

# Remarks on the species of *Stachytarpheta* (Verbenaceae) of Taiwan

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**Abstract.** Authors in the past and today in Taiwan have identified *Stachytarpheta urticaefolia* (Salisb.) Sims as *S. jamaicensis* (L.) Vahl. In this paper we clarify the identity of *S. urticaefolia* for the Flora of Taiwan and further document the recent naturalization of a second species, *S. jamaicensis* (L.) Vahl, in Taiwan. A taxonomic treatment, line drawings and a map showing the distribution of the two species on this island are presented.

**Keywords:** Adventive; Invasive; *Stachytarpheta jamaicensis*; *Stachytarpheta urticaefolia*; Verbenaceae; Taiwan; Taxonomy.

## Introduction

*Stachytarpheta* is a genus of about 140 species, almost all of which are widely distributed in subtropical and tropical America, with a few in tropical Asia, Africa, and Oceania (Moldenke and Moldenke, 1983). Three alien species, *S. cayennensis* (L. C. Rich.) Vahl, *S. dichotoma* Vahl and *S. jamaicensis* (L.) Vahl, are listed in Taiwan (Huang, 1979). However, only *S. jamaicensis* was treated in the *Flora of Taiwan* in both the first (Hsiao, 1978) and the second (Yang et al., 1998) edition. The Flora implies that *S. jamaicensis* is the only species naturalized and found wild on this island.

*Stachytarpheta jamaicensis* was enumerated as an alien species in Taiwan as early as 1928 by Sasaki. Mori (1936) also reported the presence of this species on the island. Thereafter, the binominal *S. jamaicensis* was adopted, and the status of this taxon was commonly accepted in Taiwan (Liu, 1962; Hsu, 1975; Hsiao, 1978; Hong et al., 1980; Jeng, 1987; Chen, 1997; Yang et al., 1998; Ying, 1998; Cheng, 2000).

In the course of a botanical survey for a biodiversity study in eastern Taiwan, a species not previously reported in literature pertaining to the flora of Taiwan was collected. After a preliminary survey of the genus *Stachytarpheta* based on specimens from HAST, HLTC, NTUF, TAI, TAIF, we found that nearly all specimens annotated as *S. jamaicensis* are *S. urticaefolia*, while our collections from Hualien are identifiable as *S. jamaicensis*. Our study reveals that *S. urticaefolia* has persisted in Taiwan for more than half a century and seems to have established itself permanently. *Stachytarpheta jamaicensis* is an additional

adventive species to this island. Therefore, *S. jamaicensis* is here reported for the first time as a naturalized species from Taiwan.

In the treatment of the first edition of *Flora of Taiwan*, Hsiao (1978) placed *S. urticaefolia* in the synonymy of *S. jamaicensis*, but the two taxa are sharply distinct. Their leaf morphology and growth forms are completely different. The following key serves to readily differentiate the two species of *Stachytarpheta* in Taiwan.

## Key to the Species of *Stachytarpheta* in Taiwan

- 1a. Plant shrubby, erect, up to 2 m tall, usually becoming dark brown or blackish brown upon drying; leaves chartaceous, ovate to broadly elliptic, with an acute apex and an indistinct petiole, dark green and glossy, bullate above when fresh, the marginal teeth divergent, sharp outward-pointing, with the lower tooth margin much less than twice the length of the upper margin; rachis slender and flexible, 3 mm across; flowers dark purple-blue, with the stamens included and the style slightly exserted, the style exceeding the anthers by 1 mm; bracts lanceolate, with scarious edges below the middle ..... 1. *S. urticaefolia*
- 1b. Plant herbaceous with a woody base, low and spreading, 80-100 cm tall, usually becoming brown, grayish brown to blackish purple upon drying; leaves fleshy, elliptic, with a round apex and a rather distinct petiole, grayish green, not bullate when fresh, the marginal teeth blunt, forward-pointing, with the lower tooth margin at least twice as long as the upper margin; rachis erect and stout, 4-6 mm across; flowers pale violet, with the stamens and the style included, the style not exceeding the anthers; bracts ovate-lanceolate, with scarious edges above the middle ..... 2. *S. jamaicensis*

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1. *Stachytarpheta urticaefolia* (Salisb.) Sims, Curtis' s Bot. Mag. 43: pl. 1848. 1816 ("urticifolia"); Walker, Fl. Okin. & S. Ryuk. Isl. 886. 1976; Moldenke & Moldenke in Dassanayake et al., Rev. Handb. Fl. Ceylon 4: 257-261. 1983; Haselwood & Motter, Handb. Hawaiian Weeds 334-335. 1991; Wunderlin, Guid. Vasc. Pl. Florida 524. 1998. 長穗木 Figures 2, 4, 5

*Stachytarpheta urticaefolia* (Salisb.) Sims f. *albiflora* Moldenke, Phytologia 4: 182. 1953.

*Stachytarpheta jamaicensis* (L.) Vahl f. *albiflora* S. S. Ying, Coloured Illustr. Fl. Taiwan 6: 609. phot. 1607 & 1607A. 1998.

*Stachytarpheta jamaicensis* auct. non (L.) Vahl: Liu, Illustr. Nat. & Intr. Lign. Pl. Taiwan 2: 1227. pl. 1035. 1962; Backer & Bakh. f., Fl. Java 2: 598. 1965; Corner & Watanabe, Illustr. Guid. Trop. Pl. 767. fig. 271. 1969; Hsu, Illustr. Common Pl. Taiwan (2<sup>nd</sup> ed.) 1: 233-234. 1975; Hsiao in Li et al., Fl. Taiwan 4: 431. 1978. *pro parte*; Hong et al., Seaside Pl. Taiwan 2: 175. 1980; Chen & Lan in Pei & Chen, Fl. Reipubl. Popul. Sin. 65(1): 20. fig. 6. 1982; Jeng, Common Wildflowers of Taiwan 2: 43. photo 25. 1987; Chen & Gilbert, in Wu & Raven, Fl. China 17: 3. 1994; Chen, Illustr. Weeds E. Taiwan 1: 166. pl. 167. photo. 65. 1997; Ying, Coloured Illustr. Fl. Taiwan 6: 608-609. 1998. *pro parte*; Yang, Lu & Chen in Huang et al., Fl. Taiwan 4: 424. 1998. *pro parte*; Ji in Wu & Raven, Fl. China Illustr. 17: 4. 1998; Cheng, Illustr. Fl. Taiwan 1: 998. fig. 1975. 2000.

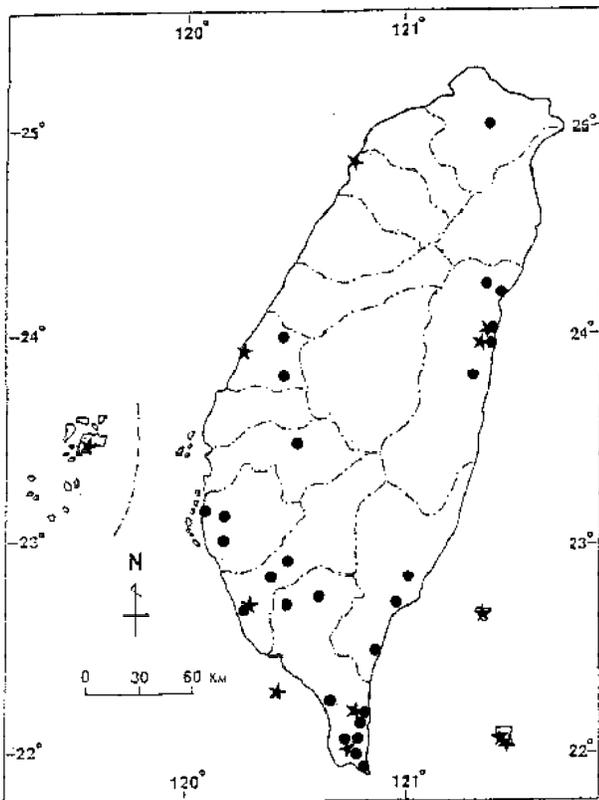
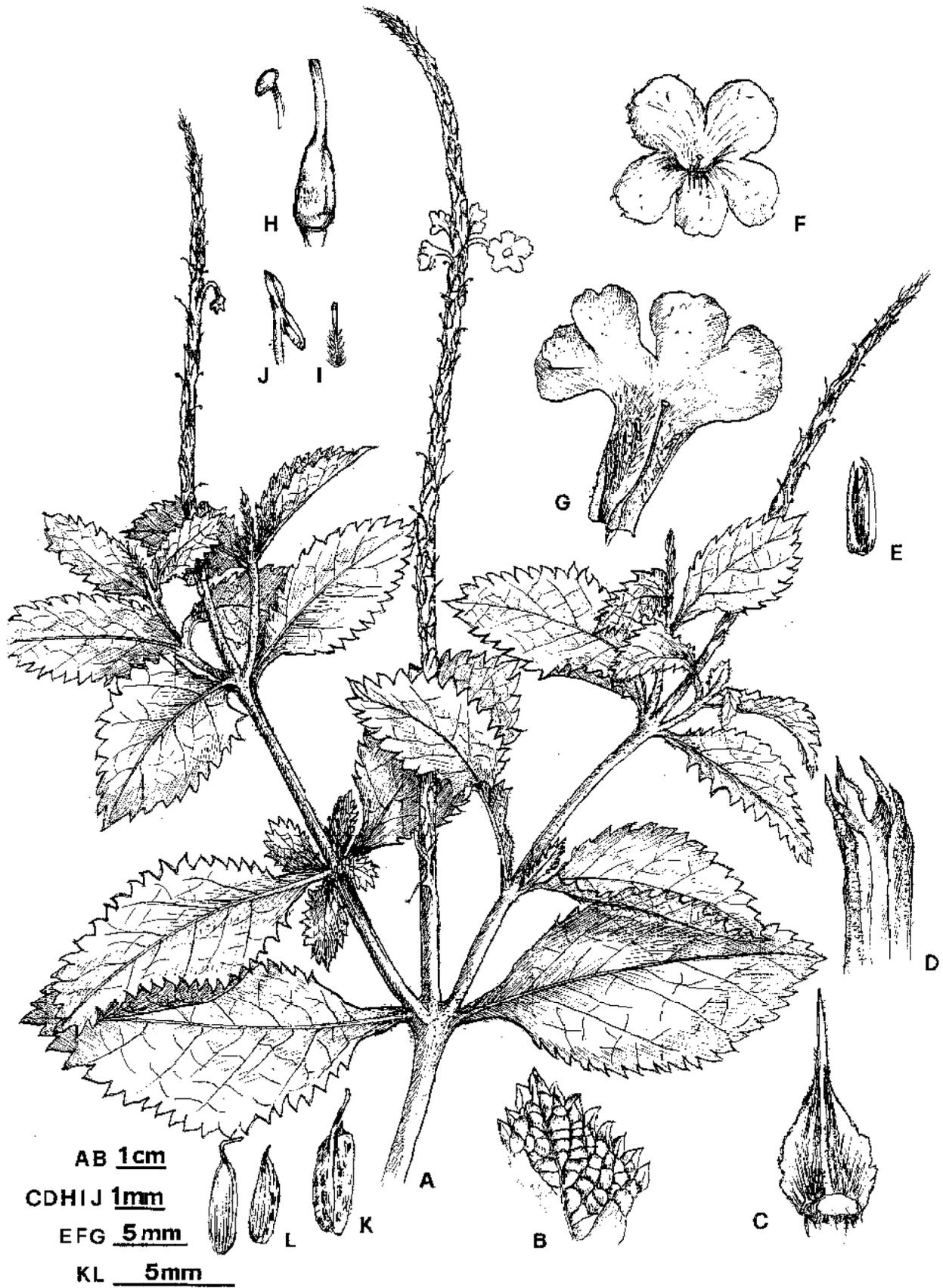


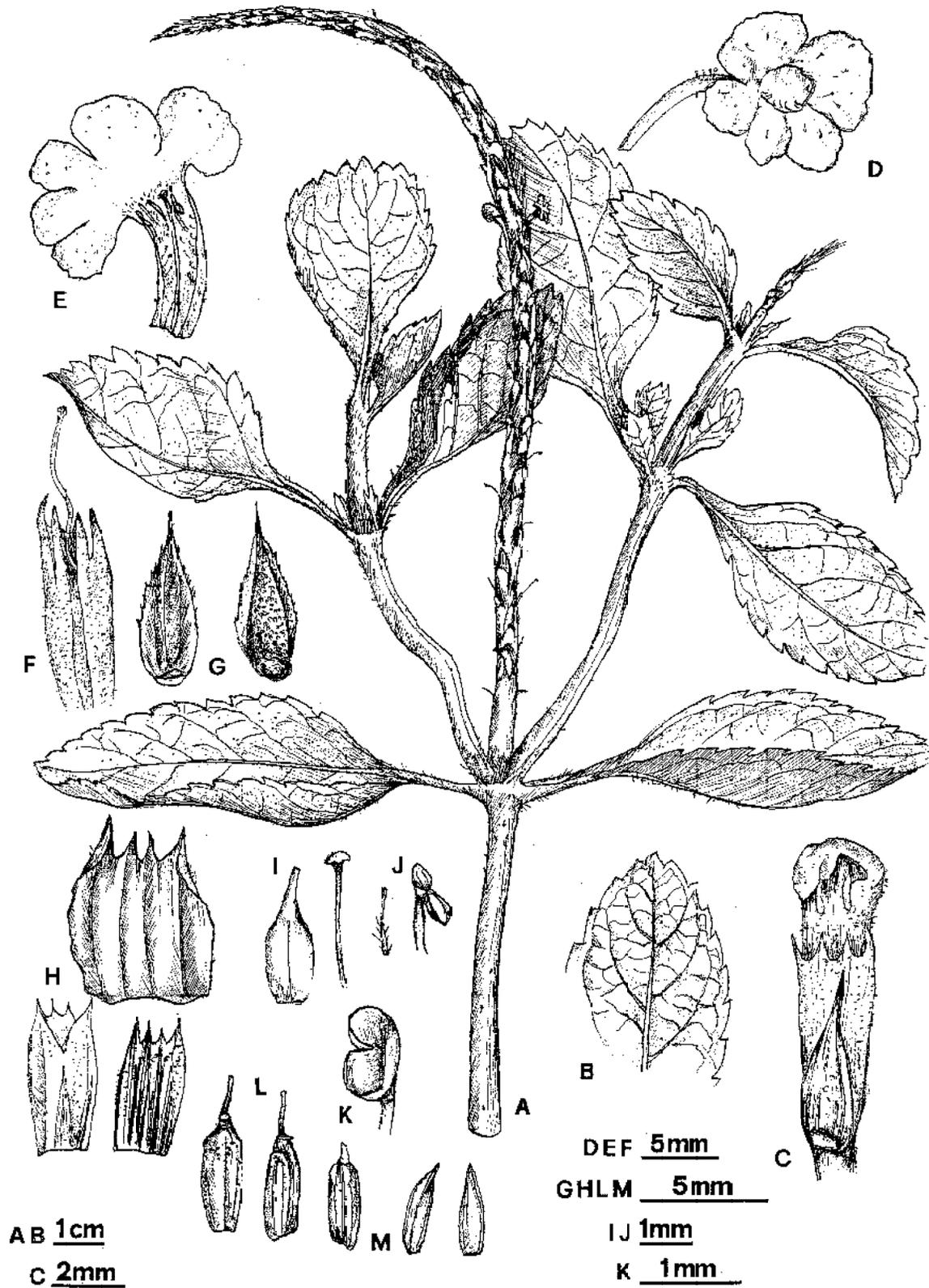
Figure 1. Distribution of *Stachytarpheta urticaefolia* (Salisb.) Sims (dots) and *S. jamaicensis* (L.) Vahl (stars) in Taiwan.

Perennial herbs or subshrubs, becoming dark brown or blackish brown upon drying; plants weakly erect, 80-200 cm tall, the stem or branches dichotomous, 4-angled, dark green flushed with purple, obscurely pilosulous on the younger parts. Leaves opposite, membranous; blade ovate to broadly elliptic, 5-8 cm long and 3-6 cm wide, dark green, glossy and bullate above, the midrib or sometimes lateral veins purplish above and purplish spots beneath, obtuse or abruptly acute apically, coarsely serrate with sharp outward-pointing teeth, cuneately narrowed basally and tapering to an indistinctly winged petiole 0.5-2 cm long, microscopically glandular peltate on both surfaces, slightly pilosulous on the veins of lower surface. Spikes terminal, terete, slender, flexible during anthesis, 25-40 cm long, 3 mm in diameter, dark green sometimes flushed with purple, glabrous, microscopically glandular peltate; rachis with the depressions about as wide as the diameter of the rachis. Flowers sessile, 3-5 flowered at a time; bracts lanceolate, 4-5 mm long and 2 mm wide, long aristate apically, the edges scarios at the lower half, irregularly serrulate and obscurely ciliate, the median portions thicken, with a more or less distinct midrib, microscopically glandular peltate on the abaxial surface; calyx tubular, compressed, 5-6 mm long and 2 mm wide, the tube thin-walled, 4-ribbed, or rarely with indistinct fifth rib, microscopically glandular peltate without, the rim bifid, with triangular teeth up to 1 mm long; corolla salverform, dark purple-blue, with a white eye at the base of upper lip, 8-9 mm long, the limb 1 cm across, with remotely short glandular hairs on the surface, upper lip 2-lobed, the lobes orbicular, 5.5 mm across, lower 3-lobed, the lobes broadly elliptic or orbicular, unequal, lateral lobes 4 mm across, middle lobe smaller, all the lobes inconspicuously serrate, the tube cylindrical, slightly curved, long glandular haired within below the upper lip, white strigose within below the lower lip; perfect stamens 2, anterior, inserted the middle of the corolla, filament 1.2 mm long and 0.3 mm wide, white and glabrous, anthers light yellow, 2-celled, the cells 0.9 mm long, dehiscing in a continuous line; staminodes 2, posterior, 1.5 mm long and 0.15 mm wide, the upper half club-shaped, glabrous, dark purple-blue, the lower white, stiff haired; all stamens included; style elongated, exerted, 7 mm long, white flushed with purple, 1 mm exceeding the anthers; stigma green, capitate, 0.7 mm across; ovary light yellow, 2 mm long. Fruit enclosed by the persistent calyx, black, oblong and compressed, 4 mm long and 1.5 mm wide, with a beak 0.5 mm long and a persistent style 1.2 mm long, splitting at maturity into 2 cocci; seed closely enclosed by the thin pericarp.

*Specimens examined.* TAIWAN. TAITUNG HSIEN: Chih-pen-wen-chien-hou-shan, on open reforested ground, flowers violet, Hsu & Hsu 4031 (TAI); Chihpen, elev. ca. 80 m, Hsu & Kao 3368 (TAI); Yanping Hsiang, at the base of Tu-lan-shan, on the E side of the Hai-an-shan-mo mountain range, Bartholomew 7784 (HAST). PINGTUNG HSIEN: Kenting, near road side, flowers violet, Kao 4218, 9292, 9293, open grasslands, Kao 10398, road side, Huang 4706 (all at TAI), flowers white, *s. d.*, S. S. Ying *s. n.* (NTUF); Nanrenshan, Huang & Hsiao 8190 (TAI), elev. ca. 400 m, Liu 452, 1304, 1306 (NTUF); Kenting Na-



**Figure 2.** *Stachytarpheta urticaefolia* (Salisb.) Sims. A, Habit; B, Portion of leaf blade, showing bullate adaxial surface, acute apex and marginal divergent teeth; C, Bract; D, Calyx dissected; E, Calyx; F, Corolla; G, Corolla dissected, showing the pistil, stamens and staminodes; H, Stigma and ovary; I, Staminode; J, Anther; K, Fruit; L, Seeds. All from 1 May 2001, *S. H. Chen s. n.* (HLTC).



**Figure 3.** *Stachytarpheta jamaicensis* (L.) Vahl. A, Habit; B, Portion of leaf blade, showing rugose adaxial surface, round apex and marginal blunt teeth; C, nearly opened flower; D, Corolla; E, Corolla dissected, showing pistil, stamens and staminodes; F, Flower with corolla removed; G, Bracts, adaxial (left) and abaxial (right) surfaces; H, Calyx and its dissection; I, Stigma and ovary; J, Stamen (right) and staminode (left); K, Anther; L, Fruits; M, Seeds. All from 10 Dec. 2000, S. H. Chen s. n. (HLTC).

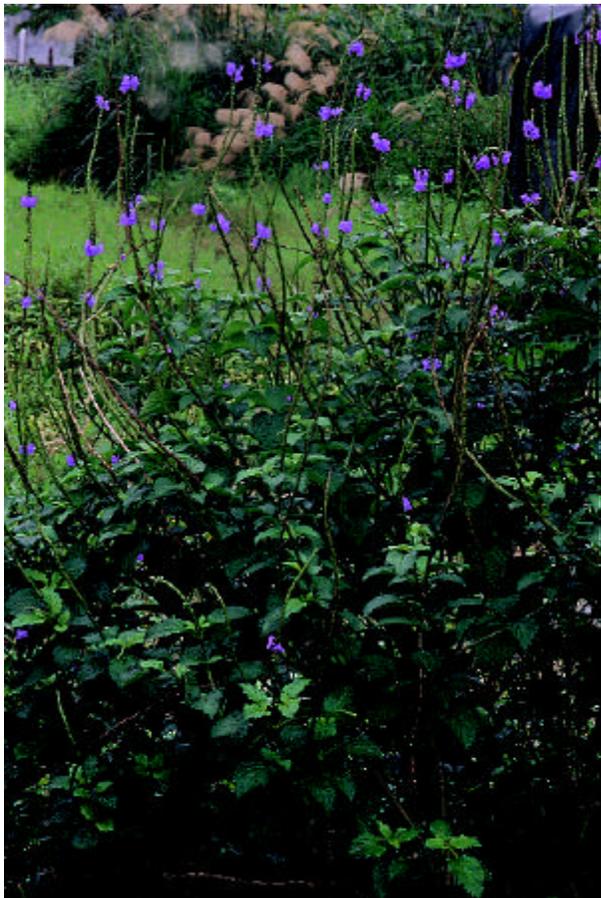
tional Park, *Kouh 10184* (TAI), *Hsu, Kao & Chuma 8162 pro parte* (TAI); Chioupeng, seacoast, *Hsu 480* (TAI); Hengchun, *Peng 3057* (TAI); Chuanfanshih, road side, *Tang 1025* (TAI); Santimen, *Jeng 199* (TAI); Kaoshu, road side, *Kao 9880* (TAI); Shihtzu Hsiang, Shouka, elev. ca. 400 m, *Chen 873* (HAST); Haishenkung, elev. ca. 100-200 m, mountain slop, in deforested area, *Chiang 1669* (TAIF); Kueitien, *Chen et al. 1892* (TAIF); Manjou Hsiang, Lanren Hsi (River), *Chen et al. 331* (TAIF), Manjou, Finshueilin, *Chen et al. 4581* (TAIF 130059); Tawu, seacoast, *Chung & Chang 7951* (TAIF); Chiuju, *Chiang 1105* (TAIF); Wanan, *Yang 28679* (TAIF). KAOHSIUNG HSIEN: Lioukuei, road side, *Kiang et al. 74* (TAI); Shoushan, *Tang 717* (TAI); between Shanping Forest Playground and Lioukuei, elev. ca. 450 m, *Kawasaki 1014* (HAST); Meinung, elev. ca. 100 m, deforested area, along path side, *Chiang 2504* (TAIF). TAINAN HSIEN: Hsinghua, cultivated, 14 Apr 1925, *Yasukawa s. n.* (TAIF); Matou, *Kiang (Chiang) 522* (TAI), without further locality, *Yang 1577* (TAI); Tainan city, Chu-kaio-tsoo, Sugar Exp't Institute, *Mori 1980* (TAD); Peimen, Chiali, *Mori 74* (TAI). CHIAYI HSIEN: Chuchi Hsiang, along a creek nearby Hsianguang Temple, elev. ca. 440 m, *Lin 475* (HAST). CHANGHUA HSIEN: Pakuashan, *Kuoh 1603* (TAI), *Kao & Chuang 1007* (HAST); Chihchow Farm, on fertile black soils, *Hsu 4752*. NANTOU HSIEN: Lienhuachih, elev. ca.

600 m, *Ho 179* (HAST, TAI, TAIF). TAIPEI CITY: Taihoku (Taipei) Botanic Garden, 18 Aug 1928, *Umetani s. n.* (TAD), *s. d.*, *Ku s. n.*, 15 Jan 1940, *Lin s. n.*; Taihoku (Taipei), 7 Jul 1947, *Lin s. n.*, 21 Sep 1929, *Mori s. n.* (all at TAI). HUALIEN HSIEN: Fenglin, *Kao 9799* (TAI); Hualien, Biyun Village, roadside, in waste ground, 1 Mar 2001, *Chen s. n.* (HLTC); Hualien Bridge, broadleaf forest, along trail to the mouth of the Hualien Hsi (River), 12 May 2001, *S. H. Chen s. n.* (HLTC); Hsiulin Hsiang, Tsungte, elev. ca. 5 m, *Kao 241* (HAST).

*Disturibution and Notes.* *Stachytarpheta urticaefolia* is an almost pantropic weed, probably native of tropical Asia, widely distributed throughout tropical and subtropical America and in Africa (Moldenke and Moldenke, 1983), introduced and naturalized to southern China (Chen and Lan, 1982), the Ryukyu Islands (Walker, 1976) and the Hawaii Islands (Haselwood and Motter, 1983).

In Taiwan, *S. urticaefolia* is widespread (Figure 1), commonly occurring in disturbed lowlands, waste sites, at edges of secondary vegetation and along beaches and roadsides; flowering throughout the year.

The present species has long been reported as present in Taiwan by Sasaki (1928), Hsiao (1978), Ying (1998) and Yang et al. (1998). However, they all misapplied the name "*S. jamaicensis*" for what is actually *S. urticaefolia*. Upon



**Figure 4.** *Stachytarpheta urticaefolia* (Salisb.) Sims in its natural habitat.



**Figure 5.** *Stachytarpheta urticaefolia* (Salisb.) Sims showing the corolla with stamens included and style slightly exerted.

examination of the collections these authors cited as vouchers (*Hsu & Kao 3368*, *Kao 4218*, *Huang & Kao 5069*, *Ho 179*, *Kuoh 1603*, *Hsu 4752*, *Chiang 522*, *Kiang et al. 74*, *Tang 717*, *Hsu 480*, *Kao 9880*, *Hsu et al. 8162*), we found that, except for *Huang & Kao 5069*, which appears to represent *S. jamaicensis*, all specimens examined are definitely *S. urticaefolia*. We have not seen the type of either *S. urticaefolia* or *S. jamaicensis*, but the color illustration of *S. urticaefolia* given by Sims (1816) and the comparison of the diagnostic characters of *S. urticaefolia* and *S. jamaicensis* provided by Sims (1816) and Moldenke and Moldenke (1983) are helpful in identifying both. The earliest herbarium record of *S. urticaefolia* in Taiwan was a cultivated plant specimen at TAIIF (14 Apr 1925, *Yasukawa s. n.*).

**2. *Stachytarpheta jamaicensis* (L.) Vahl, Enum. Pl. 1: 206.**

1804; Moldenke, Ann. Missouri Bot. Gard. 60: 74-75. fig. 5. 1973; Walker, Fl. Okin & S. Ryuk. Isl. 886. 1976; Moldenke & Moldenke in Dassanayake et al., Rev. Handb. Fl. Ceylon 4: 253-256. 1983; Haselwood & Motter, Handb. Hawaiian Weeds 332-333. 1991. Acevedo-Rodríguez, Fl. St. John, U. S. Virgin Isl. (Memoirs) 78: 445. fig. 204 g-j. 1996; Winderlin, Guide Vasc. Pl. Florida 524. 1998; Ying, Coloured Illustr. Fl. Taiwan 6: photo 1606. 1998. 牙買加長穗木 Figures 3, 6, 7

*Stachytarpheta indica* auct. non Vahl: Backer & Bakh. f. Fl. Java 2: 598. 1965; Corner & Watanabe, Illustr. Guid. Trop. Pl. 767. fig. 271. 1969.

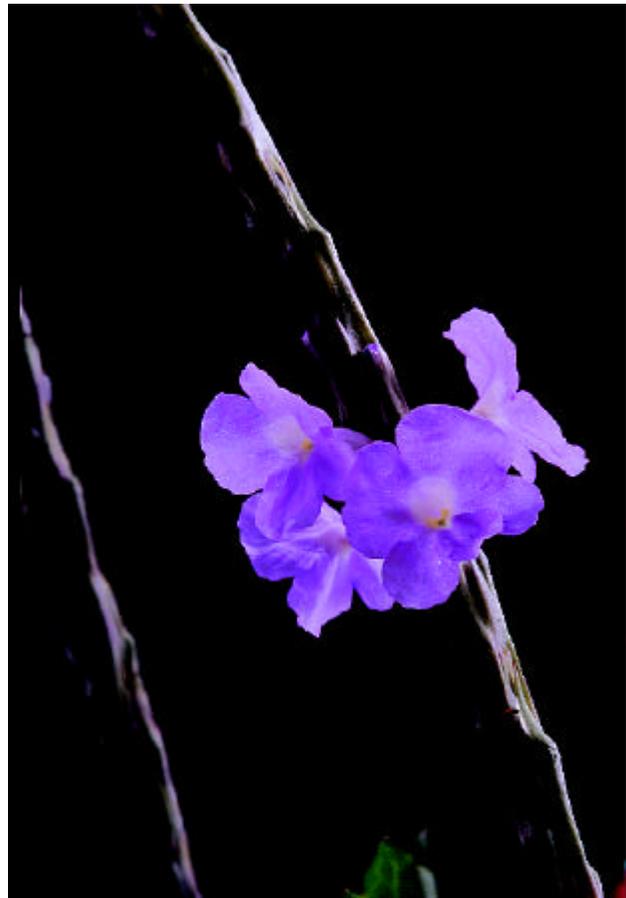
*Stachytarpheta cayennensis* auct. non (L.C. Rich) Vahl: Ying, Coloured Illustr. Fl. Taiwan 6: 609-610. 1998.

Perennial herbs, usually becoming brown, grayish brown to dark purple upon drying; plants low and spreading, 80-120 cm tall, slightly woody at the base, the stem or branches dichotomous, depressed and 4-angled, more or less purplish, glabrous except young or at nodes. Leaves opposite, rather fleshy, grayish green flushed with purple; blade elliptic, to elliptic-oblong, 5-8 cm long and 3-5 cm wide, obtuse or rounded apically, coarsely serrate with forward-pointing blunt teeth, the lower margin of teeth usually at least twice as long as the upper margin, cuneately or obliquely narrowed basally and tapering to a winged petiole 2-3 cm long, microscopically glandular peltate on both surface, slightly pilosulous on the veins of lower surface or both. Spikes terminal, terete and stout, 35-50 cm long, 4-6 mm in diameter, grayish green flushed with purple, glabrous, microscopically glandular peltate; rachis with the depressions much narrower than the diameter of the rachis. Flowers sessile, semi-immersed in the rachis depressions, 3-4 flowered at a time; bracts ovate lanceolate, 5-6 mm long and 2.5 mm wide, acuminate and aristate at apex, the edges scarious and striate, with obscure cilia, the median portions thicker and fleshy, without distinct midrib, microscopically glandular peltate on the abaxial surface; calyx tubular, compressed, 5-6 mm long and 2.5 mm wide, the tube thin-walled, 4-ribbed, microscopically glandular peltate without, the rim bifid, with triangular teeth up to 2 mm long; corolla salverform, pale violet, 8-10 mm long, the limb 9-12 mm

across with remotely short glandular hairs on the surface, upper lip deeply notched or 2-lobed, the lobes orbicular, 5.5 mm across, lower 3-lobed, the lobes broadly elliptic, 4 mm long and wide, all the lobes inconspicuously serrulate, the tube cylindrical, slightly curved, with the throat white, long glandular haired within below the upper lip; perfect stamens 2, anterior, inserted above the middle of the corolla-tube, filament 1.2 mm long and 0.3 mm wide, white



**Figure 6.** *Stachytarpheta jamaicensis* (L.) Vahl in its natural habitat.



**Figure 7.** *Stachytarpheta jamaicensis* (L.) Vahl showing the corolla with stamens and style included.

and glabrous, anthers light yellow, 2-celled, the cells unequal, 0.6–0.8 mm long, dehiscing in a continuous line; staminodes 2, posterior, 1.2 mm long and 0.15 mm wide, with stiff hairs at the lower part; style elongate, 8 mm long, white flushed with violet; stigma greenish, capitate, 0.3 mm across; ovary light yellow, 1.5 mm long; all stamens and style included, the anthers and the stigma in a same height, 1 mm below the corolla-throat. Fruit enclosed by the persistent calyx, black, oblong and compressed, 4 mm long and 1.5 mm wide, with a beak 0.5 mm long and a persistent style 1.5 mm long, splitting at maturity into 2 cocci; seed closely enclosed by the thin pericarp.

*Specimens examined.* TAIWAN. TAITUNG HSIEN: Lanyu (Botel Tobago), Yu-jen Chi, along stream side, flowers purple, *Iwami 433* (TAI), Hung-tou to Wang Nan-chao, in coastal region, flowers purple, *Hsu 4853* (TAI), without further locality, *Hsieh 1607* (TAI), without further locality, *Masamune 4076* (TAI), along coast, *Huang & Kao 5069* (TAI), Langtao village, *Yang et al. 6611* (HAST); Lutao (Green Island), *Hua s. n.* (HLTC), *Lee s. n.* (HLTC). PINGTUNG HSIEN: Hsiaoliuchiu, *Lin 625* (TAI: there are two specimens on this sheet; the one on the right is *S. jamaicensis*, the other is a specimen of *S. urticaefolia*); Kenting, along roadsides, *Hsu 316* (TAI); Nanrenshan, elev. ca. 340 m, *Liu 910* (NTUF). KAOHSIUNG HSIEN: Kaohsiung city, Shoushan, mountain slope, in tropical broad-leaf forest, *Yang* (TAIF); Tungshachuntao, Tungshatao, elev. ca. 0–20 m, open places, flowers blue, *Huang et al. 16619*; Tungshatao, elev. ca. 0–20 m, open wastelands, inflorescence abnormal, *Huang et al. 16671*; Nanshachuntao, Taipingtao, elev. ca. 0–4 m, open places, flowers blue, *Huang et al. 16427* (all at TAI). PENGHU HSIEN: Fengkuei, Shihli Li, in open fields near a grave yard, *Chen 706* (HAST). CHANGHUA HSIEN: Wangkung, along the coast, 20 Apr 2001, *Lin s. n.* (HLTC). HSINCHU HSIEN: Shanjiao, en route to Lienhuashih, in sandy wetlands, *Peng 9481* (HAST), Lienhuashih, elev. ca. 100 m, *Peng 5140* (HAST). HUALIEN HSIEN: Hualien, Meilung, in sandy wastesites, 10 Dec 2000, *Chen s. n.* (HLTC), Nanbin, en route from Ami Culture Village to the sea, on lawns and exposed sites along trail, 12 May 2001, *Chen s. n.* (HLTC).

*Distribution and Notes.* *Stachytarpheta jamaicensis* (L.) Vahl is a pantropic weed widely distributed in both tropical and subtropical America, introduced and naturalized in tropical Africa and Asia (Moldenke and Moldenke, 1983). It also occurs in the Ryukyu Islands (Walker, 1976) and the Hawaii Islands (Hasselwood and Motter, 1983).

In Taiwan, *S. jamaicensis* is not as common as *S. urticaefolia* (Figure 1). It occurs in central, eastern and southern coastal counties (“Hsien”), found on lawns, at waste sites along roadsides and seashores, and in open sunny sandy soil, often associated with other common weeds such as *Bidens pilosa* L. var. *radiata* Sch.-Bip., *Conyza canadensis* (L.) Cronq. var. *canadensis*, *Conyza sumatrensis* (Retz.) Walker, *Chloris barbata* Sw., *Cynodon dactylon* (L.) Pers., *Humulus scandens* (Lour.) Merr., *Crotalaria pallida* Ait., *Leucaena leucocephala* (Lam.) de

Wit, *Sesbania cannabiana* (Retz.) Poir, *Ipomoea triloba* L., *Sida rhombifolia* L.; flowering throughout the year.

The present species has been mentioned in the literature. Hong et al. (1980) in their *Seaside Plants of Taiwan*, noted a distinct taxon from *S. urticaefolia* (as “*S. jamaicensis*”), in which the flower is pale-blue, the leaves are ovate-elliptic, and the leaf-teeth are coarse and blunt. Like nearly all other botanists, Ying, in his *Coloured Illustrated Flora of Taiwan*, Volume 6, p. 608 (1998), misapplied the description of *S. urticaefolia* to *S. jamaicensis*. However, his color photo accompanying the description is clearly *S. jamaicensis*. In fact, based on a specimen collected by Ikeda from Botel Tobago Island (Lanyu) in 1968, Hatusima (1970) did correctly report the presence of *S. jamaicensis* species in Taiwan. However, as the name “*S. jamaicensis*” was consistently misused for what is actually *S. urticaefolia*, the actual occurrence of *S. jamaicensis* in Taiwan has not attracted any attention. As the earliest collection of the present species was made in 1943 (*Masamune 4076*) this weedy species appears to have become an established alien plant during the past half century.

Ying (1998) reported the occurrence of *S. cayennensis* (L. C. Rich) Vahl (“*S. cayennensis*”) in Taiwan. He provided a description of the species and noted it as being naturalized in southern Taiwan, below 500 m elevation. Unfortunately, the report was not documented by any voucher specimens. Based on Ying’s description of “*S. cayennensis*,” however, we consider it a misapplied name for *S. jamaicensis*.

**Acknowledgements.** We are indebted to the curators of HAST; TAI; TAIF; NTUF and HLTC (Department of Science Education, National Hualien Teachers College) for making specimens available for study. We thank S. C. Chen and M. S. Lin for assistance in collecting the specimens and S. C. Hua and P. I. Lee for preparing the manuscript. We also gratefully acknowledge D. L. Austin and C.-I Peng for critical reviews of the manuscript and helpful suggestions for improvement. This work was supported by a research grant from the Council of Agriculture, Taiwan, ROC.

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## 台灣木馬鞭屬植物之分類

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原產熱帶亞洲之「長穗木」(*Stachytarpheta urticaefolia* (Salisb.) Sims) 以往台灣之分類學者均將其誤訂為「牙買加長穗木」(*S. jamaicensis* (L.) Vahl)，本研究指出長穗木與牙買加長穗木之不同，並發現牙買加長穗木亦零星出現於南部、東部及中部海岸，過往雖有被採集紀錄，然而研究者均將其視為長穗木。本文發表牙買加長穗木為新紀錄植物，除描述長穗木、牙買加長穗木兩种植物之分類特徵、生態環境及檢索表外，並提出兩者在台灣之分布圖、外形解剖圖幅及彩色照片以供辨識。

關鍵詞：木馬鞭屬；牙買加長穗木；長穗木；馬鞭草科；台灣；分類學。