

***Cynoglossum furcatum* f. *albiflorum* (Masam.) P.H.
Chen & A.C. Chung: a new combination in *Cynoglossum* (Boraginaceae)**

琉璃草屬（紫草科）的新組合名—
白花琉璃草

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Abstract

In Taiwan, the genus *Cynoglossum* (Boraginaceae) comprises three taxa: *C. alpestre* Ohwi, *C. furcatum* Wall., and *C. lanceolatum* Forssk. We identified a population of white-flowered *C. furcatum* with consistent characteristics along a mid-altitude forest road in southern Taiwan. After comparing characteristics of the specimens, we identified the species as *C. formosanum* f. *albiflorum*, which was first reported by Masamune (1930). Therefore, we propose a new combination, *Cynoglossum furcatum* f. *albiflorum* (Masam.) P.H. Chen & A.C. Chung. Here, color photographs of this species are provided to facilitate identification.

Keywords: Boraginaceae, *Cynoglossum*, new combination, Taiwan

摘要

臺灣的琉璃草屬 (*Cynoglossum*) (紫草科) 有 3 個分類群：高山倒提壺 (*C. alpestre* Ohwi)、琉璃草 (*C. furcatum* Wall.)、小花倒提壺 (*C. lanceolatum* Forssk.)。作者在臺灣南部中海拔林道發現花為白色之琉璃草，族群和特徵穩定。經比對特徵及標本後，鑑定其為最初由 Masamune (1930) 發表的 *Cynoglossum formosanum* f. *albiflorum*。因此，我們為本物種提出新的組合名 *Cynoglossum furcatum* f. *albiflorum* (Masam.) P.H. Chen & A.C. Chung。本文提供白花琉璃草的彩色照片以助其鑑定。

關鍵詞：紫草科、琉璃草屬、新組合、臺灣

Received: July 21, 2023

Accepted: March 6, 2024

收件日期：2023 年 07 月 21 日

接受日期：2024 年 03 月 06 日

Introduction

According to the Boraginales Working Group (BWG), the order Boraginales is classified into 11 families (Luebert *et al.* 2016). Five families within this order are present in Taiwan, namely, Boraginaceae *s.s.*, Coldeniaceae, Cordiaceae, Ehretiaceae, and Heliotropiaceae (Editorial Committee of the Red List of Taiwan Plants 2017; Chung 2018). The family Boraginaceae *s.s.* in Taiwan comprises eight genera and 15 species (Editorial Committee of the Red List of Taiwan Plants 2017; Chung 2018). The genus *Cynoglossum* comprises three species (Fig. 1): *C. alpestre* Ohwi, *C. furcatum* Wall., and *C. lanceolatum* Forssk.

C. lanceolatum in Taiwan has been treated as *C. formosanum* Nakai (Nakai 1923; Zhu *et al.* 1995) and *C. lanceolatum* var. *formosanum* (Nakai) Hara (Hara 1966; Shimabuku 1997). Furthermore, some researchers have regarded *C. formosanum* as a

synonym of *C. zeylanicum* (Lehm.) Brand (Yamamoto 1934; Hou 1950). *Cynoglossum furcatum* is considered a synonym of *C. zeylanicum* (POWO 2023); however, the basionym *Anchusa zeylanica* Hornem. 1813 was an illegitimate name, as the name *Anchusa zeylanica* Jacq. 1812 (= *Bothriospermum zeylanicum* (Jacq.) Druce) had been published one year earlier. Consequently, the name *Myosotis zeylanica* Lehm, created in 1817, is considered irrelevant, even though it is the first legitimate combination (König *et al.* 2015).

In 2023, the first author discovered a population of white-flowered *C. furcatum* with consistent characteristics along a mid-altitude forest road in southern Taiwan that was not distributed together with the purple-flowered *C. furcatum*. Upon reviewing the literature, it was found that the white-flowered form of *C. furcatum* was first described by Masamune (1930) based on a specimen collected in Sikayo

(Chijayang), Taichung (G. Masamune, July 9, 1930), which was subsequently named *C. formosanum* f. *albiflorum* (Fig. 2). For further verification, we examined a specimen of *C. formosanum* f. *albiflorum* housed in the TAI Herbarium (Fig. 2, TAI 093673) and identified it as *C. furcatum* rather than *C. lanceolatum*. Therefore, we propose a new combination, *Cynoglossum furcatum* f. *albiflorum* (Masam.) P.H. Chen & A.C. Chung.

Taxonomic treatment

Cynoglossum furcatum Wall. f. ***albiflorum*** (Masam.) P.H. Chen & A.C. Chung, *comb. nov.*

白花琉璃草 Fig. 3

Cynoglossum formosanum Nakai f. *albiflorum* Masam., J. Soc. Trop. Agric. 2: 152 (1930).

TYPE: TAIWAN. Taichung City, Heping District, Sikayo, July 9, 1930, G. Masamune 1278 (TAI 093673).

Distribution: This species is found in

Taiwan and the Philippines (Pelser *et al.* 2011; the photograph (DOL 208426) was taken by Octrine L. Micu on December 17, 2022, in Kabayan, Benguet Province, Luzon). In addition to the initially reported locality, this species is observed in the field only along Fengkangshan Forest Road at altitudes of 1200–1600 m in Kaohsiung City, Taiwan.

Note: *Cynoglossum furcatum* is easily confused with *C. lanceolatum* and can be distinguished based on the following characteristics: stem with deflexed to appressed trichomes at the base (vs. with longer, stiff bristles mixed with shorter trichomes) (König *et al.* 2015), leaf rectangular to elliptical (vs. lanceolate to oblanceolate) (Hou 1950), leaf adaxial surfaces without mineralized cells (vs. hairs arising from groups of mineralized cells) (Hsiao and Liu 1998), corolla 3.5–4.5 mm in diameter (vs. 1.5–2.5 mm) (Zhu *et al.* 1995), and nutlets ca. 2.5 mm long (vs. ≤ 2 mm long) (König *et al.* 2015). Moreover, the corolla of

C. furcatum f. *furcatum*, *C. furcatum* f. *albiflorum*, and *C. lanceolatum* were bluish purple (Fig. 1 B), white (Fig. 3 E), and white with a blue throat (Fig. 1 C).

Additional specimen examined: TAIWAN: Fengkangshan Forest Road, Taoyuan District, Kaohsiung City, May 29, 2023, *P.H. Chen* 3661 (TAIE); June 8, 2023, *P.H. Chen* 3701, 3702, 3703 (TAIE); Nov. 23, 2023, *P.H. Chen* 3836 (TAIE).

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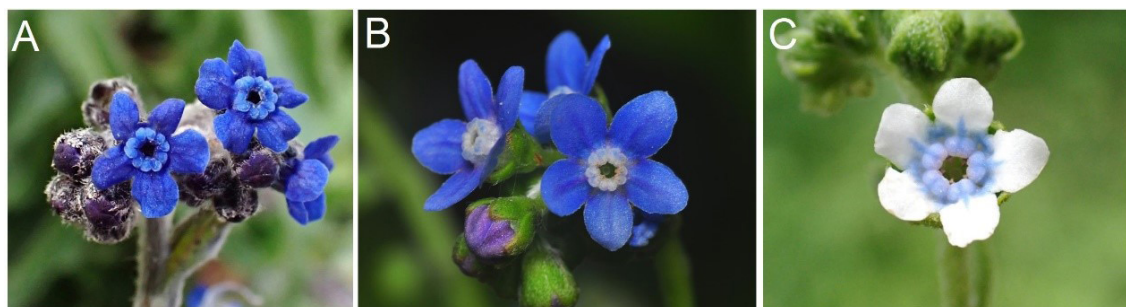


Fig. 1 The flowers of the *Cynoglossum* species in Taiwan. A, *C. alpestre* Ohwi; B, *C. furcatum* Wall.; C, *C. lanceolatum* Forssk.

圖 1 臺灣琉璃草屬物種的花。A：高山倒提壺 (*C. alpestre* Ohwi)；B：琉璃草 (*C. furcatum* Wall.)；C：小花倒提壺 (*C. lanceolatum* Forssk.)

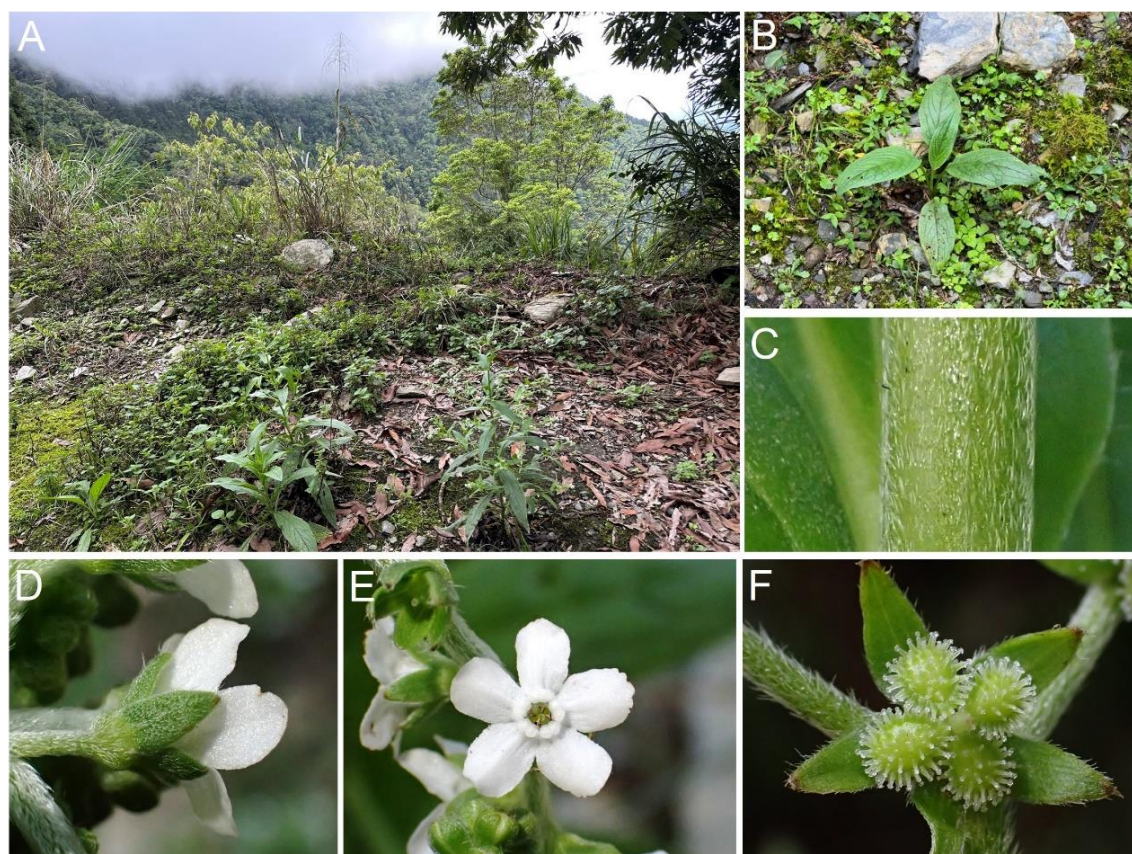


Fig. 3 *Cynoglossum furcatum* f. *albiflorum* (Masam.) P.H. Chen & A.C. Chung. A, habitat; B, regenerating individual; C, stem; D, lateral view of the flower; E, front view of the flower; F, fruits.

圖 3 白花琉璃草 (*Cynoglossum furcatum* f. *albiflorum* (Masam.) P.H. Chen & A.C. Chung.)。A：生育地；B：更新植株；C：莖；D：花的側面；E：花的正面；F：果實。



Fig. 2 The type specimen (G. Masamune, July 9, 1930; TAI 093673) of *Cynoglossum formosanum* Nakai f. *albiflorum* Masam.

圖 2 *Cynoglossum formosanum* Nakai f. *albiflorum* Masam. 的模式標本 (G. Masamune, July 9, 1930; TAI 093673)。