

A New Record of *Burmannia championii* Thwaites (Burmanniaceae) in Taiwan

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ABSTRACT: *Burmannia championii* Thwaites is a small saprophytic herb distributed in Sri Lanka, Malesia, South China, Ryukyus, and Japan. It is found in Lanyu Island, southeast of Taiwan. The species bibliography and a detailed morphological description are given which were not included in the Flora of Taiwan 2nd edition.

KEY WORDS: *Burmannia championii*, Burmanniaceae, New record, Lanyu Island, Taiwan.

INTRODUCTION

In Lanyu Island, the first author found several kinds of saprophytic small plants in Tasenshan. One of them was referable to *Burmannia championii* Thwaites. This is the first record of this species from Taiwan. It is known widely but sporadically distributed in Sri Lanka, Malesia, South China, Ryukyus, and Japan. From the fact of such distributional pattern, the occurrence of this species in Taiwan seems to be natural, although Taiwan is a new locality of this species.

In this paper, together with the report of its discovery, a species bibliography and a detailed morphological description are given for *Burmannia championii*, for they were not included in the Flora of Taiwan 2nd edition to make uniformity of its format.

The first species of *Burmannia* of Taiwan is *B. takeoi* Hayata. It was recorded by Hayata in 1915, but was regarded as conspecific with *B. itoana* Makino (Liu and Su, 1978). *Burmannia itoana* Makino was recorded for the first time in the Ryukyus (Ishigaki and Okinawa Islands) and is now known from Kyushu (Kagoshima Pref., Yakushima Island), the Ryukyus (Amami, Okinawa, Ishigaki, Iriomote Islands), Taiwan, South China (Guangdong, Hainan). The second species was recorded by Fukuyama and Suzuki (1936), *i. e.*, *B. nana* Fukuy. & T. Suzuki. This species had not been known well since its' publication in 1936, but rediscovery of the species by the first author in 1998 made its taxonomic position clear. This species is clarified as identical with *Gymnosiphon aphyllus* Blume in South Thailand and Malesia (Ohashi and Hsieh, 2000). These two species of *Burmannia* were listed in the Flora of Taiwan first edition (Liu and Su, 1978; Huang, 1979) as *B. itoana* and *B. nana*. Recently the third species, *B. liukuensis* Hayata, was added by Hsu and Leou (1996).

Burmannia championii is distinguished from these three species by having sessile flowers and 3-costate to narrowly 3-winged perianth-tube.

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TAXONOMIC TREATMENT

Burmannia championii Thwaites, Enum. Pl. Zeyl. 325. 1864; Jonker, Monogr. Brumann.: 138. 1938), Jonker in Fl. Males. ser. I, 4: 17. 1948; Ohwi, Fl. Jap.: 336. 1953; Ohwi, Fl. Jap. ed. Engl.: 318. 1965; Backer & Bakh. f., Fl. Java 3: 213. 1968; Masamune, Color Illust. Fl. Nippon: 132. 1969; Hatusima, Fl. Ryukyus: 799. 1971; Walker, Fl. Okinawa: 333. 1976; Wu and Chen in Fl. Reip. Popul. 16(2): 173. 1981; Satake in Satake *et al.*, Wild Flow. Jap. Herb. 1: 63. 1982; Cramer, Rev. Handb. Fl. Ceylon 4: 157. 1983; Ono *et al.*, Rev. Makino's New Illust. Fl. Jap.: 890. 1989; Ohwi and Kitagawa, New Fl. Jap. rev. ed.: 453. 1992; Shimabuku, Check List Vasc. Fl. Ryukyu rev. ed.: 621. 1997. Figs. 1-2

Burmannia tuberosa Becc., Malesia 1: 245. 1878.

Burmannia capitata Makino, Bot. Mag. (Tokyo) 4: 23. 1890, non Martius 1823.

Burmannia japonica Maxim. ex Makino, Illust. Fl. Jap. 1: t. 35. 1891; Makino in Bot. Mag. (Tokyo) 17: 6. 1903; Makino & Nemoto, Fl. Jap.: 1210. 1925; Makino & Nemoto, Fl. Jap. ed. 2: 1607. 1931; Nemoto, Fl. Jap. Suppl.: 1094. 1936.

Burmannia dalzielii Rendle in J. Bot. 40: 311. 1902.

Burmannia chionantha Schltr. in Bot. Jahrb. Syst. 49: 107. 1913.

Annual saprophytic herb, white or pale yellow. Stem erect, simple or rarely branched, 5-15 cm tall. Leaves scale-like, narrowly ovate, acute, appressed, 1.5-4 mm long. Bracts ca. 3 mm long, scale-like. Inflorescence capitate, at the top of stem; flowers 4-10, sessile, white, erect to patent, 3-ribbed, ca. 8 mm long; perianth-tube not winged, ribbed; perianth remaining after anthesis, outer perianth-lobes erect, about 1.5 mm long, deltoid, acute; inner lobes erect, minute, spatulate, ca. 0.8 mm long, apex rounded. Anthers 3, near the top of the tube, sessile or subsessile, connective broad, with 2 apical crests, basally not spurred. Pollen grains 1-sulcate, 49 x 90 x 32 μm , peroblate in polar view; sexine reticulate; lumina irregular, different size in the middle and gradually smaller toward both ends. Ovary 3-celled; placentae axile; style subequalling the perianth, shortly 3-fid; stigmas 3. Capsule obovate-orbicular, ca. 2.5 mm long, glabrous. Seeds ovate, ca. 0.3 mm long; seed surface concave, reticulate; lumina with granulae.

Specimen examined: Taiwan. Taitung: Lanyu Island, Tasenshan. T.H. Hsieh 2013 (TAI).

Distribution: Japan (Saitama Pref. and westwards), Taiwan, Southern China, Malesia and Sri Lanka.

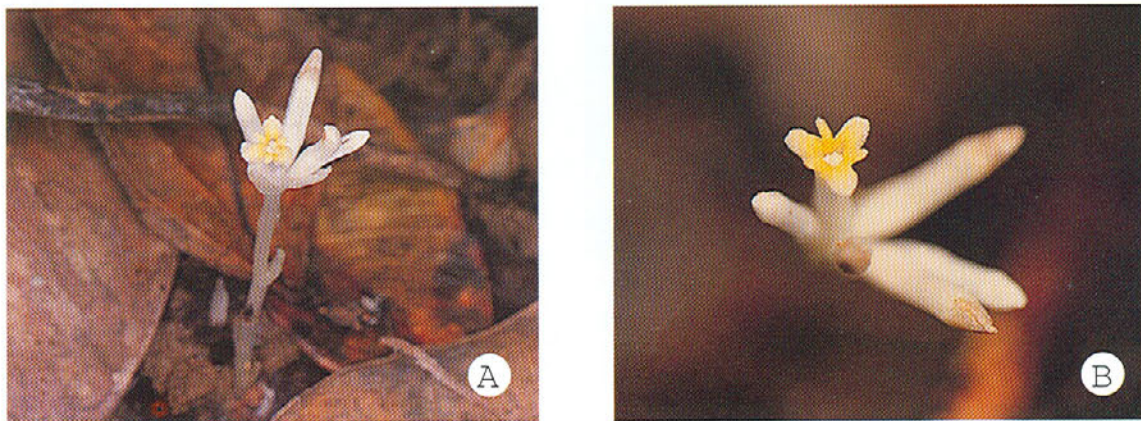


Fig. 1. *Burmannia championii* Thwaites. A, inflorescence, showing capitate inflorescence and persistent perianth after anthesis; B, flower, showing three outer deltoid perianth-lobes and three minute spatulate inner lobes (T. H. Hsieh 2013, TAI).

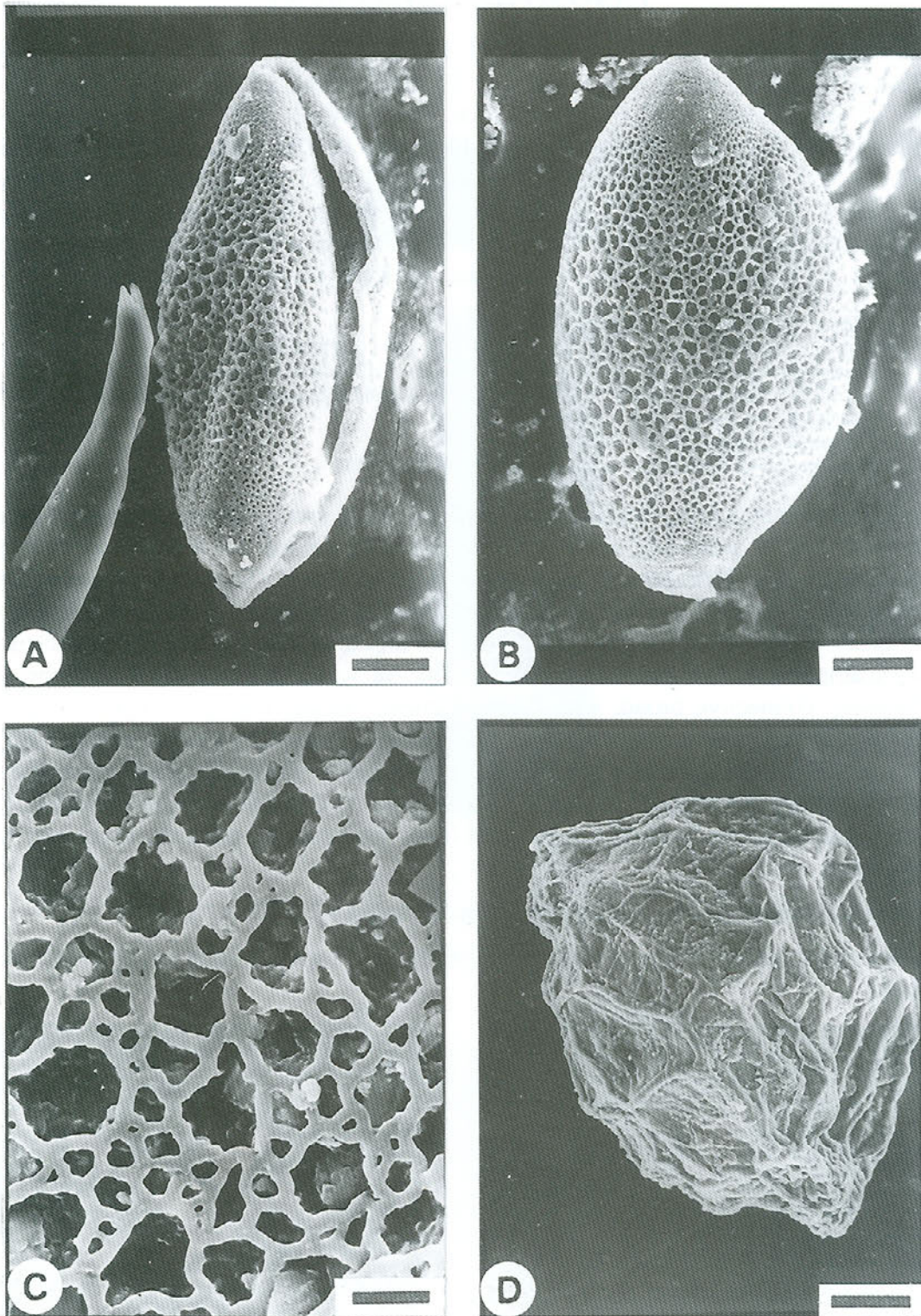


Fig. 2. SEM micrographs of *Burmannia championii* Thwaites. A, B, and C, pollen grains, showing 1-sulcate grain, reticulate ornamentation; D, seed, showing reticulate surface with granulae on muri. Scale bar: A and B = 13 μm , C = 2.5 μm , and D = 50 μm .

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台灣新記錄植物—頭花水玉簪（水玉簪科）

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摘 要

頭花水玉簪（水玉簪科）為零星分佈於斯里蘭卡、馬來西亞、中國南部、琉球和日本的腐生性小草本植物。本種以其頭狀花序、無柄或近無柄的花、花被片外面具3中肋或狹翅，可與省產其他種類區別。台灣首次發現於蘭嶼大森山海拔約280公尺的原始林下。本文並提供相關文獻、詳細描述、花粉和種子的微細構造。

關鍵詞：頭花水玉簪，水玉簪科，新記錄種，蘭嶼，台灣。

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