Wijkia tanytricha (Mont.) Crum (Musci, Sematophyllaceae), a new record to the moss flora of Taiwan

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(Received October 11, 1995; Accepted December 14, 1995)

Abstract. Wijkia tanytricha (Mont.) Crum is a new record to the moss flora of Taiwan. The species is distinguished from W. deflexifolium (Ren. & Card.) Crum, the other species of Wijkia in Taiwan, and characterized by having broadly ovate leaves with a long, filiform acumen and enlarged alar cells. Wijkia tanytricha, distributed in southeast Asia, is related to W. carlottae, a Canadian species, in sharing foliose pseudoparaphyllia and leaf shape. No qualitative characteristics can distinguish these two taxa, although the plants, leaves, and leaf cells of Wijkia tanytricha are larger than those of W. carlottae. I suppose that W. carlottae may be conspecific with W. tanytricha.

Keywords: New record; Taiwan; Wijkia; Wijkia tanytricha; Wijkia carlottae.

Introduction

Wijkia Crum, a moss genus of the Sematophyllaceae, is distributed mainly in the Old World (25 species) and the Americas (one species in North America and three species in South America) (Buck, 1986). Wijkia is distinguished from other genera of the Sematophyllaceae and characterized by having unevenly thickened exothelial cells (vs. collenchymatous cells in other genera of Sematophyllaceae) with thick vertical walls and thin transverse ones (Buck, 1986) and differentiated stem- and branch-leaves. Three sections were classified (Buck, 1986): sect. Wijkia based on type W. extenuata (Brid.) Crum; sect. Andoe based on type W. tanytricha (Mont.) Crum; and the African sect. Acanthocladiopsis, based on type W. trichocoleoides (C. Muell.) Crum. Two species were previously known as Acanthocladium sensu Broth. (NatürL Pflanzenfam. ed. 2, 11: 412. 1925, non Acanthocladium Mitt., Proc. Linn. Soc. N. S. Wales 7: 102. 1882; an illegitimate homonym of flowering plant genus replaced by Wijka, cf. Crum, 1971) from Taiwan, i.e. A. deflexifolium (Mitt.) Ren. & Card. and A. semitoritipilum (C. Muell.) Fleisch. (cf. Kuo and Chiang, 1987). Gangleee (1980) excluded Hypnum semitoritipilum C. Muell. nom. nud. (the latter species). In my survey of bryoflora of Mt. Yushan (Chiang, 1989), the highest mountain in Taiwan, Wijkia tanytricha (Mont.) Crum, a new record, is found.

Taxonomy of Wijkia in Taiwan

Wijkia is distinguished from its relative, Brotherella, by having unevenly thickened exothelial cells, thin-walled alar cells, and a contracted leaf-base. Two species of Wijkia are distributed in Taiwan.


Plants medium to robust; yellow-green, shiny. Stems creeping, irregularly bipinnately branched; pseudoparaphyllia foliose. Stem- and branch-leaves differentiated; stem leaves oblong-lanceolate to lanceolate, apex abruptly tapering; branch leaves lanceolate to ovate-lanceolate, gradually acuminate; costa double or absent; cells linear; alar cells inflated, colored. Dioicous. Setae long, smooth; capsules horizontal, cylindrical, asymmetric, exothelial cells unevenly thickened; operculum rostrate; peristomes double, exostome teeth crossstriolate below, papillate above, endostomes with a high basal membrane, segments keeled, cilia 2.

Key to Species of Wijkia Crum in Taiwan

1. Leaf ovate-lanceolate with tips deflexed
   .................................................................................. W. deflexifolium
   .................................................................................. W. tanytricha

1. Leaf broadly ovate with straight, abruptly narrowing tips
   .................................................................................. W. tanytricha


Illustrations: Ganglee (1980) f. 946; Brotherus (1925) f. 721.

Stem-leaves ovate with an abruptly tapering, long acumen; cells linear, smooth; alar cells enlarged and inflated, 2 to 3 rows; branch-leaves oblong with a long acumen. Pseudoparaphyllia foliose.

Specimen examined. TAIWAN, CHIAI HSIEH: upper Tung-Pu, in Tsuga forest, on fallen log, 2,500 m alt., 17 Jul 1987, T. Y. Chiang 20370 (MO).

Figure 1. Wijkia tanytricha (Mont.) Crum. A–B, Stem-leaves (×70); C, Apical cells of stem-leaf (×330); D, Laminal cells of stem-leaf (×330); F, Marginal cells of stem-leaf (×330); G, Basal cells of stem-leaf (×330); H, Alar cells of stem-leaf (×330); I–J, Branch leaves (×70); K–L, Pseudoparaphyllia (×330); M, Perichaetial leaf (×70); N, Archeogonia (×330). Drawn from Chiang 20370.
Chiang — Wijkia tanytricha in Taiwan

Habitat. Growing on wet rocks or tree trunks, elev. 1,800–4,000 m.

Distribution. Taiwan, Tibet, Vietnam, Java, India, New Guinea.

Specimens of related species examined:

Wijkia carlottae: CANADA, Queen Charlotte Islands of British Columbia, 23 Jul 1966, W. B. Schofield & F. M. Boas 18733 (isotype, MO), W. B. Schofield 31489 (MO).

Wijkia secularis: THAILAND, 21 Dec 1985, Touw 10288 (MO).

Notes. Wijkia tanytricha is related to W. carlottae (Schof.) Crum (Figure 2), a species found in Queen Charlotte Islands of British Columbia (Schofield, 1966), in sharing ovate stem-leaves with a long acumen and foli-ose pseudoparaphyllia (Buck, 1986). Although plants, leaves, leaf cells, and alar cells of Wijkia tanytricha are larger than those of W. carlottae, no other qualitative characteristics can distinguish these two species. I suppose that plants of W. carlottae are conspecific with W. tanytricha (cf. Schofield, 1966) and represent the northernmost popu-
lations of the latter species. Nevertheless, more evidence on sexual structure and sporophytes of W. carlottae is needed before a conclusion can be made.

Wijkia tanytricha is also similar to W. secularis (Mitt.) Crum of sect. Andoa in southeast Asia (Gangulee, 1980: f. 947) in having abruptly tapering leaf-acumens. Nevertheless, the former species owns larger plants, broader leaves with longer and filiform tips and cylindrical capsules (vs. ovate ones) compared to W. secularis.


Leaves ovate-lanceolate with deflexed tips, ecostate; cells linear, smooth; alar cells enlarged, in one row.

Specimen examined. TAIWAN, CHIAYI HSIEN: Pai-yuen-shan-chuang, on rock in Abies forest, 3,200 m alt., Jul 1987, T. Y. Chiang s.n. (TAI).

Distribution. Taiwan, India.

Notes. Wijkia deflexifolia, belonging to sect. Wijkia, was recorded in Taiwan by Sasaoka (1928) and Sakurai (1932). This species is characterized and distinguished from W. tanytricha by having deflexed tips and one-rowed alar cells.

Acknowledgments. I am grateful to the curators of MO and TAI for access to the cited specimens. I am indebted to the reviewers, Drs. Zennosuke Iwatsuki, S. H. Lin, Ching-I Peng, and Benito Tan, for their valuable comments.

Literature Cited


台灣産薔薇科植物新紀錄－毛尖刺枝薔

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毛尖刺枝薔 (Wijkia tanytricha Mont.) 為台灣新紀錄植物，本種與台灣過去已記錄之反葉刺枝薔 (W. deflexifolium Ren. & Card.) 差異在於具有卵圓形葉身及纖長葉先端與大型葉耳細胞。此一分布於東南亞之刺枝薔與北美唯一種類，卡洛特刺枝薔 (W. carlottae) 極其近似，除前者植物體、葉形及葉細胞較為大型外，並無其他特徵足以區分兩種，二者極可能為同種，而北美族群為毛尖刺枝薔分布北限。

關鍵詞：刺枝薰屬；毛尖刺枝薔；卡洛特刺枝薔；新紀錄；台灣；分類學。