

Research paper

Sida rhombifolia L. var. *maderensis* (Lowe) Lowe (Malvaceae), A New Recorded Plant in Taiwan

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【Abstract】 *Sida rhombifolia* L. var. *maderensis* (Lowe) Lowe, a species of Malvaceae can frequently be found from seashore to 1,000 m altitude in Taiwan, but has been often misidentified and attributed to *S. rhombifolia* L. var. *rhombifolia*. Though they are alike in outward appearance, *S. rhombifolia* L. var. *maderensis* (Lowe) Lowe can easily be distinguished by the number of carpels and characteristic of mericarps. And it is here of proposed and described as a new recorded variety in Taiwan.

【Key words】 Malvaceae, *Sida rhombifolia* L. var. *maderensis* (Lowe) Lowe, Taxonomy, New recorded, Taiwan.

研究報告

台灣新紀錄錦葵科植物—單芒金午時花

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【摘要】 本篇報告台灣一新紀錄錦葵科植物單芒金午時花 (*Sida rhombifolia* L. var. *maderensis* (Lowe) Lowe)，本種常見於台灣全島中、低海拔的山麓地區，因其形態特徵與菱葉金午時花 (*S. rhombifolia* L. var. *rhombifolia*) 極為相似，經常被混淆。但兩分類群可藉由心皮數目及分果片的形態加以區分，前者每一朵花具10-12枚心皮且每一分果片僅具一芒刺而後者每一朵花具8-10枚心皮且每一分果片具二芒刺。

【關鍵詞】 錦葵科、單芒金午時花、植物分類學、新紀錄、台灣

INTRODUCTION

Recently, 8 taxa were recognized in the second edition of Flora of Taiwan (Boufford *et al.* 2003). One naturalized species, *S. spinosa* L., was published by authors (Lin *et al.* 2010). In our recent revision of *Sida* of Taiwan 11 taxa of *Sida*

were treated and one sharply distinct species was discovered. Consultation of original materials and the recent monograph on *Sida* (Henry 1896, Matsumura & Hayata 1906, Kawakami 1910, Hayata 1911, Sasaki 1928, Mori 1935, Masamune 1954, Hatusima 1960, Li 1963, Chang 1977、

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1993, Ying 1992, Cheng & Tai 1999, Li *et al.* (2006) and relevant literature from nearby regions (Hatusima 1960, Walker 1976, Iwatsuki *et al.* 1999, Tang *et al.* 2007, Lin 2010) supports its recognition as a new recorded taxon in Taiwan.

TAXONOMIC TREATMENT

***Sida rhombifolia* L. var. *maderensis* (Lowe)**

Lowe, Fl. Madeira : 69. 1868.

Sida maderensis Lowe, Trans. Cambridge Philos. Soc. 4: 35. 1831.

Sida rhomboidea sensu auct. Cheng & Tsai, in Quarterly Journal of Chinese Forestry 30 (1): 131-134. 1999. non Roxb., Asiatic Researches 11: 178. 1810.

單芒金午時花 Fig. 1. 、 2. 、 3. & 4.

Perennial shrubs, stems erect, up to 2 m high, many branches, minutely stellate-pubescent. Leaves alternate; blade narrowly oblong or elliptic-lanceolate, 2-9.5 cm long, 1-4.6 cm wide, obtuse at apex, rounded at base, serrate, basally 3-veined, minutely stellate-tomentose beneath, glabrescent above; petioles 0.3-0.4 cm long, occasionally short spines at base; stipules 0.5 cm long, linear. Inflorescence axillary, solitary, peduncle 0.8-1.4cm, pedicel 0.4-0.6cm;

without epicalyx; calyx campanulate, joined, lobes 5, triangular; corolla yellow, ca. 1-1.3 cm in diameter, petals 5, subcordate; 0.7 cm across, minutely tomentose, gynoecium, stamen connivent into column at base, filaments 30, glandular-hairy; pollen grains ca. 65.4 μm , spheroidal, porate, spines on the surface; stigma white-yellow, style 10-12. Fruits schizocarpic, nearly globose, 0.5-0.7 cm across, mericarps 10-12, trigonous, apically 1-awned, the awn ca. 2 mm long, stellate-hairy; dorsally reticulate-veined.

Specimens examined: Taiwan. New Taipei City. Pinglin District (坪林區), Qingling temple (慶林宮), Oct. 7, 1999, *Peng 17800* (HAST); Nantou County, Caotun town (草屯鎮), evergreen forest margin. 2 Oct., 2008, *Lin 26* (TCF); Pintung County. Laupei Township, Dahanshan (大漢林道), 25 Apl. 2009, *Lin 194* (TCF); Hualien County. Sioulin Township (秀林鄉), Provincial road No. 9, 184.5 K, 24 Jul. 2009, *Lin 380* (TCF).

Notes: *Sida rhombifolia* L. var. *maderensis* (Lowe) Lowe closely resembles *S. rhombifolia* L. var. *rhombifolia*, but it is distinct for having one awn of mericarp (Fig. 4.); 10-12 pisitil; 30 stamen; 10-12 mericarps (vs. two awns of mericarp; 8-10 pisitil; 20-25 stamen; 8-10 mericarps) (Table 1.).

Table 1. Comparison of *Sida rhombifolia* L. var. *maderensis* (Lowe) Lowe and *S. rhombifolia* L. var. *rhombifolia* (Fig. 4.)

Species	<i>S. rhombifolia</i> var. <i>maderensis</i>	<i>S. rhombifolia</i> var. <i>rhombifolia</i>
Pisitil	10~12	8~10
Stamen	30	20~25
Number of carpels	10~12	8~10
Awn of mericarps	1	2

Distribution: The species *Sida rhombifolia* var. *maderensis* native to Taiwan, very common on sunny open areas as roadsides, forest margins and waste places, throughout this island from seashore to 1,000 m altitude (Fig. 5.).

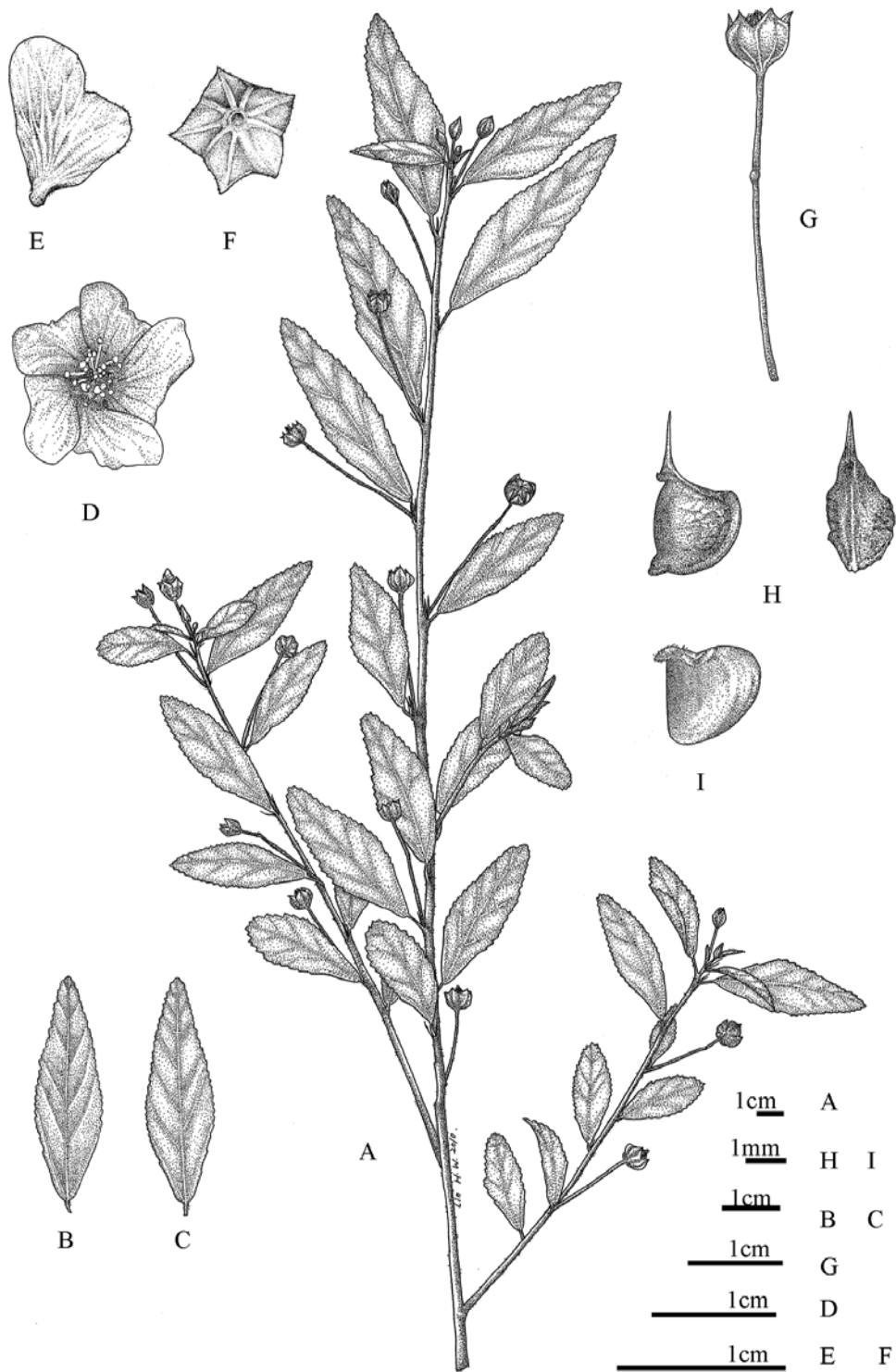


Fig. 1. *Sida rhombifolia* L. var. *maderensis* (Lowe) Lowe A: Habit; B: Leaf adaxial surface; C: Leaf abaxial surface; D: Flower; E: Petal; F: Calyx; G: Fruit; H: Mericarps; I: Seed.

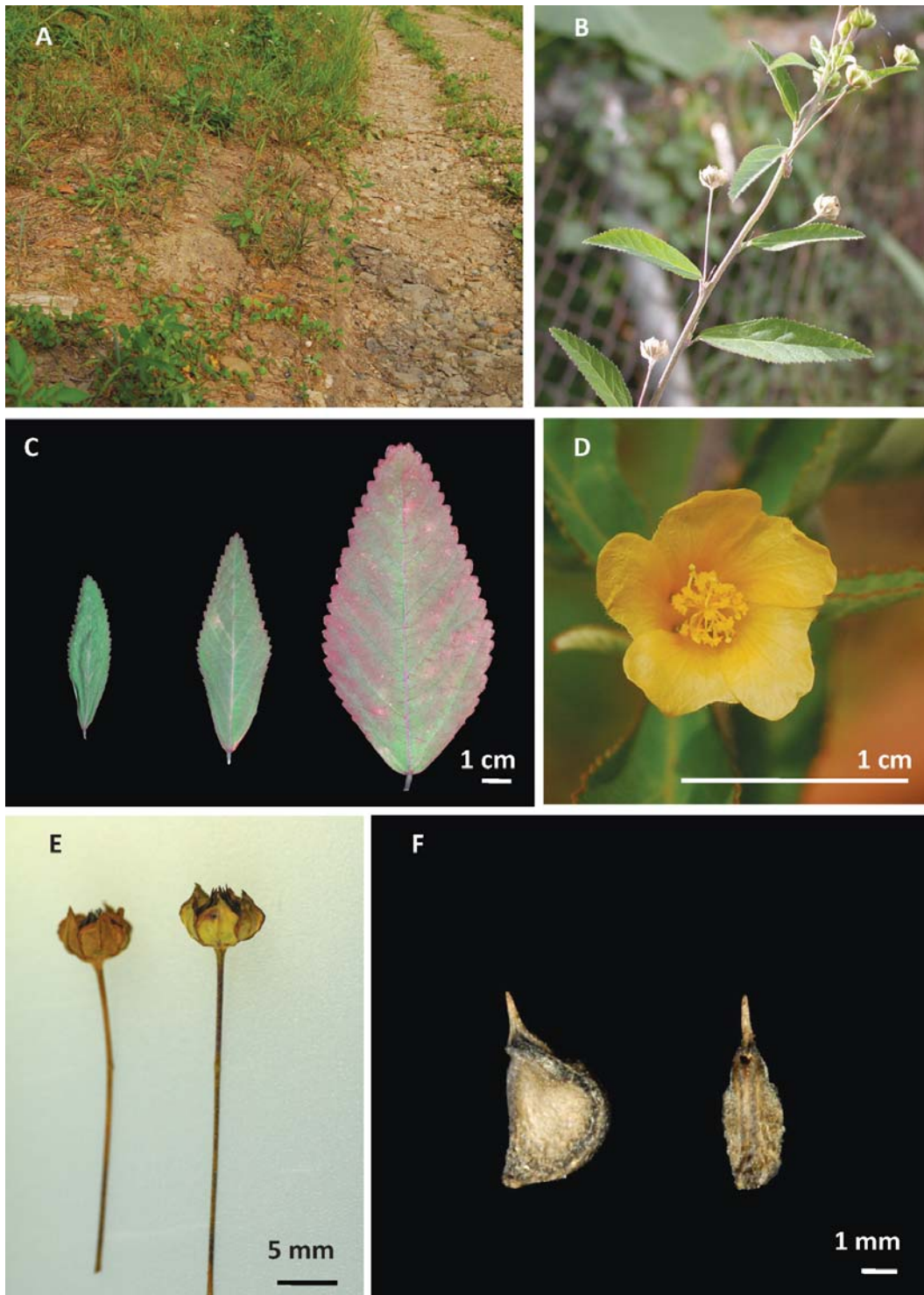


Fig. 2. *Sida rhombifolia* L. var. *maderensis* (Lowe) Lowe A: Habitat; B: Habit; C: Types of leaves; D: Flower; E: Fruit; F: Mericarps.

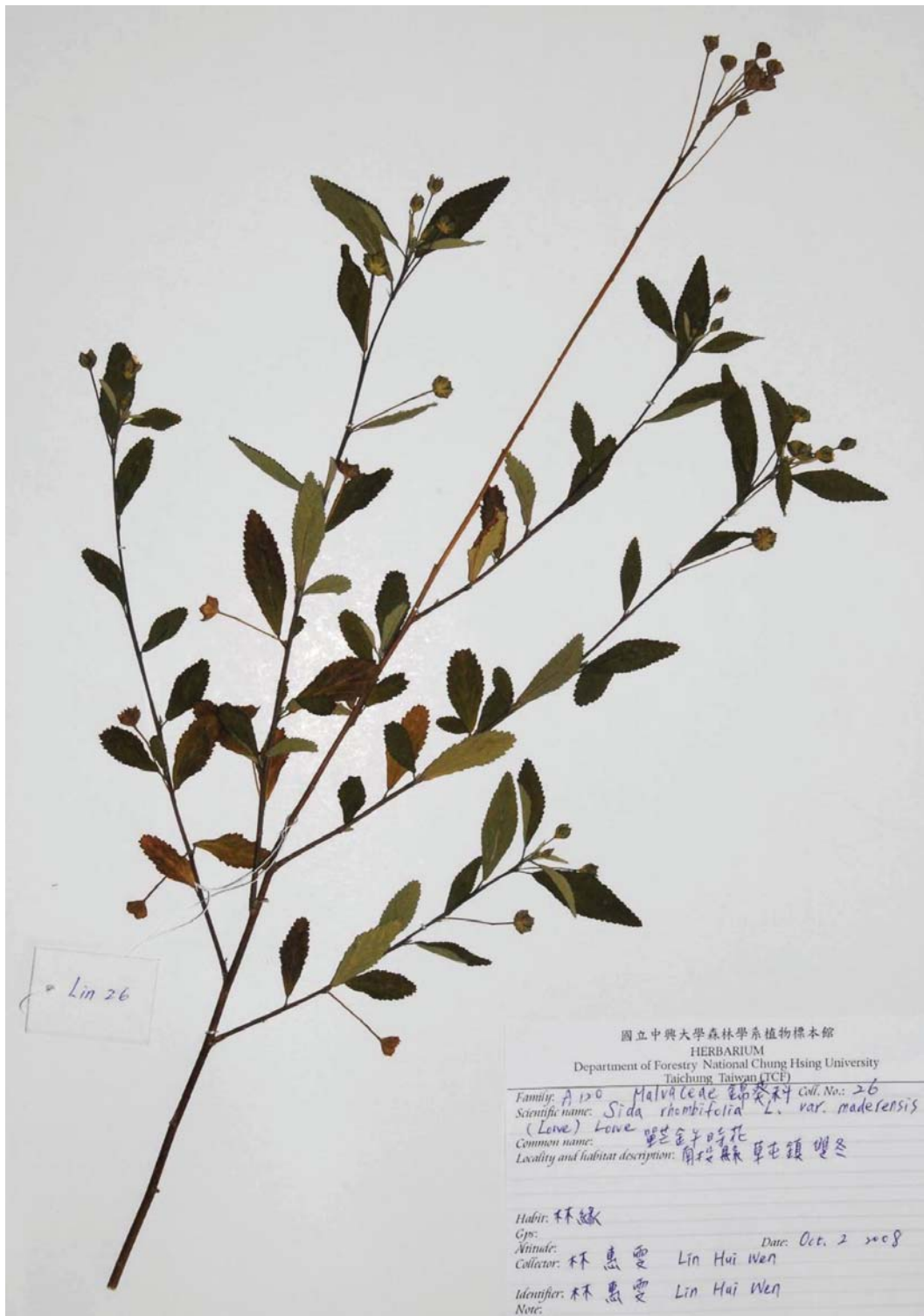


Fig. 3. The specimen of *Sida rhombifolia* L. var. *maderensis* (Lowe) Lowe.

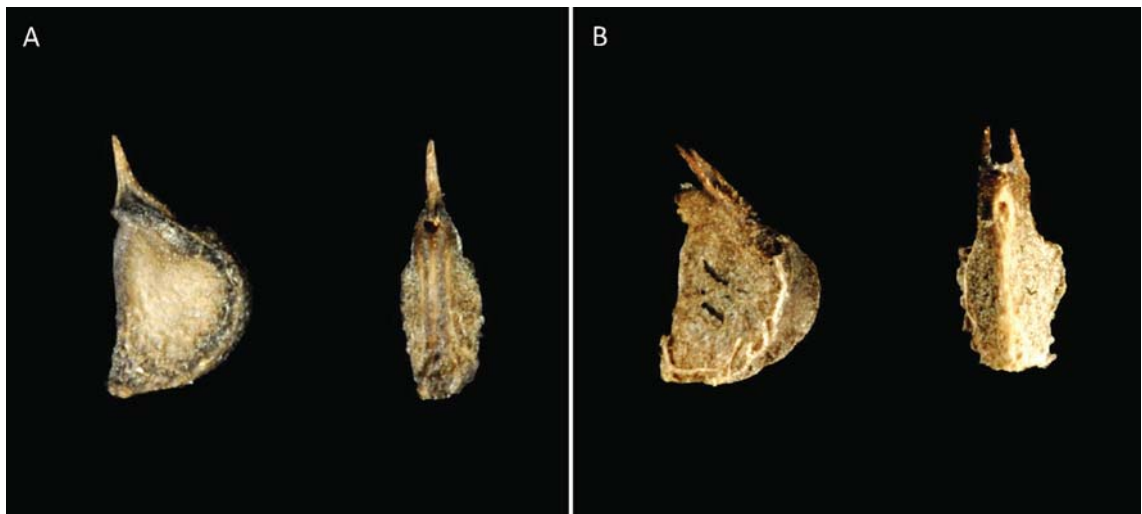


Fig. 4. Compare with mericarps morphology between (A) *Sida rhombifolia* L. var. *maderensis* (Lowe) Lowe and (B) *S. rhombifolia* L. var. *rhombifolia*.

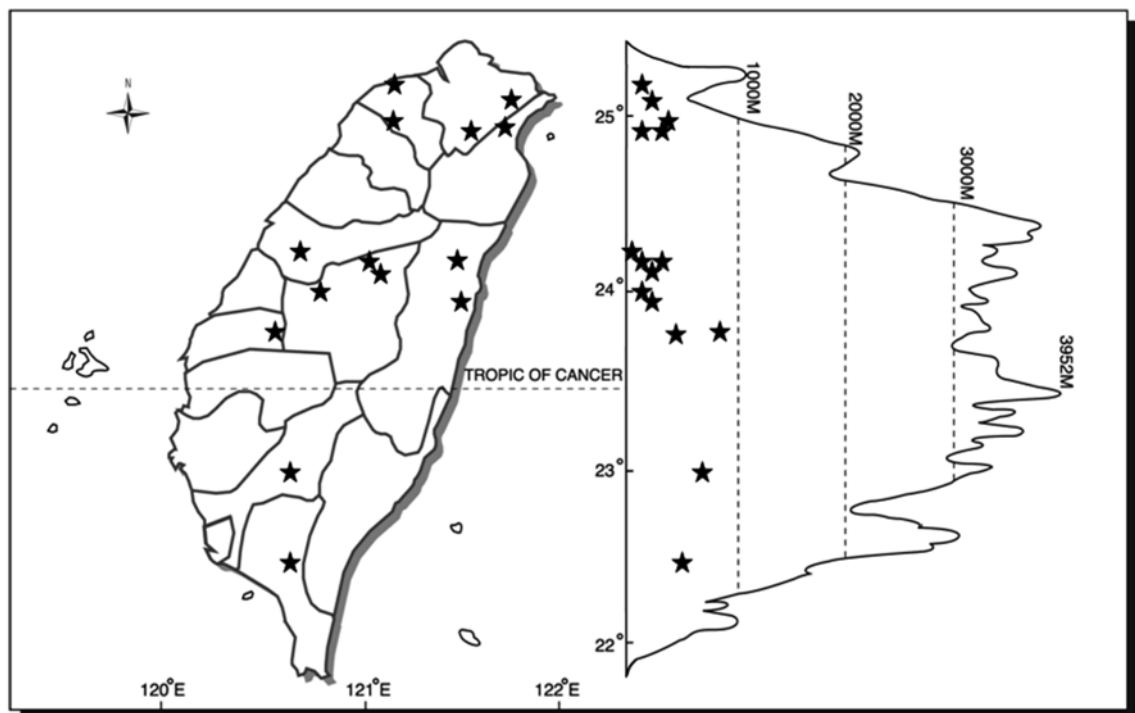


Fig. 5. Distribution of *Sida rhombifolia* L. var. *maderensis* (Lowe) Lowe in Taiwan.

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