

研究報告

臺灣一新馴化植物—金毛菊 (菊科：萬壽菊族)

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【摘要】本文報導新馴化植物—金毛菊，本種隸屬於菊科萬壽菊族。本族臺灣無原生物種，且所有種類均為馴化植物。本種發現馴化於臺灣中部，推測應為人為引進之觀賞花卉，逸出於野外而馴化，文本提供彩色照片、描述及線繪圖等。並回顧臺灣產本族植物之種類、原產地及臺灣之分布，結果顯示本族植物除金毛菊推測因園藝引進而馴化外，其餘種類之過程不詳，但由於分布地區多位於人為活動之範圍，如荒地、林道、河堤等，推測為建設施工或人為無意間引進而造成馴化現象，文中提供本族現有種類檢索表供鑑定之用。

【關鍵詞】金毛菊、菊科、馴化植物、臺灣。

Research paper

Thymophylla tenuiloba var. *tenuiloba* (Compositae: Tageteae), a newly naturalized species in Taiwan

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【Abstract】*Thymophylla tenuiloba* (DC.) Small var. *tenuiloba* is a newly naturalized species in Taiwan. This species is a common ornamental crop, often introduced in gardens. We found several populations in Taiwan, near the urban areas, revealed the dispersal is related to people activity. Line drawing, photos and distribution map were provided, the naturalized species of Tageteae in Taiwan were also revised in this article.

【Key words】*Thymophylla tenuiloba* var. *tenuiloba*, naturalized plant, invasive, Taiwan.

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Introduction

Compositae is one of the largest families in Flora of Taiwan. It is comprised of 84 genera and over 200 species in Taiwan. These genera could be classified into 11 tribes (Peng et al. 1998). Recently, some newly naturalized species was reported from Taiwan, e.g. *Flaveria bidentis* (L.) Kuntze (Tseng & Peng 2008), *Emilia praetermissa* Milne-Rehd. (Chung et al. 2009), *Pectis prostrata* Cav. (Jung et al. 2011), *F. linearis* Lag. (Tseng et al. 2012), *Praxelis pauciflora* (Kunth) R. M. King & H. Rob. (Jung & Kao 2013). Some of these species belong to a neotropical tribe Tageteae, which its distribution is centered in Mexico, comprising 16-23 genera and 216

species over the world (Loockerman et al. 2003). This tribe is generally identified by its pellucid glands containing aromatic oils on the leaves and phyllaries. The capitulescence generally consists of solitary, peduncled heads, although some clustered and compound heads do exist. Heads are radiate or discoid and corollas often yellow to orange (Loockerman et al. 2003).

In this article, we describe a newly naturalized species, *Thymophylla tenuiloba* (DC.) Small var. *tenuiloba*, a newly recorded genus to the Flora of Taiwan. Line drawing, photos and distribution map were provided. In addition, we revise and discuss the naturalized species of Tageteae in Taiwan.

Taxonomic treatment

Key to naturalized Tageteae species in Taiwan

1. Stem prostrate *Pectis prostrata* (伏生香橐菊)
1. Stem erect..... 2
2. Leave not pinnately dissected 3
2. Leaves pinnately dissected..... 4
3. Leaves lanceolate-elliptic, 1-2.5 cm wide..... *Flaveria bidentis* (黃頂菊)
3. Leaves linear, 4-8 mm wide..... *F. linearis* (線葉黃頂菊)
4. Heads arranged into cymoid, florets white *Tagetes minuta* (印加孔雀草)
4. Heads single, florets yellow..... 5
5. Plant 1-2 m tall..... *T. erecta* (萬壽菊)
5. Plant less than 30 cm..... *Thymophylla tenuiloba* var. *tenuiloba* (金毛菊)

Thymophylla Lag. in *Genera et Species Plantarum*

25. 1816. 金毛菊屬

Hymenatherum Cass., Bull. Soc. Philom. Paris
1818: 183. 1817.

Dyssodia Cav. sect. *Aciphyllaea* DC., Prodr. 5:
641. 1836.

Gnaphalopsis DC., Prodr. 7: 258. 1858.

Lowellia A. Gray, Mem. Amer. Acad. Arts, ser. 2.
4: 89. 1849.

Hymenatherum Cass. sect. *Heterochromea* A.

Gray, Synop. Fl. N. Amer. 1(2): 453. 1884.

Dyssodia Cav. sect. *Aurantiacae* Strother, Univ.
Calif. Publ. Bot. 48: 64. 1969.

Annual or perennial herbs or subshrubs less than 30 cm. Stem erect to decumbent. Leaves opposite or alternate, blades often pinnatisect with linear-filiform lobes, margin entire or toothed. Calyculus 0 or 1-8 deltate to subulate bracteoles,

usually much shorter than phyllaries. Involucres campanulate to obconic, 2-7 mm in diam. Phyllaries persistent, 8-13 (-22), often bear glands. Receptacles naked or nearly so. Ray florets fertile, usually 5, 8, 13 or 21, golden to pale yellow, rarely white. Disc florets, 16 to more than 100, bisexual, fertile, lobes short, deltate. Achenes stoutly to narrowly obconic, glabrous or sparsely strigillose. Pappi persistent, coroniform or of 10-20 distinct scales. chromosome number $x=8$ (Strother 1986, 2006).

Thirteen species distributed in the United States, Mexico (Strother 2006).

Thymophylla tenuiloba (de Candolle) Small var. *tenuiloba*, Fl. S.E. U.S. 1295, 1341. 1903. 金毛菊 (Figure 1, 2)

Hymenatherum tenuilobum de Candolle in A. P. de Candolle and A. L. P. P. de Candolle, Prodr. 5: 462. 1836.

Dyssodia tenuiloba (de Candolle) B. L. Robinson in Proc. Amer. Acad. Arts 49 (8): 508. 1913.

Annual herbs. Stem ascending to erect, ca. 30 cm. The whole plant with orange oil glands, fragrant. Leaves simple, alternate, pectinate, 1-2 cm long, 0.8-1.5 cm wide. Head terminal, 2-2.5 cm in diam., peduncle 3-5 cm, bract numerous, lanceolate, 2-4 mm long, ca. 1 mm wide. Involucres single layer, obconical, 8-10 mm in diam., glabrous. Ray florets pistillate, yellow, corolla 5-8 mm long, 2-4 mm wide, style bifid. Disk florets bisexual, 8-10 mm long, yellow, ovary dark brown, 3-4 mm long, pubescent. Achene dark brown, 3-5 mm long, pubescent.

Native to the United States (Texas) and north Mexico, introduced to West Indies, Asia and Africa (Strother 2006).

Specimen examined: Taichung City, Nantun District, Kongyehchu 19 Rd., 24 May 2013, *Chao 2904* (TCF), Shalu District, 11 Mar. 2014, *C. M.*

Wang 15948 (TNM). Changhua County, Shengkang District, 4 Mar. 2014, *C. M. Wang 15940* (TNM). Yunlin County, Huwei town, 10 Mar. 2014, *C. M. Wang & C. Y. Li 15925* (TNM). Tainan City, Matou District, 11 Mar. 2013, *C. M. Wang 15330* (TNM). Kaohsiung City, Hunei District, 19 Mar. 2011, *C. M. Wang & C. Y. Li 14257* (TNM).

Discussion

Thymophylla tenuiloba was divided into four varieties, as var. *tenuiloba*, var. *treculii* (A. Gray) Strother, var. *texana* (Cory) Strother and var. *wrightii* (A. Gray) Strother (Strother 1986). According to the Strother's (1986) treatment, the taxon naturalized to Taiwan is var. *tenuiloba*.

Thymophylla tenuiloba var. *tenuiloba* is naturalized in low altitude areas in Taiwan, often found in disturbed open land (Figure 3). The species was introduced as an ornamental plant, usually cultivated in urban parks or private gardens; seeds are easily dispersed by wind and can easily escape from cultivation. This species was also found in Anguilla (West Indies) (Varnham 2006). Although the distribution of this species still seems sporadic, considered the wide cultivation and seed dispersal, the population dynamics should be noted in the future.

In published records, there were five species of naturalized Tageteae found in Taiwan, i.e. *Flaveria bidentis* (L.) Kuntze (Tseng et al. 2008), *F. linearis* Lag. (Tseng et al. 2012), *Pectis prostrata* Cav. (Jung et al. 2011), *Tagetes erecta* L. and *T. minuta* L. (Wang & Chen 2006). Except *T. minuta*, other species including the new one described here, were all found in low altitude areas, at either waste land, roadside, riverbank or near seashore. Among them, *Thymophylla tenuiloba* and *Tagetes erecta* were introduced as ornamental crops, *T. minuta* was once detected

from import maize and barley from U. S. and Australia (Hsu et al. 2004), others lacking a traceable introduction record, these species may be contained within other imported agricultural or ornamental seeds crop or fertilizer. Some species of *Tagetes* had been recorded as naturalized species in other countries, e.g. *T. paluta* L. and *T. tenuiflora* Cav. (Webb 1987), and may be therefore needs more notice in the future is warranted.

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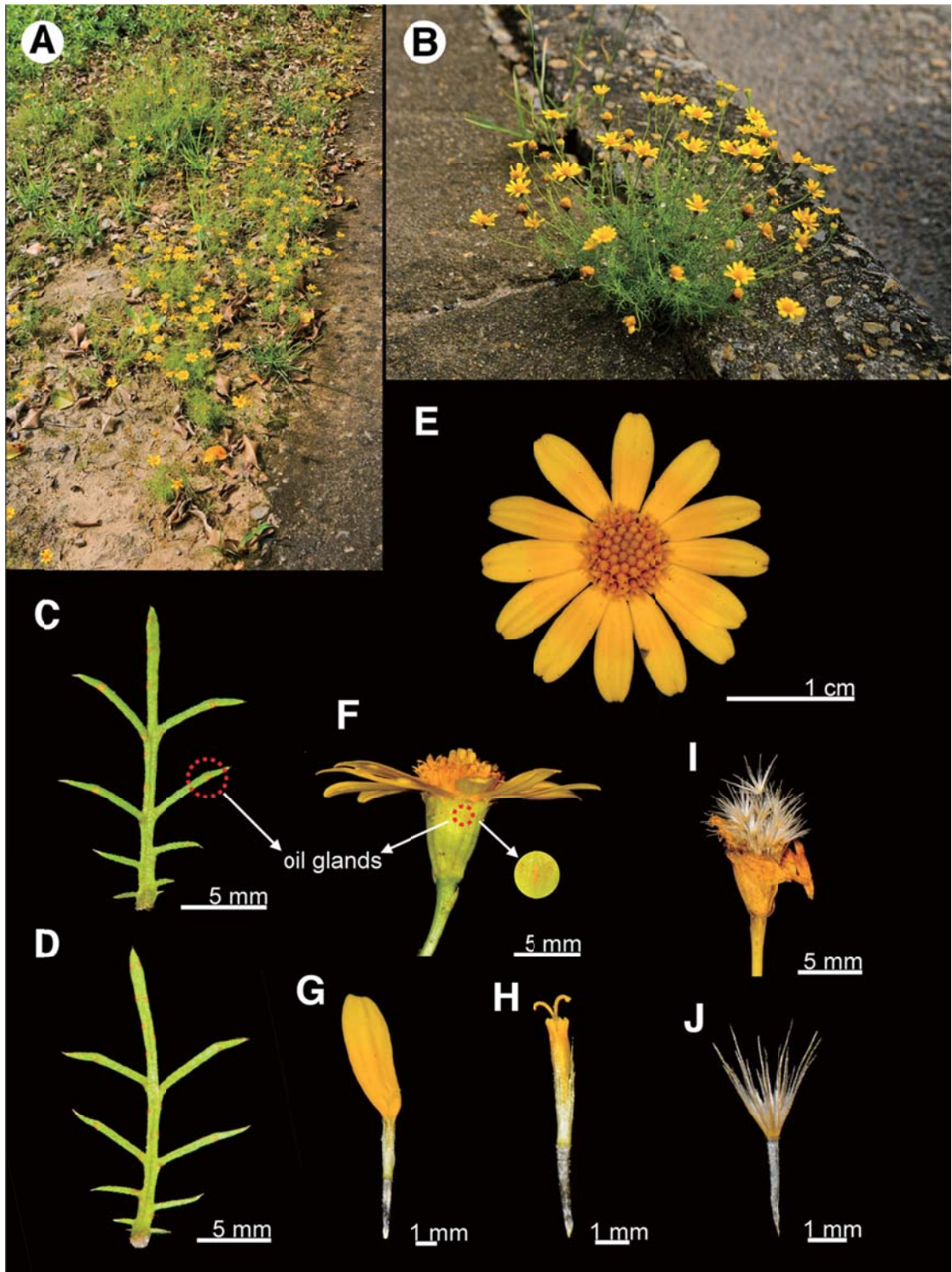


Fig. 1. *Thymophylla tenuiloba* var. *tenuiloba*. A. habitat B. habit C. leaf adaxial surface D. leaf abaxial surface E. head F. head side view, show phyllaries G. ray floret H. disc floret I. inflorescences J. achene

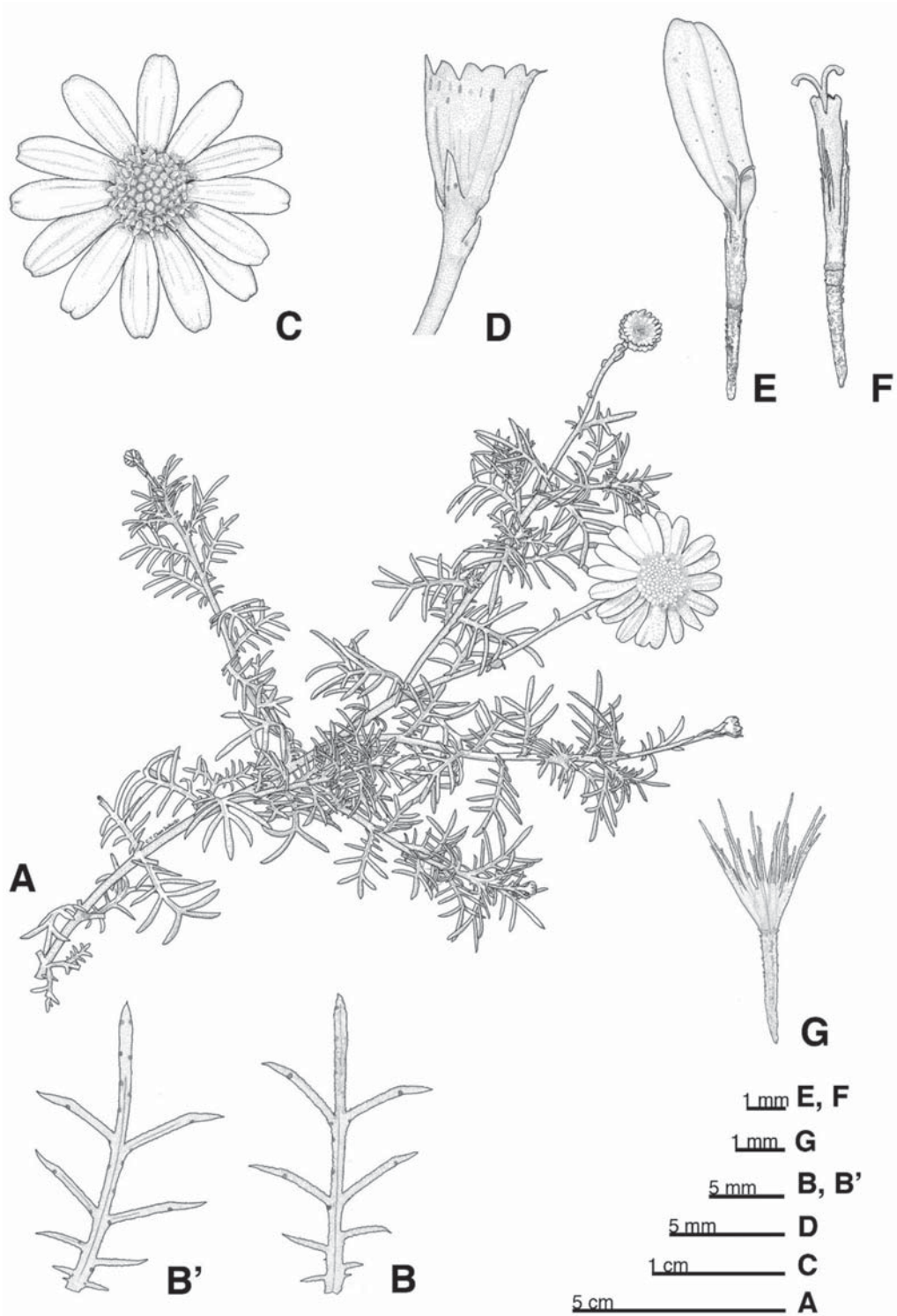


Fig. 2. *Thymophylla tenuiloba* var. *tenuiloba*. A. habit B, B'. leaf adaxial and abaxial surface C. head D. phyllaries E. ray floret F. disk floret G. achene

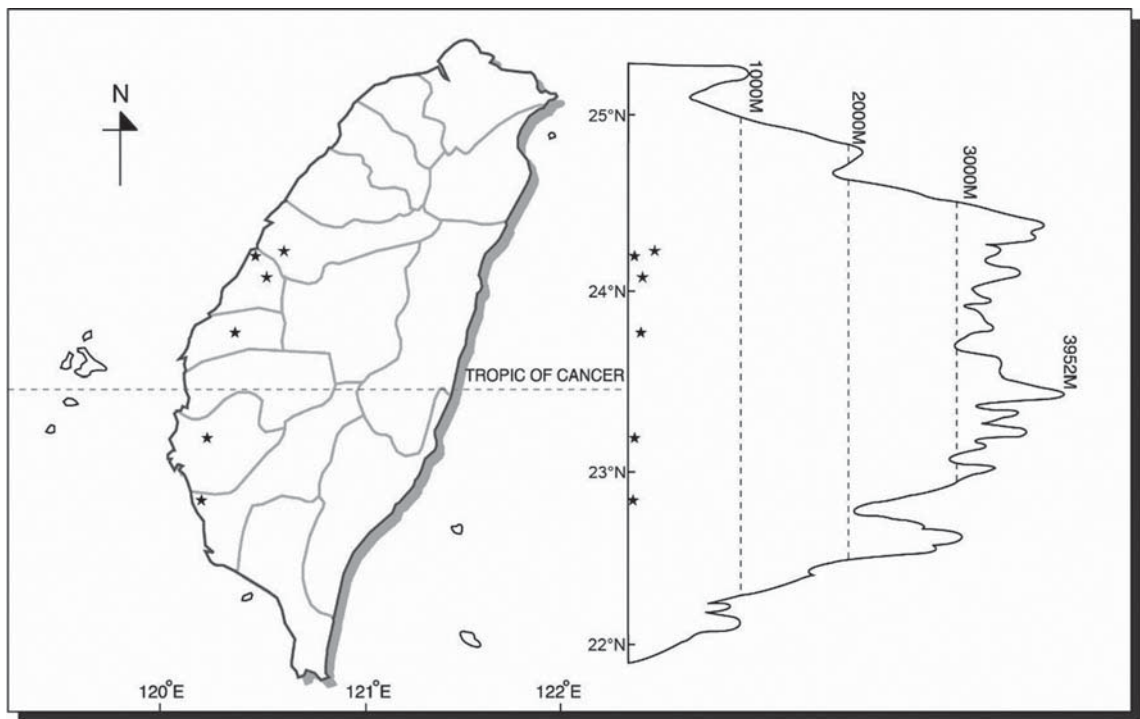


Fig. 3. Distribution map of *Thymophylla tenuiloba* var. *tenuiloba*.

