

# ***Tubeufia dactylariae* sp. nov. and *Acanthostigma scopulum*, a new record of Taiwan**

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**Abstract.** A holomorphic fungus connected with a peculiar anamorph resembling the form-genus *Dactylaria* was discovered and described as a new species of the genus *Tubeufia*. In addition, a new recorded ascomycete *Acanthostigma scopulum* was also illustrated and described.

**Keywords:** *Acanthostigma*; New record; New species; Taiwan; *Tubeufia*.

Two interesting ascomycetous fungi were found during our survey on Taiwan freshwater microfungi. One is a new species of *Tubeufia*, whereas the other, *Acanthostigma scopulum*, is a new record of Taiwan. They are described and illustrated in this paper.

## ***Tubeufia dactylariae* H. S. Chang sp. nov. (Figure 1, A-H)**

Pseudothecia superficialia, solitaria vel aggregata, globosa vel obovata, brunnea vel atrobrunnea, laevia, carnosa, 100-120 µm diam × 150-200 µm alta. Ostiola leviter papillata. Ascii bitunicati, clavati, 80-100 × 9-12 µm. octospori. Ascospores fusiformes, 32-36 × 6-7 µm, hyalinae vel dilute brunneae, laeves, 7-8 septatae, rectae vel leviter curvatae.

Colonies olivaceous to dark brown on V-8 juice agar, hyphae immersed, smooth. Pseudothecia superficial, solitary to aggregated, clavate to pyriform, brown, smooth, fleshy, with black superficial hyphae growing into the substrate from the base of pseudothecia, 150-200 × 100-120 µm; peridium composed of 4 to 5 layers of pseudoparenchymatous cells. Ostioles slightly papillate. Ascii bitunicate, clavate to broadly cylindrical, 8-spored, 80-100 × 9-12 µm. Ascospores fusiform, 32-36 × 6-7 µm, hyaline to pale brown, smooth, 7-8 septate, straight or slightly curved, not constricted at septa.

*Dactylaria-like Anamorph.* This fungus formed conidial state on V-8 juice agar or on autoclaved corn leaf sections (3 × 2 cm) placed on Sach's medium. Conidiophores micronematous, mononematous, arising laterally from undifferentiated hyphae, stout, simple or branched, hyaline. Conidiogenous cells mono- or polyblastic, hyaline, thin walled. Conidia hyaline, smooth and thin walled, cylindrical, upper part bent and tapered towards the rounded end, 3-4 septate, 18-26 × 4-5 µm.

**Specimen examined.** TAIWAN. TAIPEI COUNTY: Wulai, on unidentified decayed twig, Jan 21, 1992, H. S. Chang, WL0121-92 (HOLOTYPE, HAST).

**Notes.** Instead of forming helicosporous conidia as most of the species in the genus *Tubeufia* (Barr, 1980; Sivanesan, 1983), this fungus forms an undescribed mitosporic species closely similar to species of *Dactylaria* in its conidiogenous cell and conidiophore forms. However, its conidiophores and conidiogenous cells are also very similar to those of the genus *Helicomyces*, i.e., formed as short, lateral branches of the repent mycelium, except that the conidia are not helical but cylindrical with a rounded base and a bend towards the tip. The conidial states of the genus *Tubeufia*, in most cases, belong to the form-genera *Helicosporium* and *Helicoma*. However, a *Monodictys* anamorph has also been reported to be associated with *T. amazonensis* (Samuels et al., 1979). *Taphrophila cornucapreolli*, a fungus closely related to *Tubeufia*, was also demonstrated in culture to be connected with a *Mirandina* anamorph highly similar to *Dactylaria* (Scheuer, 1991).

***Acanthostigma scopulum* (Cooke & Peck) Peck, Bull. New York State Mus. 1: 22. 1887. (Figure 2, A-D)**

*Sphaeria scopula* Cooke & Peck, Ann. Rep. New York State Mus. 32: 51. 1880.

*Lasiosphaeria scopula* (Cook & Peck) Sacc., Syll. Fung. 9: 852. 1891.

*Tubeufia scopula* (Cooke & Peck) M. E. Barr, Mycotaxon 12: 1964. 1980.

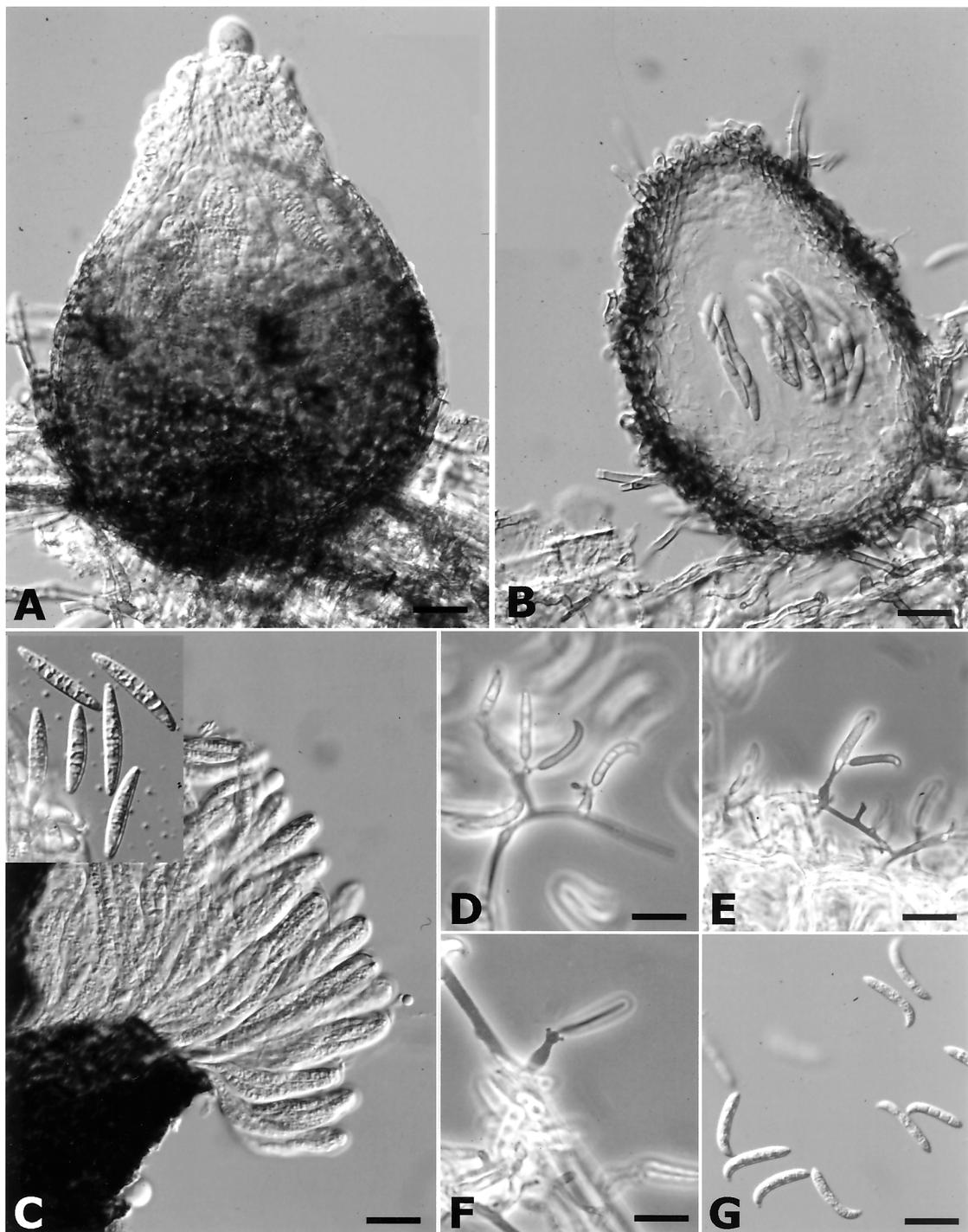
Pseudothecia solitary, superficial, globose to subglobose, with aseptate or unisepitate setae mostly distributed on upper half of ascocarps, 130-180 µm high × 100-120 µm diam. Peridium thick, composed of up to 5 layers of pseudoparenchymatous cells. Ostioles papillate. Ascii bitunicate, 8-spored, broadly cylindrical, 70-80 × 12-14 µm. Cellular pseudoparaphyses numerous among asci,

branching, anastomosing. Ascospores fusiform to cylindrical, smooth, hyaline, 9-13 septate,  $46-54 \times 4-5 \mu\text{m}$ .

**Specimen examined.** TAIWAN. TAIPEI COUNTY: Wulai, on decayed twig in a stream, Mar. 25, 1995, H. S. Chang, WL0325 (HAST).

**Notes.** The pseudothecia, asci, ascospores, and cellular pseudoparaphyses of the Taiwan isolate closely resemble those of *A. scopulum* as reported by Barr (1980).

Nonetheless, the helicosporous hyphomycetous state was not observed in the present isolate. A few setae on the ascomata of the present isolate are 1-septate, and the shape of setae is quite different from those illustrated by Réblová and Barr (2000). Furthermore, the present isolate formed pseudothecia and setae in culture. The species of *Tubeufia* usually produces helicon-type conidia but no ascomata under laboratory conditions. Based on the char-



**Figure 1.** *Tubeufia dactylariae*. A, Pseudothecium; B, Vertical section of pseudothecium; C, Ascospores and asci; inset contains ascospores free from asci; D-F, Conidiophores and conidia; G, Conidia. Scale bars represent  $20 \mu\text{m}$ .

acteristics mentioned above, the fungus is tentatively identified as *Acanthostigma scopulum*.

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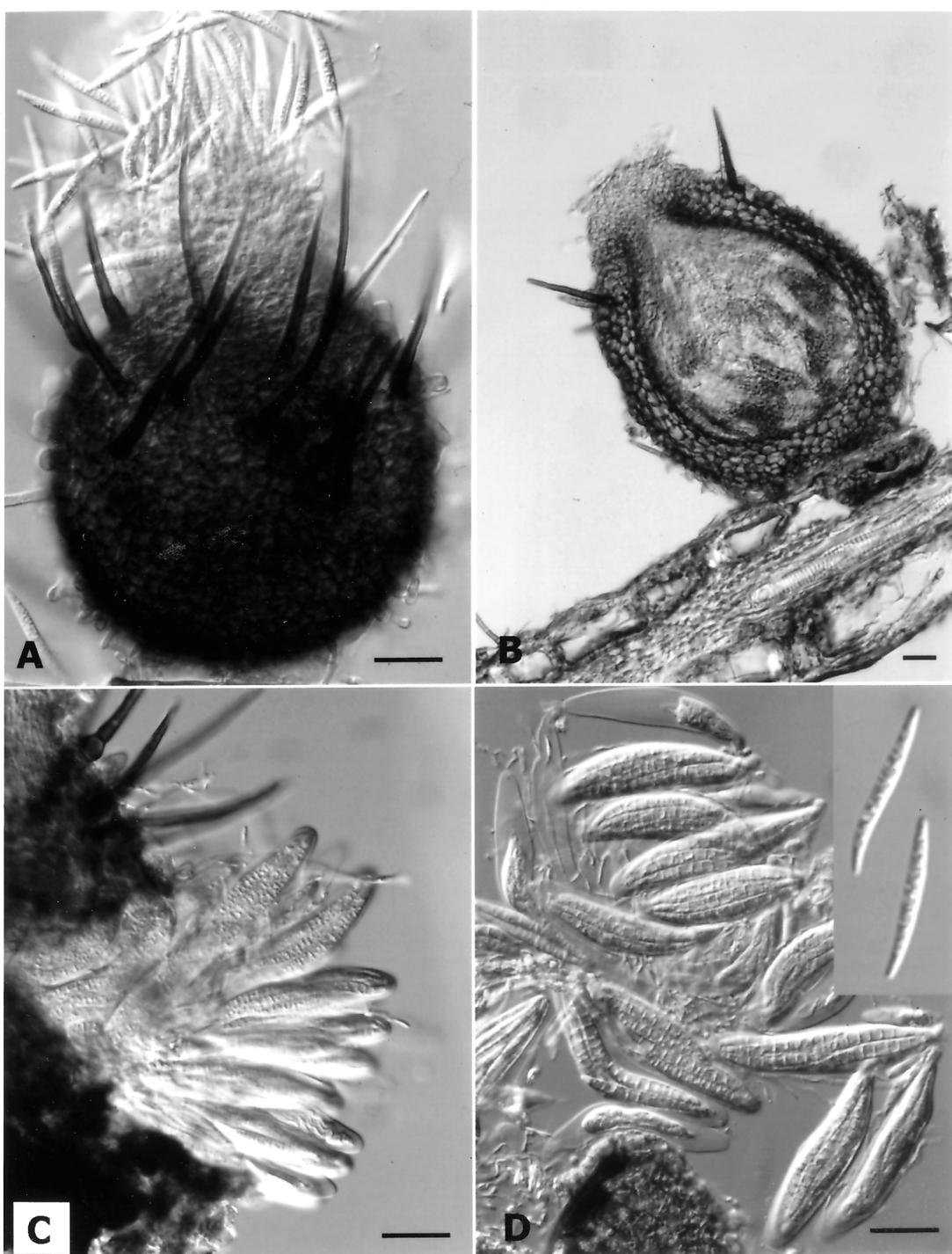
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**Figure 2.** *Acanthostigma scopulum*. A, Pseudothecium and released ascospores; B, Vertical section of pseudothecium; C, D, Ascospores; inset in D contains ascospores free from asci. Scale bars represent 20 µm.

子囊菌新種 *Tubeufia dactylariae* 及台灣新記錄種子囊菌  
*Acanthostigma scopulum*

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本文記述並圖示一新子囊菌 *Tubeufia dactylariae* 以及台灣新記錄種子囊菌 *Acanthostigma scopulum*。

**關鍵詞：**子囊菌新種；新記錄種；台灣。