

A New Record of *Capparis* (Capparaceae) from Taiwan: *Capparis sabiaefolia*

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ABSTRACT: People in Taiwan have identified *Capparis sabiaefolia* Hook. f. et Thoms. as *Capparis acutifolia* Sweet. In this paper we clarify the identity of *C. sabiaefolia* for the flora of Taiwan and further document *C. acutifolia* in Taiwan. *C. sabiaefolia* was characterized by branchlets without thorns; leaves thinly herbaceous, 7.5-10 cm long, base rounded, veins obscure on both sides; and densely tomentose on inner surface petals. *C. acutifolia* was described as branchlets with thorns; leaves coriaceous or thinly coriaceous, 9-16 cm long, base acute, veins distinct on both sides; and petals glabrous but tomentose at the margin. Taxonomic treatment, line drawing, and photographs are provided here.

KEY WORDS: *Capparis acutifolia*, *Capparis sabiaefolia*, Capparaceae, Taiwan, Taxonomy, New record.

INTRODUCTION

After the re-examination of the specimens collected from Taiwan which were identified as "*Capparis acutifolia*", we found that it should be divided into two taxa. The first taxon is characterized by branchlets without thorns; leaves thinly herbaceous, 7.5-10 cm long, rounded base, veins obscure on both sides; and petals densely tomentose on inner surface. The second one shows features of branchlets with thorns; leaves coriaceous or thinly coriaceous, 9-16 cm long, base acute, veins distinct on both sides, and petals glabrous but tomentose at the margin.

Authors suggest that the first taxon should be attributed to *C. sabiaefolia*, according to the previous studies (Hooker, 1872; Jacobs, 1965; Wu *et al.*, 1999). It is clear that people misidentified *C. sabiaefolia* as *C. acutifolia* in Taiwan (Liao, 1974; 1996). *C. sabiaefolia* is distributed widely in the central and southern part of Taiwan Island. *C. acutifolia* is a rare plant found only in a few locations in Taiwan.

TAXONOMIC TREATMENT

Key to *Capparis acutifolia* and *C. sabiaefolia*

- 1a. Shrub; branchlets without thorns; leaves thinly herbaceous, lanceolate, 7.5-10 cm long, base rounded, veins obscure on both sides; petals densely tomentose inside *Capparis sabiaefolia*

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- 1b. Climber; branchlets with thorns; leaves coriaceous or thinly coriaceous, oblong, 9-16 cm long, base acute, veins distinct on both sides; petals glabrous but tomentose at the margin.....*Capparis acutifolia*

Capparis acutifolia Sweet, Hort. Brit. ed. 2. 585. 1830; Liu & Liao in Fl. Taiwan 2: 665. 1976; Liu & Liao in Fl. Taiwan 2nd. 2: 735. 1996; Wu *et al.*, Fl. Reipubl. Popul. Sin. 32: 499. 1999. 銳葉山柑 Figs. 1-2

Capparis acutifolia Sweet ssp. *acutifolia* Jacobs in Blumea 12 (3): 427. f. 20. 1965.

Capparis membranacea Gard. & Champ. var. *angustissima* Hemsl., Ann. Bot. 9: 145. 1895; Matsum. et Hayata, Journ. Coll. Sci. Tokyo 22:27; Hayata, Ic. Pl. Formos. 1: 56. 1911; Li, Woody Fl. Taiwan 236. 1963.

Capparis acuminata (non Willd.) Lindl., Bot. Reg. 16. t. 1320. 1830.

Capparis leptophylla Hayata, Ic. Pl. Formos. 3: 23. 1913.

Capparis tenuifolia Hayata, Ic. Pl. Formos. 3: 23. 1913.

A climber; young branchlets pubescent, become glabrescent; thorns 2, opposite, in young branchlets wanting, in mature branchlets present, 1.5 mm long; slightly curved. Leaves alternate, herbaceous when young, become subcoriaceous, lanceolate, apex acuminate to acute, base cuneate to acute, 9-16 cm long, 2.2-3.4 cm wide; leaves shape variable, glabrous on both surfaces, midrib sunken, reticulation nerves distinct on both surfaces; petioles 4-6 mm long. Flowers axillary, 1-3 flowers in row, pedicels 0.7-1.2 cm long; sepals 4, elliptical, obtuse at apex, margin hairy, 6-8 mm long, 3-4 mm wide, petals 4, elliptical, 1-1.2 cm long, 3-4 mm wide; obtuse at apex, margin hairy; stamens numerous, filaments glabrous, 2.2 cm long; gynophore 2.1 cm long; ovary 2.5-3 mm long, stigma with few hairs. Berry red when mature.

Distribution and Habitat: Asia, Southern China. Taiwan, in the southern part, low to middle altitudes (600-1100 m). Forest and thickets, also in open situation, dry to mesic.

Specimens examined: Chiayi: Alishan Highway, April 5 1992, R. C. Chuang s. n. (TCF). Tainan: Tatungshan, T. C. Huang & S. F. Huang 15990 (TAI). Pingtung: Janlishan, G. P. Hsieh 1021 (PPI), 1023 (PPI); Iitingshan, G. P. Hsieh 1062 (PPI); Mt. Hsuehyehken, G. P. Hsieh 1131 (PPI); Mt. Jih'angchen, C. F. Chen 209 (PPI); Mt. Weiliao, S. Z. Yang 5851 (PPI). Kaohsiung: Shanping, S. Y. Lu 16126 (TAIF), M. T. Kao 7883 (TAI).

Notes:

1. Nomenclatural confusion of *C. acutifolia* and *C. sabiaefolia* was described in detail by Jacobs (1965). On the other hand, he treated the two taxa as two subspecies, namely, *C. acutifolia* ssp. *acutifolia* and *C. acutifolia* ssp. *sabiaefolia*. The two taxa are mainly discriminated by petals that are densely tomentose or glabrous inside, and leaves being coriaceous or thinly herbaceous. These variations are not continuous and represent different reproductive strategies; we thus treat with these taxa as different species as Wu and Sun (1999) did.
2. Comparison between type plate of original literature and Taiwanese materials does show some differences, that is, more wider leaves and smooth branches. The specimens with name *Capparis acutifolia* has ovate-lanceolate leaves and branches with thorns in Taiwanese materials. However, these specimens show veins as distinct on both sides as *Capparis acutifolia*.
3. Hemsley (1895) published a new variety—*Capparis membranacea* var. *angustissima*, based on Henry's collected material from Bankinsing mountains (Bankinsing, Henry 471, 1005). According to the description of Hemsley's original literature (1911) that said it is a "white-flowered climber". We, therefore, recognize that it should be attributed to *Capparis acutifolia*, here reduced to a synonym.

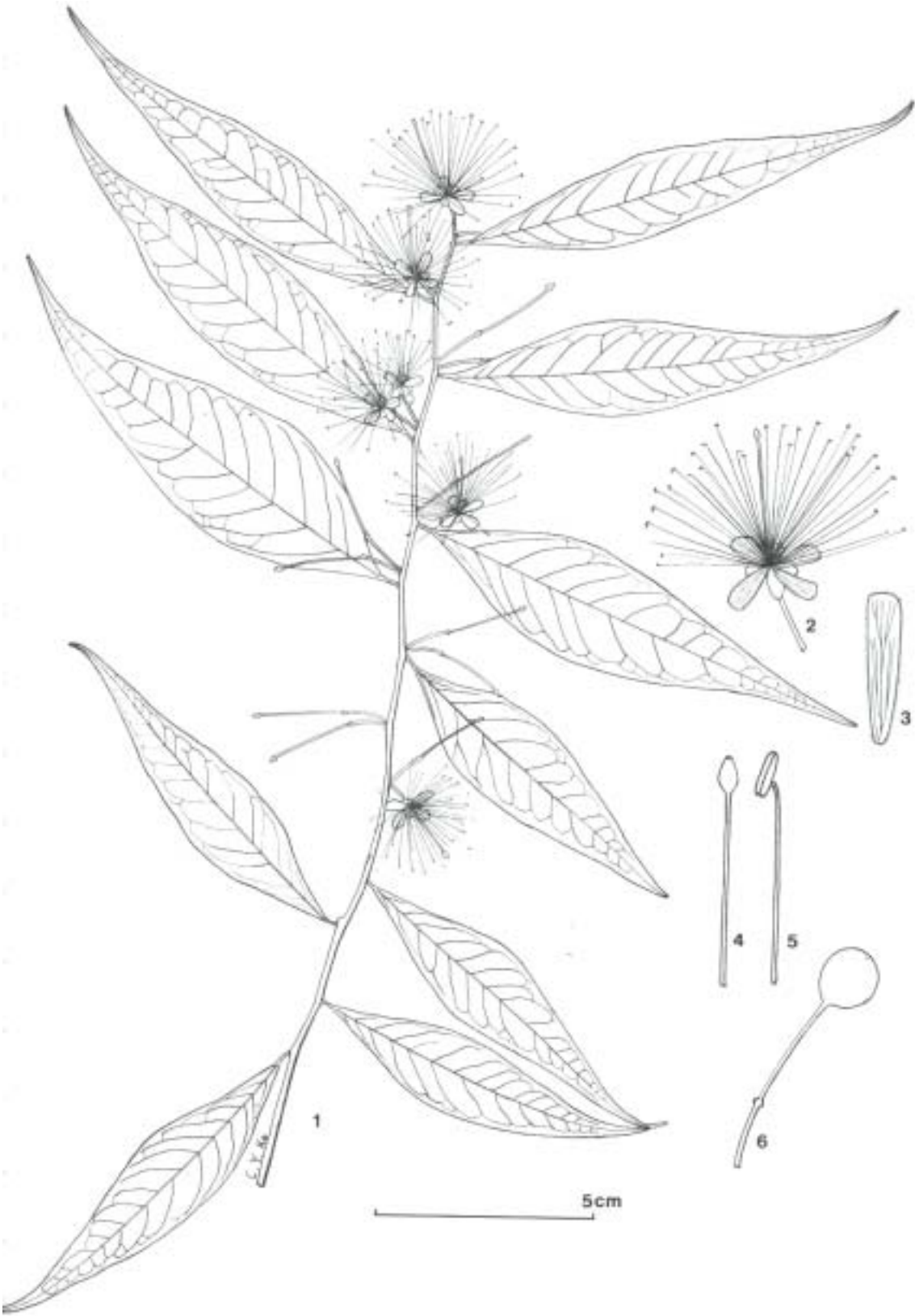


Fig. 1. *Capparis acutifolia* Sweet. 1: Flowering branch. 2: Flower. 3: Petal. 4: Pistil. 5: Stamens. 6: Fruit.

4. Hayata published a new species — *Capparis leptophylla* in 1913. The plants are characterized by having thorns, distinct veins on both sides of leaves, ovate-lanceolate leaves, and petals that are glabrous inside. Based on the original literature, line drawing and photograph of type (TI), we recognize that it should be attributed to *C. acutifolia*.
5. Hayata also published another new species — *Capparis tenuifolia* in 1913. In *C. tenuifolia* petals are glabrous inside, closely resembling *C. acutifolia*. We recognize that it should be attributed to *C. acutifolia*.

Capparis sabiaefolia Hook. f. et Thoms. in Fl. Brit. Ind. 1: 179. 1872; Fl. Reipub. Popul. Sinica. 32: 498. 1999. 毛瓣蝴蝶木 Figs. 3-4

Capparis acutifolia Sweet ssp. *sabiaefolia* (Hook. f. et Thoms.) Jacobs, Blumea 12 (3): 432. 1965.
Capparis kikuchii Hayata, Ic. Pl. Formos. 3: 21. 1913. syn. nov.

Shrubs or trees, glabrous. Leaves thinly herbaceous, getting dark after dry, 7.5-10 cm long, 2.5-5.4 cm wide; base rounded to (rarely) acute, apex gradually acuminate, tip 0.7-1.5 cm long, blunt to acute; midrib slightly sunken above, sometimes in the basal part only, nerves thin, 7-10 pairs, reticulation fairly distinct. Flowers axillary, 1-2 in row; pedicels with reddish-brown hair; sepals 4, lanceolate, tomentose inside, 2 large, 2 small, 4-8 mm long; petals 4, lanceolate to oblanceolate, 0.7-1.1 cm long, tomentose at bases on both surfaces and margin; stamens numerous; ovary glabrous, less than 3 mm long; gynophore 2-3 cm long, glabrous. Berry globose to ellipsoid, 1.2-1.6 cm long, 1.2-1.5 cm across.

Distribution and Habitat: Southern China to southern Vietnam and eastward to the Ryukyus. Taiwan, also in the central and southern parts and on the Hengchun Peninsula. In the forest and thickets, also in the open situation at low altitudes.

Specimens examined: Taichung: Takeng, 23 June 1992, H. C. Chang s.n (TCF); Ta-chi-shi, M. T. Kao 10045 (TAI). Nantou: Lienhuachih, 5 August 1900, C. W. Chen s.n (TCF); Mingchien, 11 August 1993, C. S. Wu s.n. (TCF); Puli, 11 June 1879, L. C. Wang s.n (TCF); Kuantao Stream, 7 August 1984, F. Y. Lu s.n (TCF); Sun-Moon Lake, S. F. Huang 2998 (TAI). Miaoli: Huo-Ien Mt., T. H. Hsieh & C.H. Hsiao s.n (HAST); Huoyenshan, T. P. Lin 5160 (HAST). Changhua: Huatarn, S. L. Chen 486 (HAST); Yuanlin, Mt. Paikuo, S. Z. Yang 7128 (PPI), Y. Simada 6156b (TAI). Kaohsiung: Shanping to Nanfengshan, T. T. Chen 8477 (TAIF); Tona, T. T. Chen 6932 (TAIF). Pingtung: Lilungshan, S. W. Chung 4504 (TAIF); Y. K. Chen & W. P. Leu 844 (HAST); Y. C. Lu & S. P. Li 1649 (HAST); T. H. Hsieh 791 (TAI); Wuweishan, K. C. Yang, 4552 (HAST); Neipu Hsiang, Chiayi Primary School, C. H. Lin et al. 479 (HAST); Laofoshan, T. T. Chen 67 (TAIF); Ssulinkoshan, T. T. Chen 3534 (TAIF); Tahanshan, S. Y. Lu 25714 (TAIF); Liangshan waterfall, S. Z. Yang 29127 (PPI).



Fig. 2. *Capparis acutifolia* Sweet.

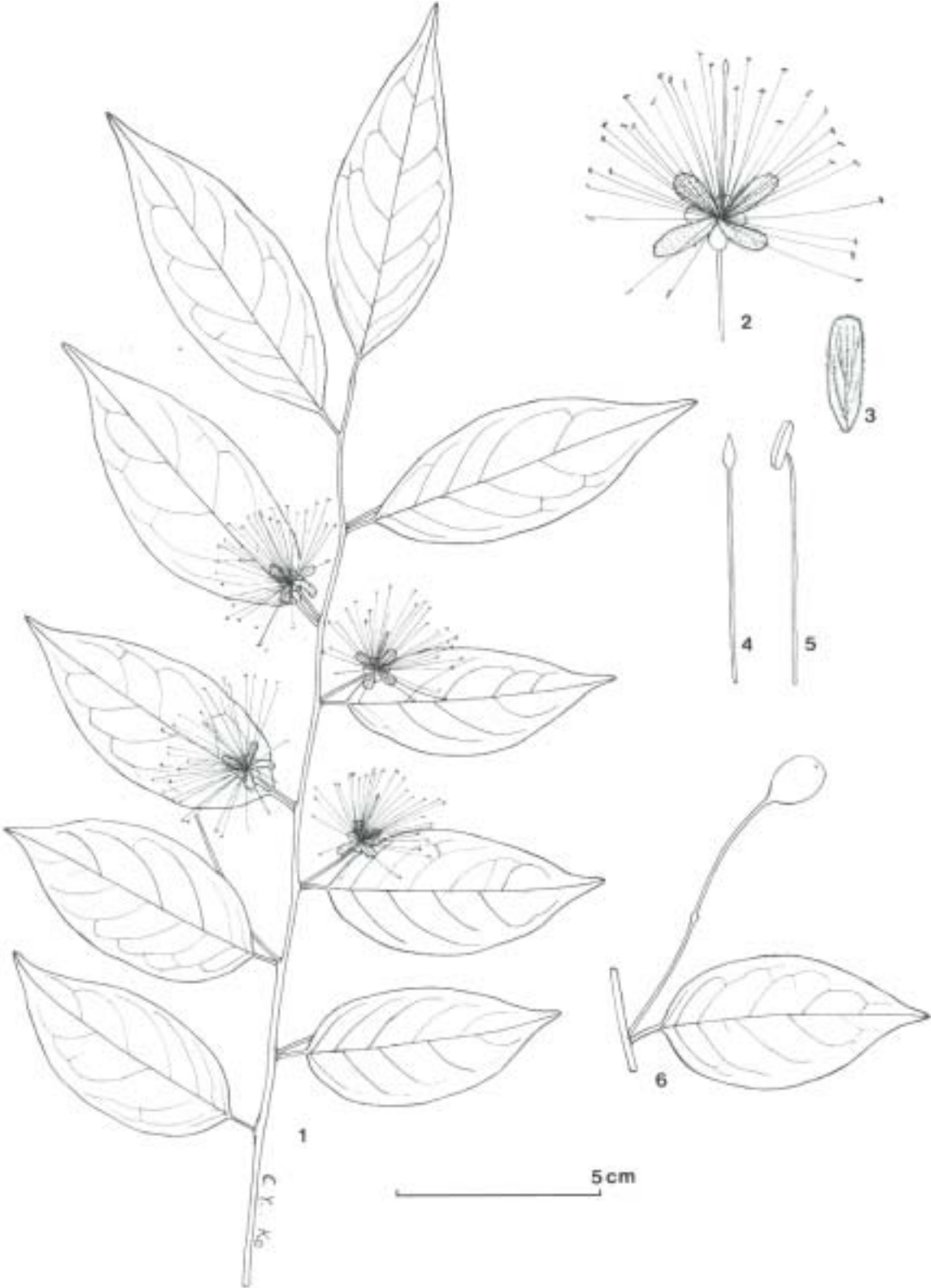


Fig. 3. *Capparis sabiaefolia* Hook. f. et Thoms. 1: Flowering branch. 2: Flower. 3: Petal. 4: Pistil. 5: Stamens. 6: Fruit.



Fig. 4. *Capparis sabiaefolia* Hook. f. et Thoms.

Notes: Although Wu and Sun (1999) treated *Capparis kikuchii* as the synonym of *Capparis acutifolia*. After we checked the original literature (Hayata, 1913), we found it should be attributed to *C. sabiaefolia*, based on Hayata's description—leaves oblong (8-9 cm long, 3-4 long wide) and petals tomentose at base on both sides.

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台灣產山柑屬的一新記錄：毛瓣蝴蝶木

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摘 要

台灣的毛瓣蝴蝶木 (*C. sabiaefolia* Hook. f. et Thoms.) 以往的分類文獻中均將其誤定為銳葉山柑 (*C. acutifolia* Sweet)。本研究確定毛瓣蝴蝶木的存在，並進一步確認銳葉山柑的特徵。毛瓣蝴蝶木的特徵為小枝沒有刺，葉薄革質，7.5 至 10 公分長，葉脈兩面明顯，葉基圓形，花萼內部表面密生絨毛；而銳葉山柑則是枝條有刺，葉革質或薄革質，9 至 16 公分長，葉基銳形，葉脈不明顯，花萼光滑僅邊緣有毛絨。本文並提供它們的分類處理、繪圖、照片以供參考。

關鍵詞：銳葉山柑、毛瓣蝴蝶木、山柑科、台灣、分類、新紀錄。

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