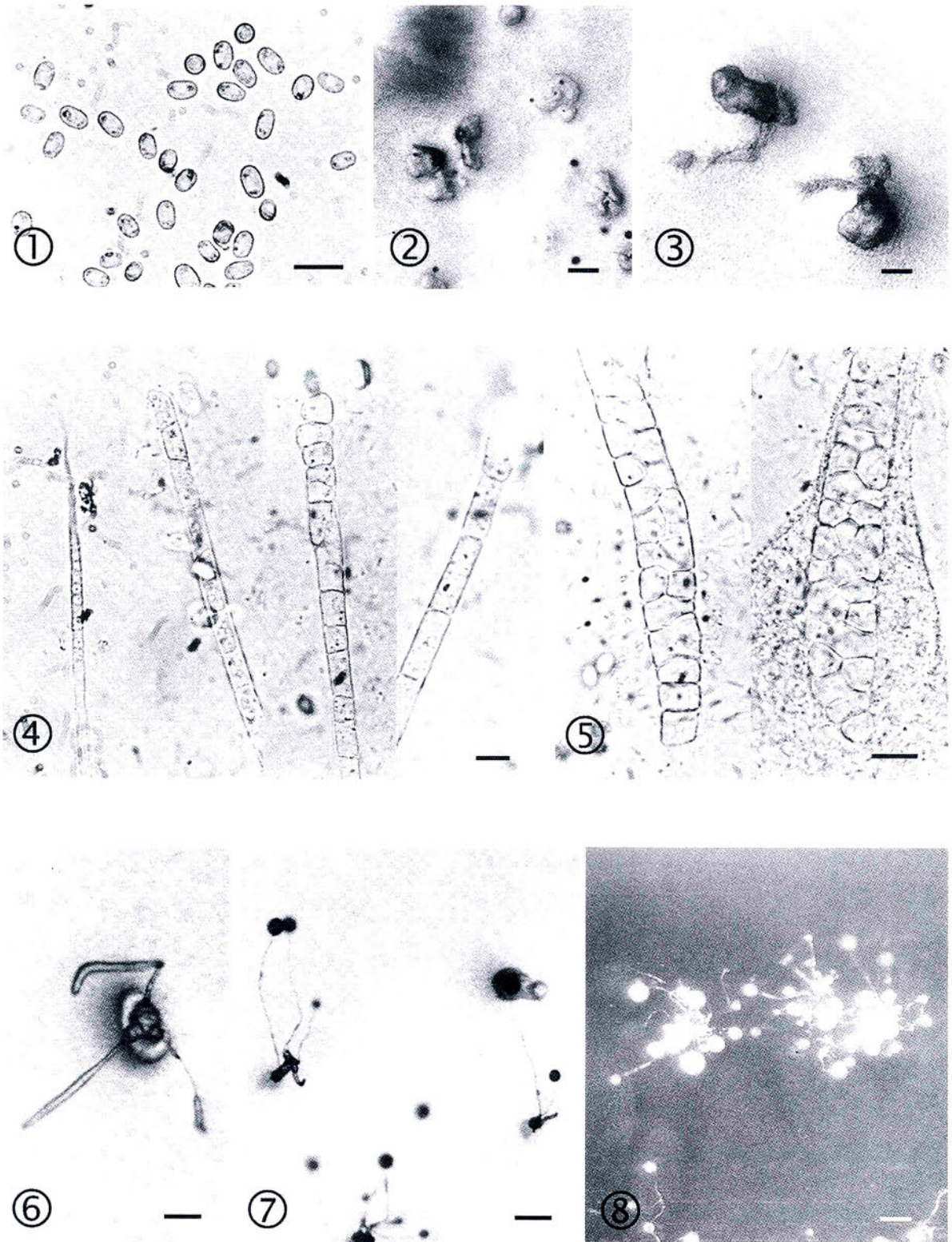


Fig. 1. *Dictyostelium minutum* Raper. 1. Spores. Bar=10 μ m. 2. Aggregation of myxamoebae. Bar=350 μ m. 3. Mold like pseudoplasmodia. Bar=125 μ m. 4. Sorophore tips. Bar=5 μ m. 5. Sorophore bases. Bar=10 μ m. 6. Pseudoplasmodium with sorophores formation. Bar=100 μ m. 7. Mature sorocarps. Bar=200 μ m. 8. Clustered sorocarps. Bar=250 μ m.

mm in length, tapering from bases to tips, consisting of a single tire of cells except in basal part; bases clavate, 7.7-17.6 (-24.2) μm in diam at a level 50 μm above the bottom; tips clavate, obtuse or piliform, 2.4-4.6 μm in diam at a level 50 μm below the tip. Sori white, globose, 20-170 μm in diam. Spores hyaline, oblong, usually 1.4-2.0 times longer than broad, mostly 4.1-6.3 \times 2.7-4.0 μm , with inconspicuous consolidated polar granules. Pseudoplasmodia mold-like, 0.3-0.6 mm in diam, centralized, migrating with sorophore formation.

Habitat: In forest soils of Taoyuan County.

Specimen examined: Tai 2000-6.

Distribution: Africa: Kenya, Tanzania, Uganda. America: Canada, Mexico, U. S. A. Asia: India, Japan, Nepal, Taiwan. Europe: Italy, Portugal, Spain, Switzerland, Yugoslavia.

Note: This species is characterized by its small sorocarps, spores with polar granules, and mold-like pseudoplasmodia.

Dictyostelium clavatum Hagiwara, Bull. Natn. Sci. Mus. Tokyo, Ser. B, 18(1): 1-6, 1992.

棍棒頭網柱細胞黏菌 Fig. 2

Sorocarps usually solitary, sometimes gregarious, mostly unbranched, sometimes sparsely branched, erect, rarely prostrate, phototropic. Sorophores colorless, sinuous, 0.8-2.0 (-3.2 mm) mm in length, tapering from clavate bases to clavate tips, bases clavate, 20.8-38.8 μm in diam at a level 50 μm above the bottom; tips clavate, 8.3-22.2 μm in diam at a level 50 μm below the tip. Sori white, globose, 83-200 (-233) μm in diam. Spores hyaline, oblong, usually 1.7-2.0 times longer than broad, mostly 5.5-6.6 \times 2.8-3.3 μm , without polar granules. Pseudoplasmodia, 1.0-3.5 mm in diam, centralized, migrating with sorophore formation.

Habitat: In forest soils of Taoyuan County.

Specimen examined: Tai 2000-7.

Distribution: Nepal and Taiwan.

Note: This species is characterized by the medial sorophores which are not exceeding 4 mm in length, the clavate sorophore tips and the small spores. But Taiwanese isolates examined in this study have somewhat larger spore size than the type specimen reported by Hagiwara (1992).

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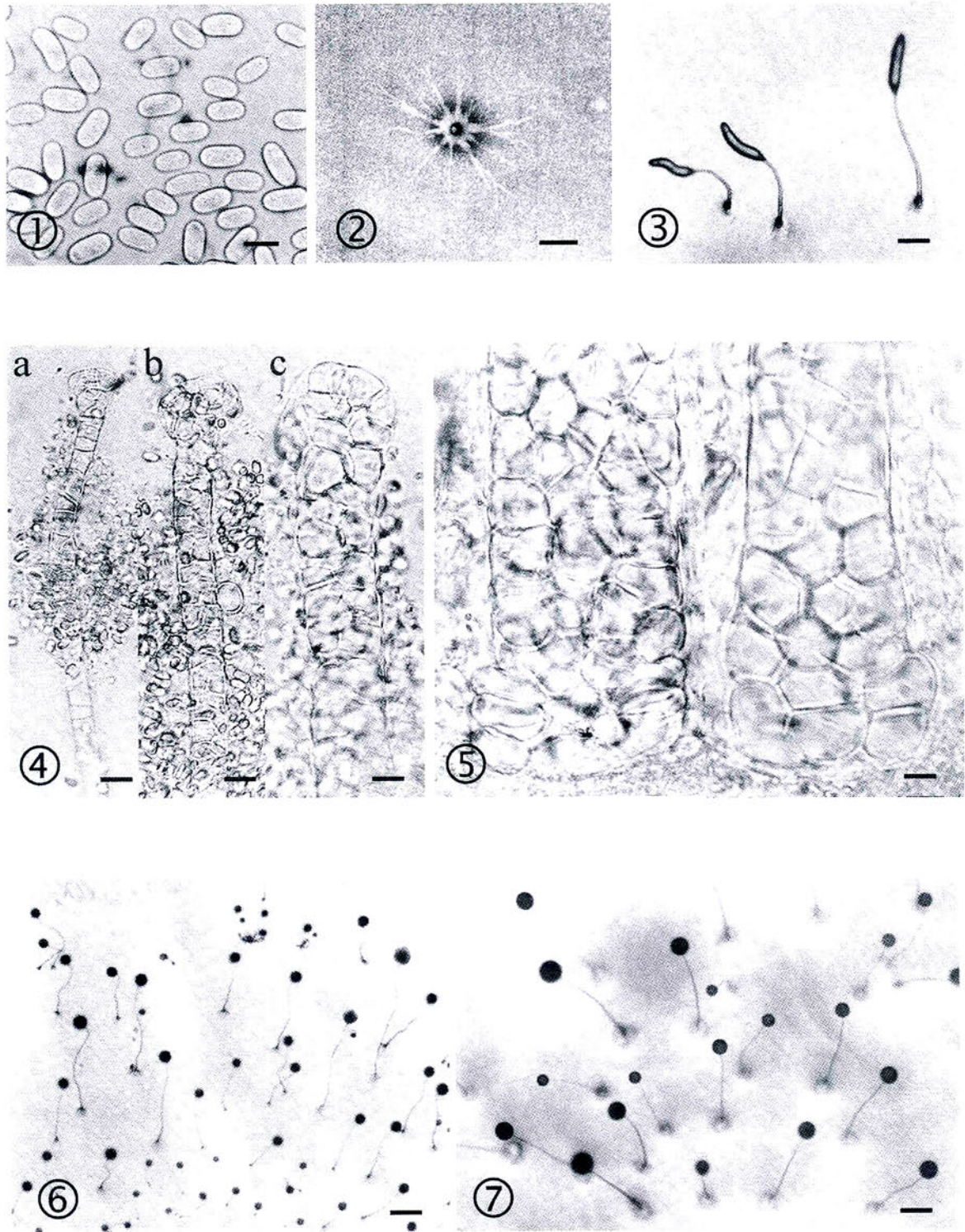


Fig. 2. *Dictyostelium clavatum* Hagiwara. 1. Spores. Bar=5 μ m. 2. Aggregation of myxoamoebae. Bar=400 μ m. 3. Pseudoplasmodia. Bar=250 μ m. 4. Sorophore tips. 4a: Bar=12 μ m. 4b: Bar=12 μ m. 4c: Bar=6 μ m. 5. Sorophore bases. Bar=5 μ m. 6. Growth habits. Bar=600 μ m. 7. Mature sorocarps. Bar=200 μ m.

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記台灣網柱細胞黏菌(I)：細小網柱細胞黏菌、棍棒頭網柱細胞黏菌

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摘 要

本文報導從台灣桃園地區森林土壤表層，首次分離的兩種網柱細胞黏菌，細小網柱細胞黏菌 (*Dictyostelium minutum* Raper) 和棍棒頭網柱細胞黏菌 (*Dictyostelium clavatum* Hagiwara)，它們皆屬台灣新紀錄種。文中記述兩種形態特徵之檢視，並有附圖說明。標本和純培養均儲存於國立台灣師範大學生物系真菌實驗室內。

關鍵詞：細小網柱細胞黏菌、棍棒頭網柱細胞黏菌、網柱細胞黏菌、桃園、台灣。

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