

A new species of *Podospora* from Taiwan

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Abstract. A new species of *Podospora*, *P. multipilosa* is described and illustrated. It is characterized by large tufted hairs composed of swollen cells and ascospores with a slender pedicel. A key to the 22 *Podospora* species recorded thus far from Taiwan is also provided.

Keywords: Fungi; *Podospora multipilosa*; *Schizothecium*; Sordariales; Taiwan.

Introduction

Twenty-one species of *Podospora* have been reported in Taiwan (Wang, 1992, 1994, 2000; Chang and Wang, 2003). A new species, *P. multipilosa* is described and illustrated in this paper. Specimens were collected from dung samples incubated in moist chambers and examined in fresh condition. Microscopic structures were studied by light microscopy, and measurements were made in distilled water mounts. Terms used for the description follow Lundqvist (1972). Voucher specimens are deposited at the herbarium of the National Museum of Natural Science, Taichung, Taiwan (TNM).

Podospora multipilosa J.H. Chang & Y.Z. Wang, sp. nov.
(Figures 1, 2)

Etymology. Latin, *multi* = multiple and *pilosa* = pilose, referring to the multiple tufted hairs of the perithecium.

Perithecia dispersa vel gregaria, superficialia, pyriformia, 900-1700 × 675-1060 μm, pili cristata, brunnea, agglutinata, fasciculate ex toto, 400-500 × 160-170 μm. Colli atra, 130-200 μm alta. Peridium pseudoparenchymatosum, membranaceum, semitranslucidum, viridulum ad olivacibrunneum. Asci octospori, clavati ac stipitati longi, 295-400 × 32-38.5 μm, exannulati apicales. Ascosporae ellipsoideae, fuscae, 18-26 × 12-15 μm, pedicelli angustii, recti, baculiformes, 19.5-24.5 × 2-2.5 μm; cauda superae flagelliformes, eccentricae 28.5-35 × 2.5-4.5 μm, cauda basalis quasi gelatinosis vaginatis circumdare pedicellis, inaequalis an undatis aliquando. Poro germinali apicali, 2-2.5 μm in diametro.

Perithecia scattered or gregarious on substrate, superficial, pyriform, 900-1700 × 675-1060 μm, almost

entirely covered by brown, agglutinated, fasciculate, tufted hairs, 400-500 × 160-170 μm. Necks dark, 130-200 μm high. Peridium greenish to olivaceous brown, pseudoparenchymatous, membranous, semi-transparent. Asci 8-spored, clavate and long-stalked, 295-400 × 32-38.5 μm, lacking apical ring. Ascospores dark brown, ellipsoid, 18-26 × 12-15 μm, with narrow, erect, baculiform pedicel, 19.5-24.5 × 2-2.5 μm; upper cauda lash-like, eccentric, 28.5-35 × 2.5-4.5 μm, sometimes inconspicuously striate under oil microscope; basal cauda as a gelatinous sheath surrounding pedicel, irregular or sometimes undulate. Germ pore apical, 2-2.5 μm in diam.

Colonies on 2% Difco malt extract agar spreading slowly, reaching 1.1-1.75 cm in diam. in 3 weeks at room temperature, grayish olivaceous to dark olivaceous, mostly submerged; yellowish olivaceous to olivaceous on reverse. Hyphae occasionally swollen, inflations globose, 6-12 μm in diam. Phialides borne singly and sparsely from aerial hyphae; hyaline, small, flask-shaped, 7-11 × 3.5-5 μm. Conidia produced at the apex of phialides; globose to ovoid, hyaline, 2-3 μm in diam.

Holotype. Kaohsiung, Mailan forestry industrial road, on *Cervus unicolor swinhoei* (Formosan sambar) dung, J.H. Chang; Jong 23, Oct. 24, 2003 (TNM F16503).

Additional specimens examined. Kaohsiung, Mailan forestry industrial road, on *Cervus unicolor swinhoei* (Formosan sambar) dung, J.H. Chang; Jong 24, Nov. 20, 2003 (TNM F16504). Mailan forestry industrial road, J.H. Chang; Jong 32, Feb. 25, 2004 (TNM F16505). Mailan forestry industrial road, on *Muntiacus reevesi micrurus* (Formosan Reeve's muntjac) dung, J.H. Chang; Jong 27, Feb. 25, 2004 (TNM F16506).

This species is characterized by large tufted hairs composed of swollen cells and ascospores with a slender pedicel. It is a member of the *P. conica* group (= *Schizothecium*) (Lundqvist, 1972; Bell and Mahoney, 1995), but the olivaceous peridial color is unusual among

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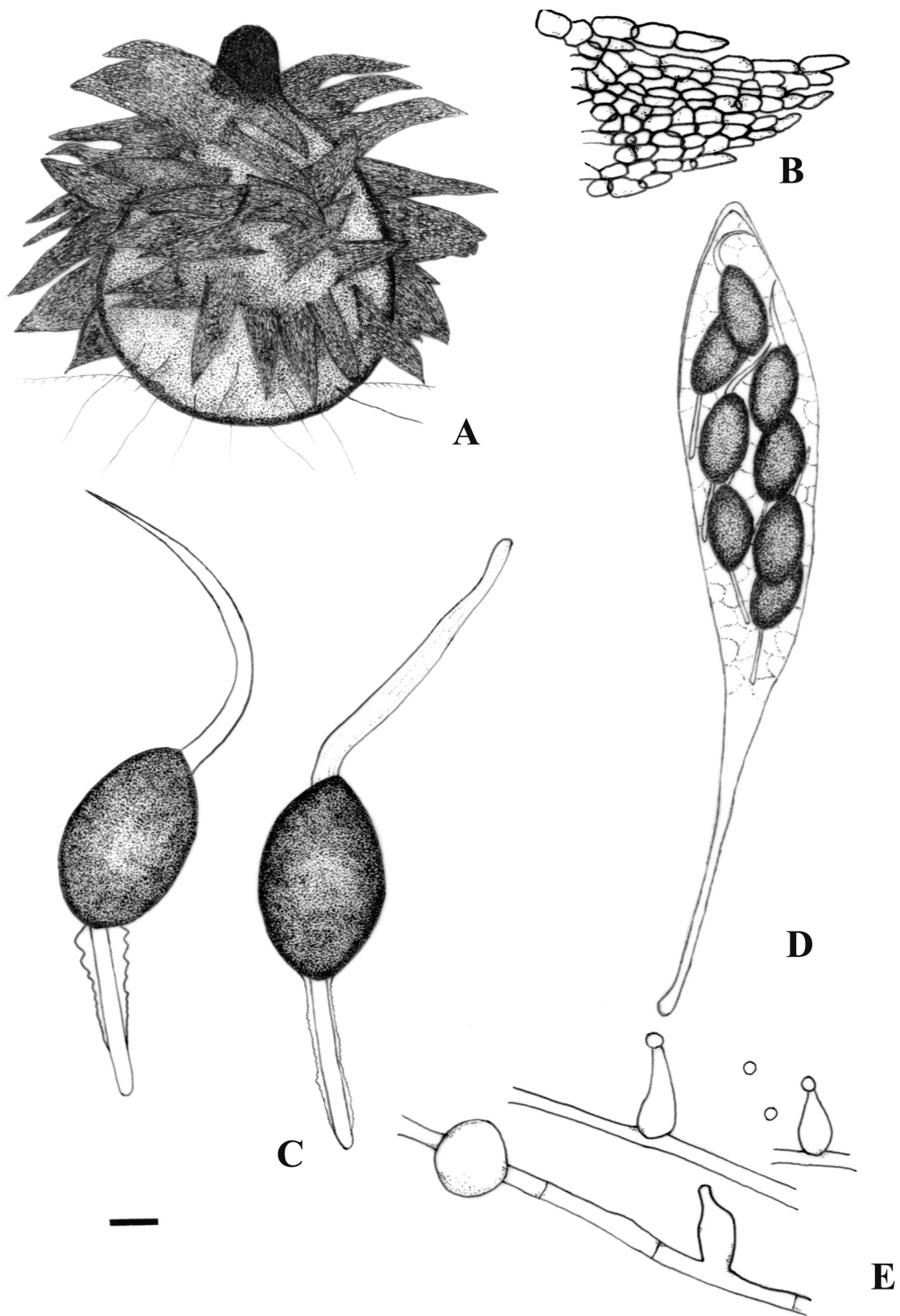


Figure 1. *Podospora multipilosa*. A, perithecium; B, large tufted hair of swollen cells; C, ascospores; D, ascus containing eight ascospores; E, phialides and a globose inflation formed on the hypha. Scale bar: A = 150 μm , B, D = 14 μm , C = 5 μm , and E = 8 μm .

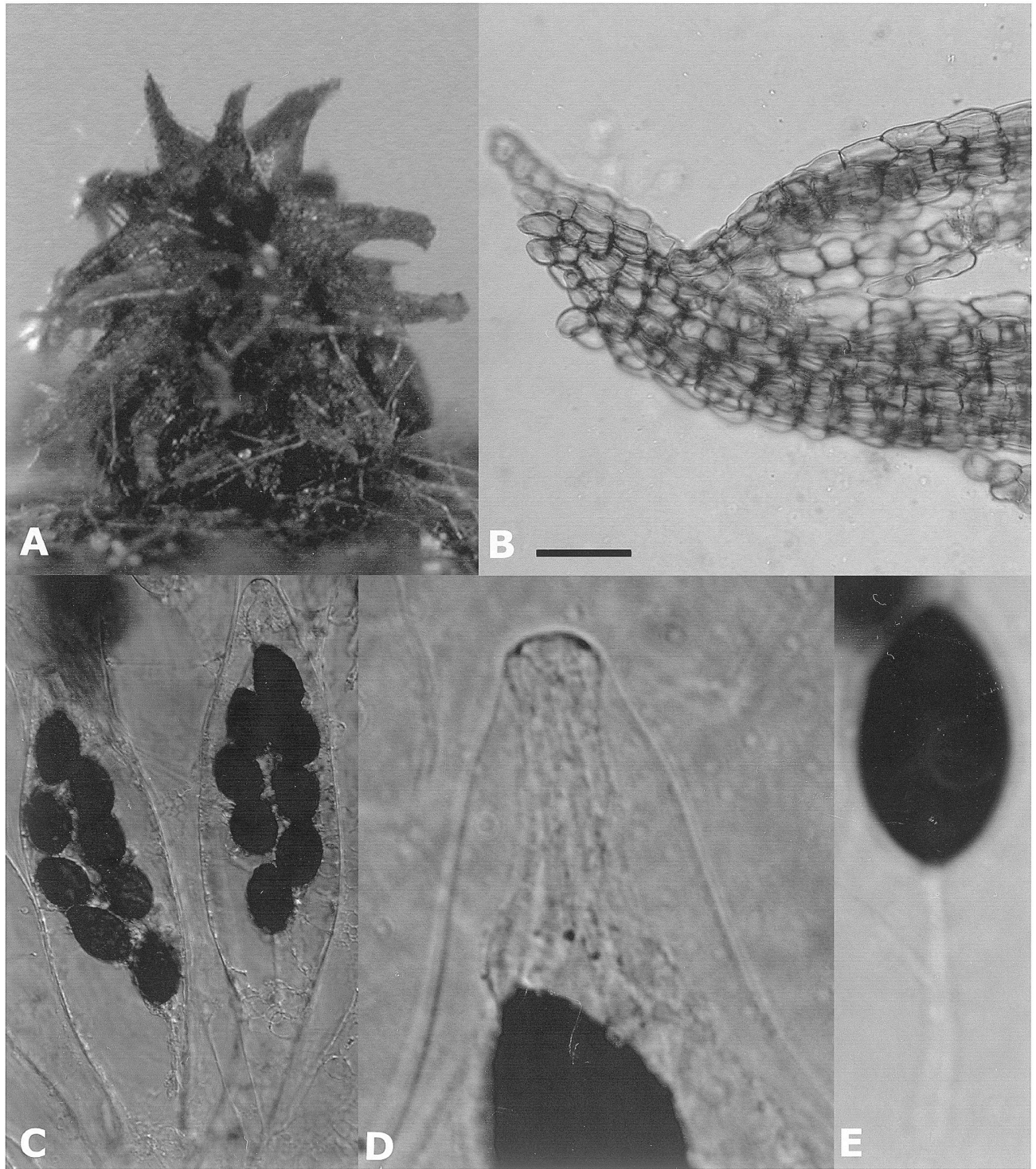


Figure 2. *Podospora multipilosa*. A, perithecium on substrate; B, large tufted hairs; C, asci; D, upper part of an ascus; E, ascospore. Scale bar: A = 300 μ m, B = 30 μ m, C = 25 μ m, and D, E = 8 μ m.

the species in this group. *Podospora aloides* (Fuckel) J. H. Mirza & Cain appears to be closely related to this species, but it has larger ascospores (31-37 \times 16-20 μ m) with a shorter pedicel (12-14 \times 2 μ m), a single and lash-like basal cauda, and perithecial hairs (ca. 230 \times 70 μ m)

mainly covering the neck portion (Mirza and Cain, 1969; Bell and Mahoney, 1995). *Podospora conica* (Fuckel) A. E. Bell & Mahoney differs in having larger ascospores (22-29 \times 13-18 μ m) and shorter perithecial hairs (30-110 μ m) (Bell and Mahoney, 1995).

Key to species of *Podospora* from Taiwan (inspired by Mirza and Cain, 1969; Wang, 2000).

1. Peridium thin, consisting of swollen cells; hairs agglutinated 2
 Peridium consisting of angular cells; hairs if present, not agglutinated 6
2. Asci 8-spored 3
 Asci 32- or 64-spored 5
3. Agglutinated hairs up to 400-500 μm long *P. multipilosa* J. H. Chang & Y. Z. Wang
 Agglutinated hairs shorter 4
4. Ascospores more than 30 μm long; upper cauda grooved *P. curvuloides* Cain
 Ascospores 25-29.5 \times 17-20 μm ; upper cauda not seen *P. aff. conica* (Fuckel) A. E. Bell & Mahoney
5. Asci 32-spored; ascospores 20-24 \times 10-13 μm *P. dakotensis* (Griffiths) J. H. Mirza & Cain
 Asci 64-spored; ascospores 21-24 \times 13-15 μm *P. formosana* Y. Z. Wang
6. Hairs on the neck scattered, short, straight and erect 7
 Hairs not as above 10
7. Hairs inflated at the apex; ascospores 24-30 \times 4-6 μm *P. inflatula* Cain
 Hairs not inflated at the apex 8
8. Asci 8-spored; ascospores 45-57 \times 22-35 μm *P. fimiseda* (Ces. & De Not.) Niessl
 Asci containing more than 8 spores 9
9. Asci 128-spored; ascospores 17-19 \times 10-12 μm *P. setosa* (G. Winter) Niessl
 Asci 256-spored; ascospores 11-17.5 \times 7.5-10 μm *P. araneosa* (Cain) Cain
10. Hairs tuberculate; upper cauda lyre-shaped 11
 Hairs not tuberculate; upper cauda not lyre-shaped 14
11. Asci 8-spored 12
 Asci 32-spored 13
12. Ascospores 25-34 \times 14-16 μm ; with a cauda attached at the end of pedicel
 *P. argentinensis* (Speg.) J. H. Mirza & Cain
 Ascospores 34-39 \times 20-22.5 μm ; without a cauda attached at the end of pedicel
 *P. decipiens* (G. Winter ex Fuckel) Niessl
13. Two to four caudae attached to the base of the pedicel, 10-16 \times 4-8 μm *P. myriasporea* (H. & P. Crouan) Niessl
 Five caudae attached to the base of the pedicel, 8-11.5 \times 1.5-2 μm *P. pleioasporea* (Winter) Niessl
14. Hairs in tufts 15
 Hairs not in tufts, flexuous or lacking 18
15. Asci 4-spored *P. anserina* (Ces. ex Rabenh.) Niessl
 Asci containing more than 4 spores 16
16. Asci 256-spored; ascospores 14-18 \times 10-11 μm *P. curvicolla* (G. Winter) Niessl
 Asci 8-spored 17
17. Ascospores 24.5-32 \times 15-17.5 μm ; pedicel swollen in middle..... *P. prethopodalis* Cain
 Ascospores 32.5-50 \times 18.75-25 μm ; covered by short filaments..... *P. immersa* (Stratton) Cain
18. Perithecia glabrous; cauda absent..... *P. globosa* (Masse & E. S. Salmon) Cain
 Perithecia not glabrous; ascospores with at least 1 cauda 19
19. Ascospores with 4 upper caudae 20
 Ascospores with 1 upper cauda 21
20. Ascospores with 4 basal caudae.....*P. communis* (Speg.) Niessl
 Ascospores with 1 basal cauda.....*P. hyalopilosa* (R. Stratton) Cain
21. Upper and basal caudae composed of numerous filaments, and enveloping ascospores
 *P. longicaudata* (Griffiths) Cain
 Caudae not as above; pedicels 44-64 μm long.....*P. dolichopodalis* J. H. Mirza & Cain

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台灣產一新種柄孢殼菌

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本文描述與圖示一新種糞生核菌，多毛柄孢殼菌 (*Podospora multipilosa*) 是由台灣水鹿與山羌糞便培養採集而來，此種的特徵包括子囊殼表面分布有膨脹細胞組成的成簇毛和子囊孢子具細長的小柄，內文並提供 22 種台灣已記錄的柄孢殼菌種類的檢索表。

關鍵詞：真菌；多毛柄孢殼菌；裂殼菌屬；糞殼菌目；台灣。