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NOTE

Digera muricata (L.)Mart. (Amaranthaceae), a Newly Naturalized Genus and Species in Taiwan

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ABSTRACT: *Digera muricata* (L.) Mart. was native to northeastern and eastern tropical Africa and Madagascar, also widespread in southern Asia from tropical Arabia and the Yemen to Afghanistan, India, Malaysia and Indonesia. Recently, this species was found as an alien species in central Taiwan. This is a new record of the genus and species of the Amaranthaceae in Taiwan. This report gives taxonomic descriptions, illustrations, and distribution maps. Photographs are also provided to help with identification.

KEY WORDS: Amaranthaceae, *Digera muricata*, newly recorded genus, Taiwan.

INTRODUCTION

The Amaranthaceae, a pantropical family with 69 genera and over 1000 species, is mainly distributed in tropical regions, with some genera or species reaching warmer temperate regions (Townsend, 1979). In Taiwan, there are nine genera with 19 species, including some introduced ones (Liu and Kao, 1996). Boufford et al. (2003) showed that many Amaranthaceae species were reported as newly recorded or naturalized in Taiwan (Hwang et al., 2004; Chen and Wu, 2007; Chen, 2008), including the recently recorded genus *Pupalia* (Yang and Chen, 2006). To the present, 16 naturalized species of Amaranthaceae were recorded in Taiwan (Wu et al., 2010). This paper describes a genus and species of the Amaranthaceae new to Taiwan. In the following taxonomic treatment, the description of the species is the same as that of the genus because this is a monotypic genus.

TAXONOMIC TREATMENT

Digera Forssk., Fl. Aeg.-Arab. 65. 1775. Boiss., Fl. Or. 4: 994. 1879; Hook. f, Fl. Br. Ind. 4: 717. 1885; Schinz in E. and P., Pflanzenfam. ed. 2, 16c: 40. 1934.

Digera muricata (L.) Mart. Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 13:285. 1826 瘤果莧 Figs. 1, 2

Achyranthes muricata L. Sp. pl. 2:295. 1762

Annual herb, simple or with ascending branches from near base, 20–60 cm tall; stem glabrous, with alternate branches and leaves. Leaves entire deltoid-ovate, blade 3–7 cm long, 1.8–3.5 cm wide, acute or acuminate at apex, cuneate to subtruncate at base, glabrous or petiole and principal veins of lower surface of leaf hairy; petiole of upper leaves 1.8–4 cm long, of lower leaves up to ca. 5 cm. Inflorescence dense axillary racemes, 10–25 cm long, with 5–10 cm long pedunculate, each subtending a very short pedunculate partial inflorescence of 3 flowers, only central flower fertile, the other 2 infertile; bracts persistent, deltoid-lanceolate, acuminate, 1–2.5 mm; fertile flower glabrous, perianths 4 or 5, pink, membranous, outer perianth segments 3–4.5 mm long, 2 or 3 inner segments slightly smaller; stamens 4 or 5, free, filaments filiform, stigmas 2, divergent; ovary with a single ovule lateral on a curved funicle; infertile flowers appressed, modified into accrescent, antler-shaped scales, 1-bracteolate, bracteoles similar in form to bract. Fruit a subglobose, hard, indehiscent nutlet enclosed by persistent perianth and falling together with sterile flowers and bracteoles, slightly compressed, 2–2.5 mm in diameter, bluntly keeled along each side, surmounted by a thick rim, firm processes furnished throughout with verrucae or ridges, style persistent.

A monotypic genus.

Specimens examined: TAIWAN, Yunlin Co.: Mailiao Township: Maifeng Village, Oct. 17, 2011, *C.M. Wang 14467* (TNM), same locality, Oct. 20, 2011, *C.M. Wang 14502* (TNM); Mailiao Township: Yangcuoliao, Nov. 7, 2011, *C.M. Wang 14555* (TNM), same locality, Jan. 11, 2012, *C.M. Wang 14608* (TNM); Mailiao Township: Chunliao, Jan. 11, 2012, *C.M. Wang 14615* (TNM); Mailiao Township: Hsinghua Village, Jan. 11, 2012, *C.M. Wang 14619* (TNM); Taihsi Township: Piencuo Village, April 13, 2012, *C.H. Chen 10865* (TNM); same locality, Jan. 14, 2012, *C.M. Wang 14628* (TNM).

Distribution and Notes: According to the internet

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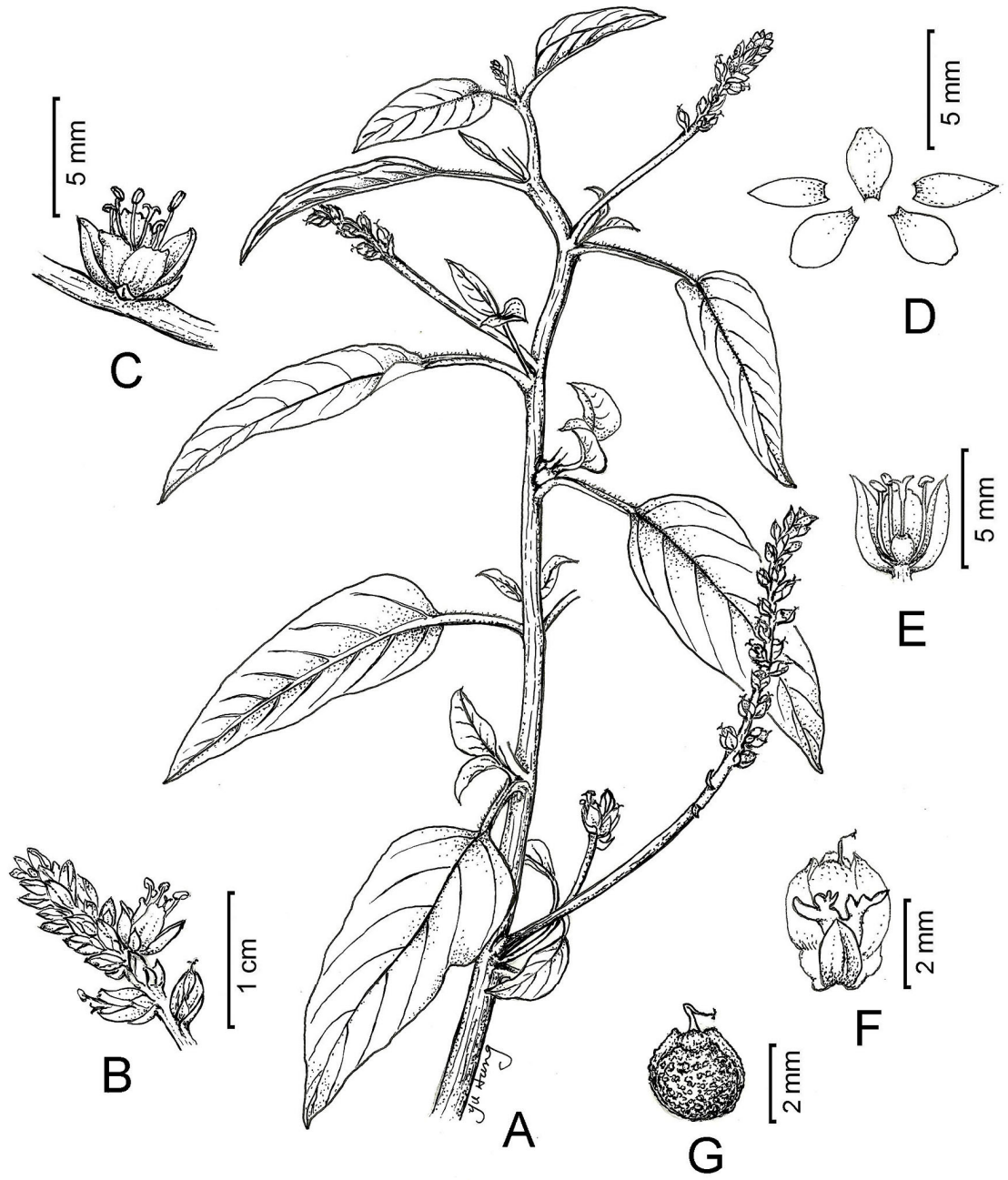


Fig. 1. Illustration of *Digera muricata* (L.) Mart.. A: Habit. B: Terminal spike. C: Flower. D: Perianth segments. E: Flower (side view). F: Immature fruit, infertile flower, and bracteolate. G: Fruit.

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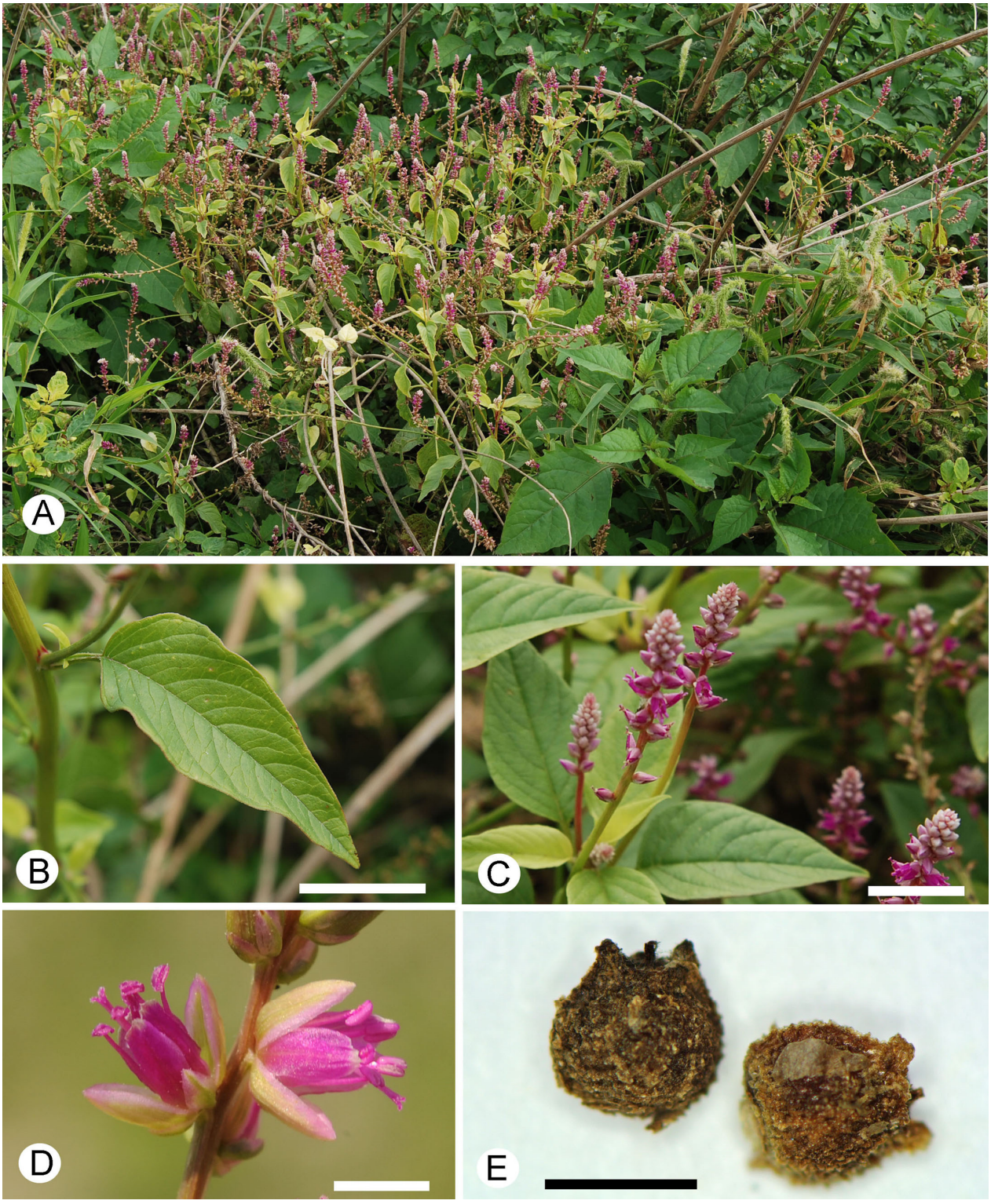


Fig. 2. Photographs of *Digera muricata* (L.) Mart.. A: Habit and habitate. B: Leaf. C: Inflorescence. D: Flowers. E: Fruits. Scar bars: B and C = 2 cm, D and E = 2 mm.

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resources from United States Department of Agriculture (USDA: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?423382) and the Flora of Pakistan (http://www.efloras. org/florataxon.aspx?flora_id=5&taxon_id=250064265), *Digera muricata* (L.) Mart. is widespread in southern Asia from tropical Arabia and Yemen to Afghanistan, India, Malaysia, and Indonesia, as well as in northeastern and eastern tropical Africa and Madagascar. The occurrence of the species is usually relative to gram crop and human activity in Pakistan (Sultan and Nasir, 2003), we consider that this species was likely introduced to Taiwan by agricultural activities. Several populations were recently found in a short time in central Taiwan (Fig. 3), and this species has the potential to be an invasive plant (Sekar, 2012).

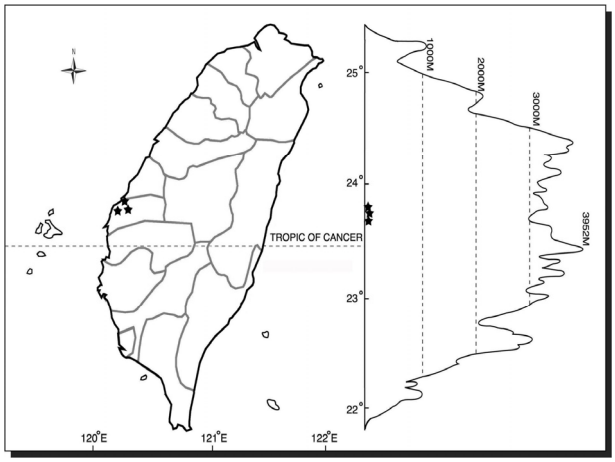


Fig. 3. Distribution map of *Digera muricata* (stars) in Taiwan.

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臺灣新歸化莧科新紀錄屬植物－瘤果莧

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摘要：本文記錄一種臺灣新歸化的莧科新紀錄屬植物－瘤果莧（*Digera muricata* (L.) Mart.），原產於非洲和亞洲南部地區，最近被發現歸化於臺灣中部低海拔區。本文描述其形態特徵、地理分佈及生育地環境，並提供彩色圖片與線畫圖以資辨識。

關鍵詞：莧科、瘤果莧、新紀錄屬、臺灣。

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