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NOTE

A Newly Naturalized Species in Taiwan: *Pilea nummulariifolia* (Swartz) Weddell (Urticaceae)

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ABSTRACT: This report is regarding the naturalization status of an introduced ornamental species, *Pilea nummulariifolia* (Swartz) Weddell. *Pilea nummulariifolia*, a member of Urticaceae, is originated from tropical America, and has been widely cultivated through out the island of Taiwan. This species can be identified by its rounded leaves with toothed edges and long ascending or procumbent stem with densely hairs. This paper describes this newly naturalized species and provides line drawing and photograph for identification.

KEY WORD: Urticaceae, *Pilea nummulariifolia*, Naturalized, Taiwan.

INTRODUCTION

Naturalization is the most important milestone of biological invasions (Richardson et al., 2000); therefore, naturalized species are often considered as potential invaders and employed for relevant ecological approaches on plant invasions. As more and more attentions are paid to plant invasions in Taiwan, reports of newly naturalized species have been common and easy to access. These reports have become the essential sources of local ecological studies on plant invasions (Wu et al., 2003, 2004 and 2005).

In our recently field collection, a weedy species, *Pilea nummulariifolia* (Swartz) Weddell (Figs. 1 & 2), was found in the eastern Taiwan (Fig. 3). This species can be identified by its rounded leaves with toothed edges and long ascending or procumbent stem with densely hairs.

As an ornamental, this species was introduced from Tropical Americas and wildly cultivated in Taiwan. Its native distribution ranges from Caribbean region (Adams, 1972; Liogier, 1984; Acevedo-Rodríguez and Angell, 1996) to Guatemala (Standley and Steyermark, 1952), Panama (Nevling, 1960), and Peru (Brako and Zarucchi, 1993).

Since *Pilea nummulariifolia* survived in abandoned fields and reproduced without human efforts, we defined this species as a naturalized species.

In Asia, this is the first report of its naturalization. This paper describes this newly naturalized species and provides line drawing and photograph for identification.

TAXONOMIC TREATMENT

Pilea nummulariifolia (Swartz) Weddell, Ann. Sci. Nat. Bot., ser. 3. 18: 225. 1852. Figs. 1 & 2

Urtica nummulariifolia Swartz, Kongl. Vetenskaps Academiens Nya Handlingar 8: 63-64, pl. 1, f. 2. 1787.

Perennial herbs, ascending or procumbent; stem terete, densely hirsute. Leaves opposite, equal or slightly unequal in pairs, membranous to chartaceous, orbicular to oval, 3.5-5 cm long, apex obtuse, base cordate, margins crenate, 3-nerved, with hirsute along nerves beneath; petiole 0.6-2 cm long, densely hirsute; stipules 2, free, membranous, orbicular, 0.5-0.6 cm long, margins hirsute. Male inflorescences axillary, dense and head-like; female inflorescences axillary, lax and paniculately branched; flowers monoecious; male flowers: perianth 4-partite, segments concave, hirsute on the tips; stamens 4; pedicels hirsute on the upper part, ca. 0.7 cm long; female flowers: perianth 3-partite, segment small, unequal, ovary laterally compressed, oblong; stigma penicillate-capitate; achene ovate, compressed.

Specimen examined: Hualien county. Chung-kwong community, elev. ca. 176 m, on the abandoned field and fallow field, 22 Aug, 2008, *Tsai 526* (TAI).

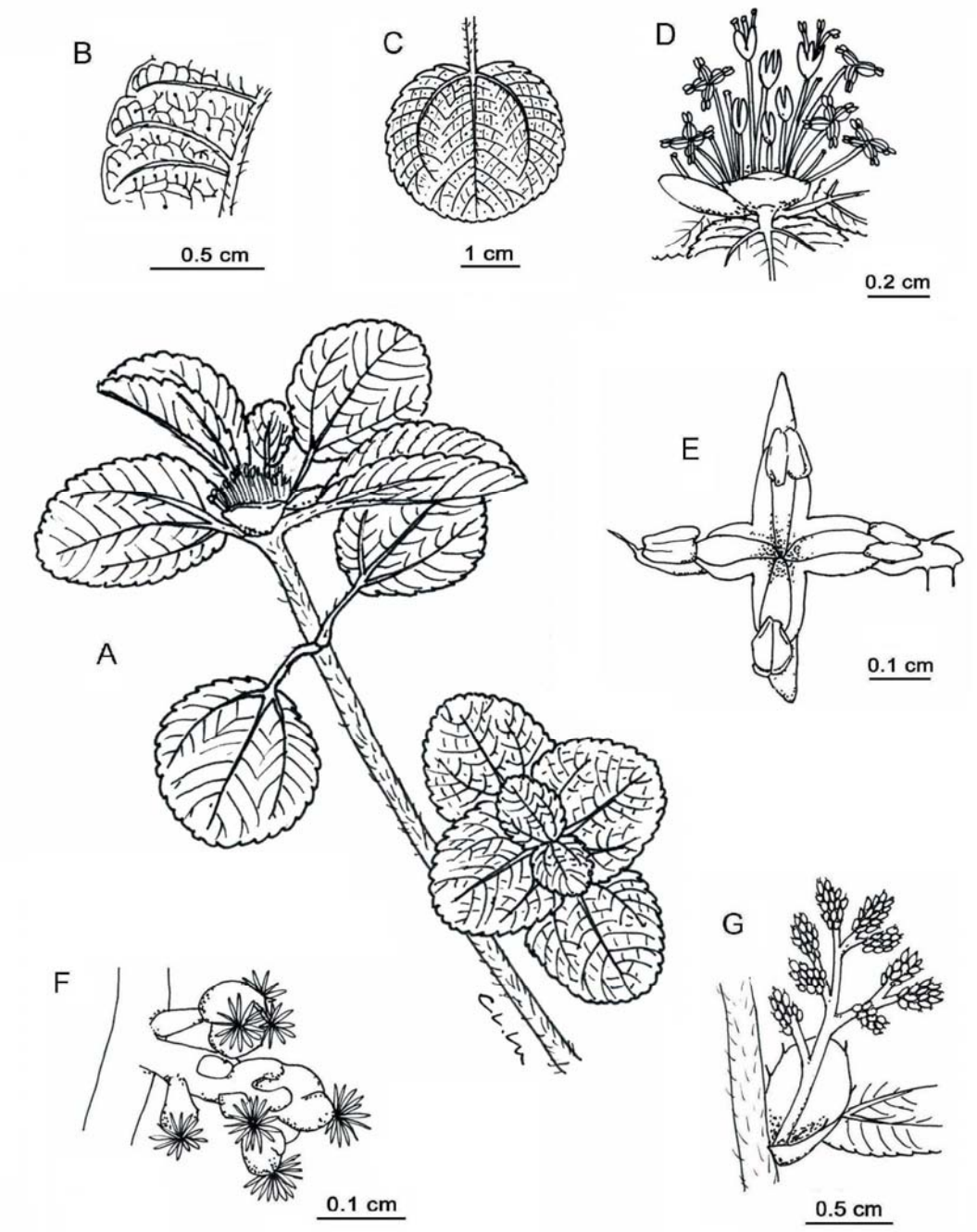

Fig. 1. *Pilea nummulariifolia* (Swartz) Weddell. A: Habit. B: Lateral vein. C: Leaf (abaxial view). D: Male inflorescence. E: Male flower. F: Female flowers. G: Female inflorescence.

Note: This species was found in open abandoned fields at Chung-kwong community in Hualien (location: 23°53’38.87”N, 121°30’05.10”E; altitude: 176m) adjacent to betel nut plantations (*Areca catechu* L.). Local plant communities are composited of patches of *Pilea nummularifolia* monocultures and other weeds, including *Ageratum conyzoides* L., *Ageratum houstonianum* Mill., *Cuphea carthagenensis* (Jacq.) Macbrids, *Eleusine coracana* (L.) Gaertn., *Pueraria lobata* (Willd.) Ohwi ssp. *thomsonii* (Benth.) Ohashi & Tateishi, *Sesbania cannabiana* (Retz.) Poir, and *Sida cordifolia* L.

Fig. 2. *Pilea nummulariifolia* (Swartz) Weddell. A: Habit of naturalized population. B: Female inflorescence.

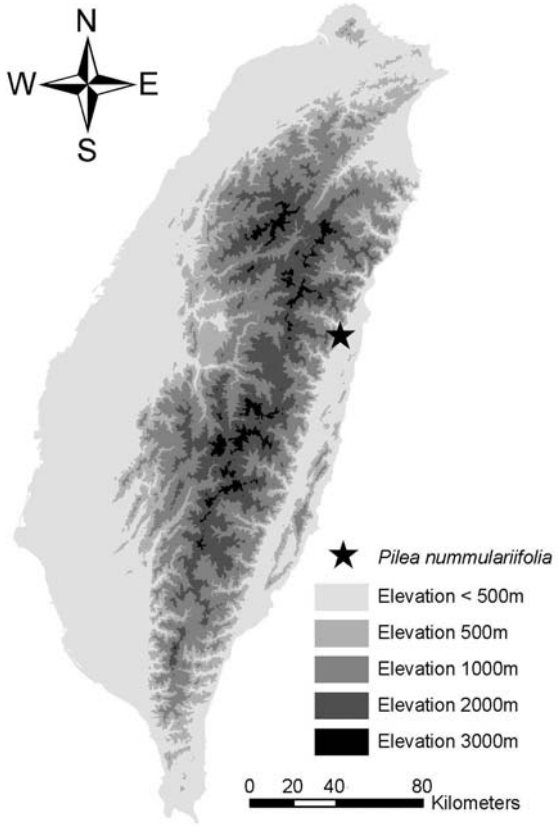

Fig. 3. Distribution of naturalized *Pilea nummulariifolia* (Swartz) Weddell population.

LITERATURE CITED

Acevedo-Rodríguez, P. and B. Angell. 1996. Flora of St. John, U.S. Virgin Islands. Mem. New York Bot. Gard. **78**: 1-581.

Adams, C. D. 1972. Flowering Plants of Jamaica. University of the West Indies Press, Mona, Jamaica. 848pp.

Brako, L. and J. L. Zarucchi. 1993. Catalogue of the flowering plants and gymnosperms of Peru. Monogr. Syst. Bot. Missouri Bot. Gard. **45**: 1-1286.

Liogier, H. A. 1984. Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 1: Spermatophyta: Casuarinaceae to Connaraceae. University of Puerto Rico Press, Rio Piedras, USA. p. 77.

Standley, P. C. and J. A. Steyermark. 1952. Flora of Guatemala. Vol. 24. Part III: Commelinaceae to Urticaceae. Chicago Natural History Museum Press, Chicago, USA. p. 411.

Nevling, L. I. 1960. Urticaceae. In: Woodson, R. E. and R. W. Schery (eds.), Flora of Panama. Part IV. Fascicle II. Missouri Bot. Gard. Press, St. Louis, USA. p. 185.

Richardson, D. M., P. Pyšek, M. Rejmánek, M. G. Barbour, F. D. Panetta and C. J. West. 2000. Naturalization and invasion of alien plants: concepts and definitions. Diversity and Distributions **6**: 93-107.

Wu, S.-H., S.-M. Chaw and M. Rejmánek. 2003. Naturalized Fabacease (Leguminosae) species in Taiwan: the first approximation. Botanical Bulletin of Academia Sinica **44**: 59-66.

Wu, S. H., M. Rejmánek, E. Grotkopp and J. M. Ditomaso. 2005. Herbarium records, actual distribution, and critical attributes of invasive plants: genus *Crotalaria* in Taiwan. Taxon **55**: 133-138.

Wu, S. H., M. Rejmánek, C. H. Hsieh and S. M. Chaw. 2004. Plant infvasions in Taiwan: Insights from the flora of casual and naturalized alien species. Diversity and Distribution **10**: 349-362.

臺灣新歸化植物：古錢冷水花 (蕁麻科)

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摘要: 本文記錄一引進臺灣作為園藝作物的歸化現狀。古錢冷水花 (*Pilea nummulariifolia* (Swartz) Weddell) 為原產熱帶美洲之蕁麻科植物，目前全島皆有種植情形，引進年份不詳。本文依照國際對於歸化植物之定義，檢視該物種在標本採集地點之分布及生長狀況，完全未經由人為協助而自立繁殖、開花結果，進而判定其為新歸化之物種。古錢冷水花 (*Pilea nummulariifolia*) 以具圓齒的圓形葉和密生毛的長匍伏莖，與其他同屬植物可以區分。本文提供形態描述、生育地描述及手繪圖作為鑑定之用。

關鍵詞：蕁麻科、古錢冷水花、歸化、臺灣。