

Physarum taiwanianum sp. nov.

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ABSTRACT: *Physarum taiwanianum* Chung & Liu sp. nov. found from northern seashore of Taiwan is described and illustrated. It is characterized by white, ovoid sporangia occurring on dead grass leaves, an orange calcareous stalk, irregular dehiscence, and spinulose spores, 7-7.5 μm in diam.

KEY WORDS: Myxomycetes, New species, Physarales, *Physarum taiwanianum*, Taipei, Taiwan.

INTRODUCTION

During an excursion to northern seashore of Taipei County, we found some sporocarps of Myxomycetes from dead grass leaves. Among them there is a peculiar collection which can be referred to the genus *Physarum*. It does not resemble any *Physarum* species known. Therefore a new taxon is proposed and described here. The new species is characterized by white, ovoid sporangia occurring on dead grass leaves, an orange calcareous stalk, irregular dehiscence, and spinulose spores, 7-7.5 μm in diam.

MATERIALS AND METHODS

Materials were collected directly from the field. Measurements were done with an ocular micrometer. Sporangia were pretreated with 95% ethanol and mounted in 2% KOH. Acetic anhydride was applied to fragments of stalk to test the nature of the calcium deposit. Microscopic characteristics were examined under light microscope and also by Normaski when necessary. Description of spore surface ornamentation and measurement of spore diameter were done under an oil immersion objective (X1000). The diameter of spores does not include the ornamentation.

RESULTS

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Sporangia gregaria, ovoidea stipitata, 0.7-0.9 mm alta, 0.3-0.35mm diam. Peridium simplex, calcareous, ravidio-album, dehiscencia irregularis vel petaloidea. Stipes aurantiaco-luteus, circa 0.4 mm, calce impletus. Columella nulla. Capillitium reticulum, filis incoloratis, cum nodis majoribus, angularibus, albis. Sporae 7-7.5 μm diam., spinulosae. Plasmodium non visum.

Holotype: Taipei County, Shih-men, 121° 34' E, 25° 18' N, 28 X 1995, on dead grass leaves (Poaceae) near seashore, *Chung M935* (TAI) in the Herbarium of Mycology Laboratory, Department of Botany, National Taiwan University, Taipei.

Sporangia gregarious, ovoid, stalked, total height 0.7-0.9 mm, 0.3-0.35 mm in diam. *Peridium* single, calcareous, grayish white; dehiscence irregular or petaloid, leaving a persistent but small cup-like structure. *Stalk* expanded at both top and base, bright orange in reflective light, longitudinally striate, about half of total height, translucent in transmitted light (lack of dark particles), filled with white lime granules. *Columella* none. *Capillitium* physaroid, reticulate, the connecting threads hyaline, nodes large, angular, white. *Sporae* dark brown in mass, 7-7.5 μm in diam., spinulose. *Plasmodium* not seen.

Distribution: Known only from type locality.

Note: Addition of acetic anhydride cause the lime granules in stalk produce many bubbles, suggesting it may be composed of CaCO_3 .

DISCUSSION

Superficially this species is similar to *Physarum scoticum* Ing, especially the orange stalk. But *P. taiwanianum* deviates from *P. scoticum* in the following ways: (1) a more or less smooth, thin peridium without lime plates (*P. scoticum* with thick, distinct lime plates); (2) smaller spores (spores of *P. scoticum* 9.5-10.5 μm in diam.); (3) a foliicolous habitat (lignicolous in *P. scoticum*). Other *Physarum* species, such as *P. globuliferum* (Bulliard) Persoon, *P. leucophaeum* Fries, *P. leucopus* Link, *P. pusillopsae* Mitchell & Nannenga-Bremekamp, and *P. tropicale* Macbride, are all too different in stalk texture and/or spore size. *Craterium aureum* (Schumacher) and Rostafinski differs from *P. taiwanianum* in having larger spores (8-10 μm in diam.), yellow peridium and lime nodes.

When *Physarum psittacinum* var. *fulvum* Lister & Lister was first described from Ichinono, Kii Prefecture, Japan, Lister and Lister (1906) wrote: 'On dead wood... A beautiful form with the usual iridescent sporangia and orange-red lime-knots...', which made it quite different from *P. taiwanianum*. However, Nannenga-Bremekamp (1974) emended this variety as also occurring on dead leaves and with white lime nodes and peridium, which made it similar with *P. taiwanianum*. It would be interesting to examine the Netherlands collections. At present *P. taiwanianum* is delimited from that variety by smaller spores (in *P. psittacinum* 8-10 μm in diam.) and a calcareous stalk.

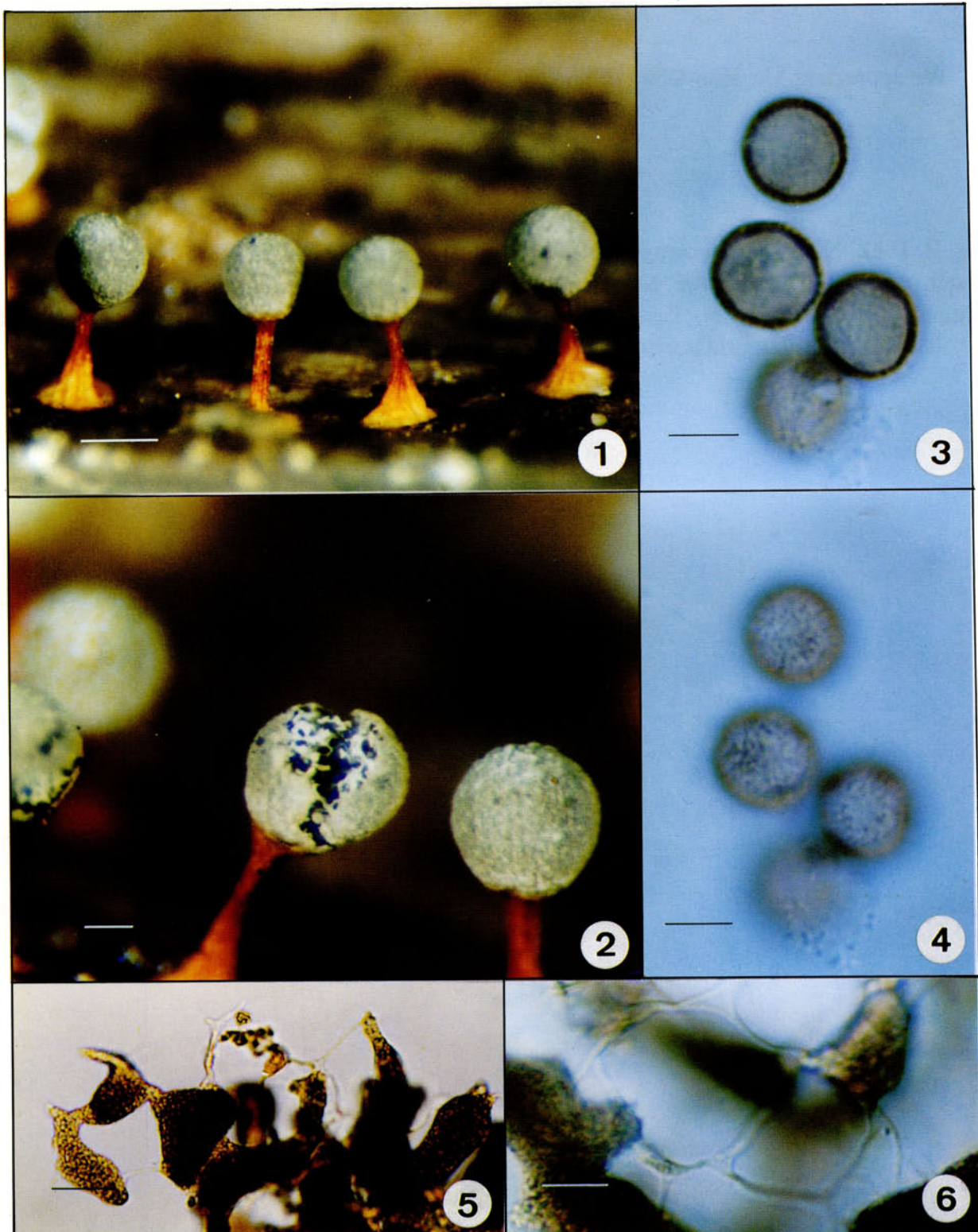


Plate I. Light micrographs of *Physarum taiwanianum* sp. nov.

Fig 1. Habit of sporangia, bar = 0.25 mm.

Fig 2. Sporangia, bar = 0.1 mm.

Fig 3. Spores, marginal view, bar = 5 μ m (normaski).

Fig 4. Spores, surface view, bar = 5 μ m (normaski).

Fig 5. Capillitium, bar = 25 μ m.

Fig 6. Capillitial threads, bar = 50 μ m (normaski).

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絨泡黏菌屬一新種：臺灣絨泡黏菌

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摘 要

本文報導在臺灣北海岸的枯草葉上發現一絨泡黏菌屬之新種 *Physarum taiwanianum* Chung & Liu sp. nov.。其主要的特徵為不規則開裂的白色卵形孢子囊、橘色有鈣質的柄、以及有小刺的孢子。

關鍵詞：絨泡黏菌目，新種，黏菌，臺北，臺灣，臺灣絨泡黏菌。

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