

研究報告

## 臺灣新歸化錦葵科植物—疏花苘麻

林家榮<sup>1</sup> 王秋美<sup>2</sup> 楊國禎<sup>3</sup> 曾彥學<sup>4</sup>

【摘要】本文首次報導原產熱帶美洲，目前已歸化於臺灣中部低海拔區的疏花苘麻 (*Abutilon hulseanum* (Torr. & A. Gray) Torr. ex A. Gray)。描述其形態特徵、地理分佈及生育地環境，並提供彩色圖片與線繪圖以資辨識，另外比較與其相似種大葉苘麻 (*A. grandifolium* (Willd.) Sweet) 在外觀形態特徵差異。

【關鍵詞】錦葵科、疏花苘麻、歸化植物、臺灣

Research paper

## *Abutilon hulseanum* (Torr. & A. Gray) Torr. ex A. Gray (Malvaceae), a Newly Naturalized Plant in Taiwan

Chang-Jung Lin<sup>1</sup> Chiu-Mei Wang<sup>2</sup> Kuoh-Cheng Yang<sup>3</sup> Yen-Hsueh Tseng<sup>4</sup>

【Abstract】A newly naturalized plant, *Abutilon hulseanum* (Torr. & A. Gray) Torr. ex A. Gray (Malvaceae), native to the tropical Americas, has recently been found in low elevation of central Taiwan. It is a newly recorded species to the flora of this island. A detailed description, line-drawings, photographs and geographic distribution are provided for identification of this species. The morphology of *A. hulseanum* is very similar to *A. grandifolium* (Willd.) Sweet, and is distinguished from features of petiole, flowers and mericarps.

【Key words】Malvaceae, *Abutilon hulseanum*, naturalized plant, Taiwan.

---

1. 國立中興大學森林學系，40227台中市國光路250號

Department of Forestry, National Chung Hsing University, 250 Kukwang Rd., Taichung 40227 Taiwan.

2. 國立自然科學博物館植物學組，404台中市館前路1號

Department of Botany, National Museum of Natural Science, 1, Guancian Rd., Taichung 404 Taiwan.

3. 靜宜大學生態學系，43301台中市沙鹿區中棲路200號

Department of Ecology, Providence University, 200 Chung Chi Rd., Taichung 43301 Taiwan.

4. 國立中興大學森林學系，40227台中市國光路250號，通訊作者。

Department of Forestry, National Chung Hsing University, 250 Kukwang Rd., Taichung 40227 Taiwan. Corresponding

Author E-mail : tseng2005@nchu.edu.tw

## INTRODUCTION

The family Malvaceae consists of 100 genera and ca. 1,000 species, distributed in tropical and temperate regions of N and S Hemisphere (Tang *et al.*, 2007). *Abutilon Mill* is one of the larger and most difficult genera of the family Malvaceae without a solid, up-to-date revisionary treatment (Fryxell, 1997).

Over 150 species of *Abutilon* are distributed in tropical and subtropical areas (Chang, 1993). The genus is delimited from most other genera in Malvaceae by the lack of an epicalyx, by its mericarps that lack wings, have an endoglossum, and generally show dorsal dehiscence, and by the sub-entire to markedly serrate leaves (Esteves and Krapovickas, 2002). In Taiwan 4 species of *Abutilon* have been reported (Boufford *et al.*, 2003; Liu and Ou, 1982; Ou and Liu, 1981). Recently, in our botanical exploration, *Abutilon hulseanum* (Torr. & A. Gray) Torr. *ex* A. Gray was found in central Taiwan. The present study gives the species description and illustrations, based on live plant materials from Taiwan.

## TAXONOMIC TREATMENT

***Abutilon hulseanum*** (Torr. & A. Gray) Torr. *ex* A. Gray, Mem. Amer. Acad. Arts, n.s. 4 (Pl. Fendl) : 23. 1849.

*Sida hulseana* Torrey & Gray, Fl. N. Amer. 1(2): 233. 1838.

*Abutilon pauciflorum* A.St.-Hil, Fl. Bras. Merid. (quarto ed.). 1: 206. 1827.

疏花苘麻 Fig. 1-4

Perennial subshrub 0.5-2 m tall, the stems and petioles minutely stellate-tomentulose and with long simple hairs, 2-4 mm long. Leaf blades

mostly 4-16 cm long, ovate, cordate, margin crenate, rounded-acute, softly tomentulose on both Surfaces, petioles subequal to blades or somewhat shorter; stipules ca. 1cm long, linear caducous. Flowers solitary in the leaf axils; pedicels up to 12 cm long, articulated 6-24mm below the flowers; calyx 12-15mm long in flower, accrescent to 15-20 mm long in fruit, stellate-tomentulose, more than half-divided, the lobes cordate; corolla rotate, the petals ca. 2 cm long, pink or pale pink; staminal column 4-5 mm long, the filaments 2-3 mm long, the anthers yellow; styles ca. 12 mm, dark red. Fruits 12-15 mm long, 2-2.5 cm in diameter; mericarps ca. 12-15 mm long, apically apiculate, blackish at maturity, prominently hirsute, the hairs 1-2 mm long; seeds ca. 2mm long, minutely pubescent. Chromosome number :  $2n=14$  (Fryxell, 1988).

Specimen examined : Taiwan. Changhua County (彰化縣). Xiushui Township (秀水鄉), Yixing Village (義興村), elev. ca. 15 m,  $24^{\circ} 04'48.51''$  N,  $120^{\circ} 29'45.34''$  E, 12 Dec.2011, Lin 612 (TCF) ; Yunlin County (雲林縣). Mailiao Township (麥寮鄉), Sansheng Village (三盛村), elev. ca. 10 m,  $23^{\circ} 48'13.70''$  N,  $120^{\circ} 14'41.24''$  E, 4 Aug. 2011, Lin 514 (TCF).

**Notes :** *A. hulseanum* closely resembles *A. grandifolium*, but it is distinct for having red stems (branches) and red petioles in mature, pink flowers, entire petals, smooth staminal column and each fruit with ca.12 mericarps (vs. green stems (branches) and green petioles in mature, yellow flowers, serrulated petals, sparse hair staminal column and each fruit with ca.10 mericarps.) (Table 1).

Table 1. Comparison of *Abutilon hulseanum* (Torr. & A. Gray) Torr. ex A. Gray and *Abutilon grandifolium* (Willd.) Sweet

Feature \Species	<i>Abutilon hulseanum</i>	<i>Abutilon grandifolium</i>
Stem (Branch) \ Petiole	From green to red	green
Flower	pink	yellow
Petal	entire	serrulated
Staminal column	smooth	with sparse hair
Number of mericarp	ca. 12	ca. 10

**Distribution** : This species is believed to have originated from southern Texas to Tabasco and in Florida, Honduras, and the West Indies ( Puerto Rico, Jamaica, Cuba, and the Lesser Antilles) (Fryxell, 1988). In Taiwan, this species was found in the central part of western Taiwan . It occurs in open area such as roadsides, upland

field, ditch, and in open sunny sandy soils. It Flowers all year round, but principally from May to October.

**ACKNOWLEDGEMENTS**

We thank Mr. Chang-Lang Liu (劉昌郎) and Mr. Yu-Ping Chang (張友萍) for field assistance.

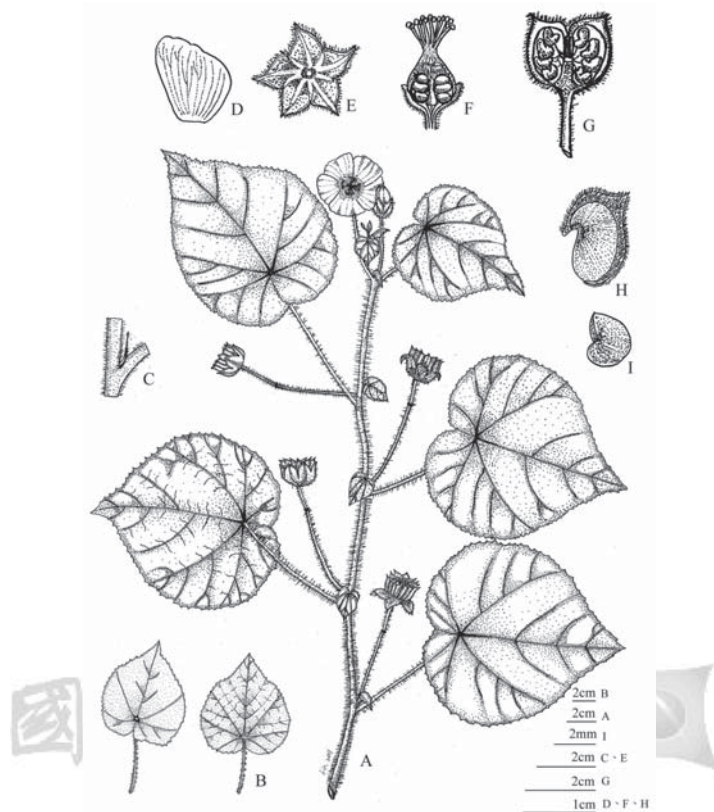


Fig. 1. *Abutilon hulseanum* (Torr. & A. Gray) Torr. ex A. Gray. A : Habit. B:Leaves. C. Stipule. D : Petal. E : Calyx. F : Longitudinal section of stigma. G : Longitudinal section of carpel. H : Mericarp. I : Seed.



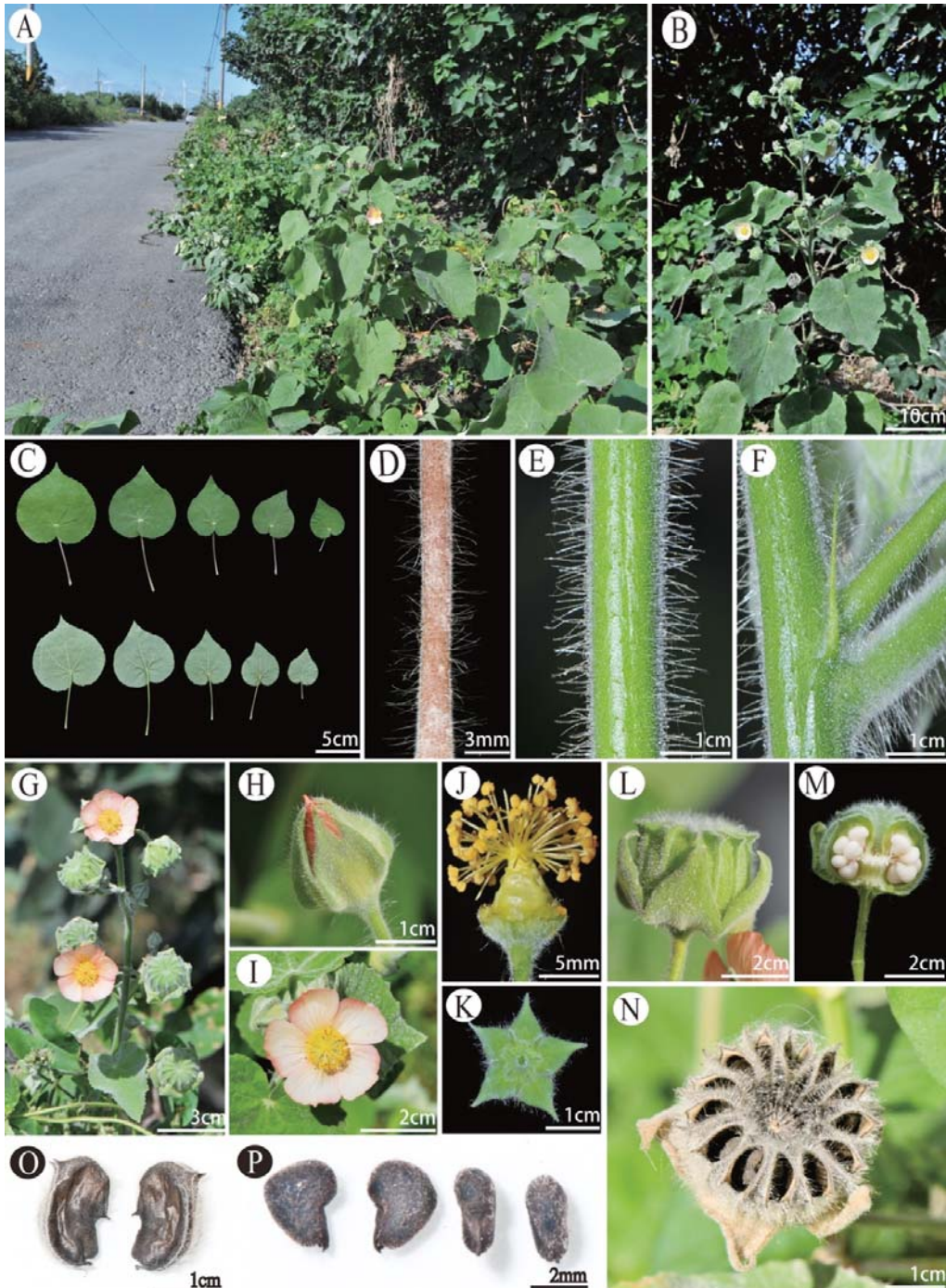


Fig. 2. *Abutilon hulseanum* (Torr. & A. Gray) Torr. ex A. Gray. A. Habitat. B. Habit. C. Types of leaves. D. Petiole. E. Stem with long hairs. F. Stipule. G. Inflorescence. H. Flower bud. I. Flower. J. Flower remove perianth. K. Calyx. L. Young fruit. M. Longitudinal section of carpel. N. Mature fruit. O. Mericarps. P. Seeds.



Fig. 3. Cited specimen of *Abutilon hulseanum* (Torr. & A. Gray) Torr. ex A. Gray (Lin 514)

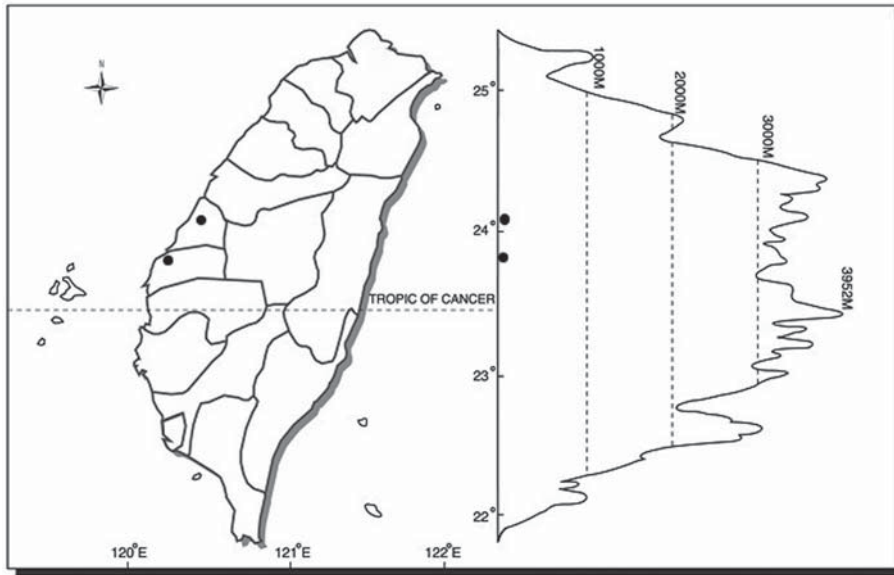


Fig. 4. Distribution of *Abutilon hulseanum* (Torr. & A. Gray) Torr. ex A. Gray in Taiwan.

#### LITERATURE CITED

- Boufford, D. E., C. F. Hsieh, T. C. Huang, H. Ohashi, C. I. Peng, L. Tasi and K. C. Yang (2003) Malvaceae. In Huang, T. C. *et al.* (eds) *Flora of Taiwan* 2nd ed. 6:77.
- Chang, C. E. (1993) Malvaceae. In: Huang, T. C. *et al.* (eds.) *Flora of Taiwan* 2nd ed. Vol. 3. Editorial Committee. Department of Botany, National Taiwan University. p. 739-741.
- Esteves, G. L. and A. Krapovickas (2002) New species of *Abutilon* (Malvaceae) from Sao Paulo State, Brazil. *Kew Bull.* 57(2):479-482.
- Fryxell, P. A. (1997) The American genera of Malvaceae-II. *Brittonia* 49:204-269.
- Fryxell, P. A. (1988) Malvaceae of Mexico. In: *Systematic Botany Monographs*. 25: 24-68.
- Liu, Y. C and C. H. Ou (1982) Contributions to the Dicotyledonous Plants of Taiwan (VII). *Bulletia Exper. For. NCHU* 4:1-16.
- Lu, F.Y., C.H.Ou, Y. C. Chen, Y. S. Chi, K.C. Lu and Y. H. Tseng (2006) Malvaceae. *Tree of Taiwan*. Vol. 2. p.173-191.
- Ou, C. H. and Y. C. Liu (1981) Contributions to the dicotyledonous plants of Taiwan (VI). *Quarterly Journal of Chinese Forestry*. 4(2):21-31.
- Tang, Y., G. G. Michael and J. D. Laurence (2007) Malvaceae. *Flora of China*. 12: 275-279.