

Mitracarpus hirtus (L.) DC. (Rubiaceae), a Newly Naturalized Plant in Taiwan

臺灣新歸化茜草科植物—蓋裂果

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Abstract

Mitracarpus hirtus (L.) DC. (Rubiaceae), native to the tropical Americas, has recently been found in low elevation, central Taiwan. This represents a newly recorded genus and naturalized species in Taiwan. A detailed morphology description, line-drawings, photographs and geographic distribution of the plant are provided in this paper to aid identification.

摘要

本文報導一種原產於熱帶美洲之茜草科植物—蓋裂果 (*Mitracarpus hirtus* (L.) DC.)，最近發現已歸化於臺灣中部低海拔地區。其所屬之蓋裂果屬(*Mitracarpus* Zucc.)亦為臺灣新紀錄屬，本文提供形態特徵描述、地理分布及生育地環境，並提供彩色圖片與手繪圖以資辨識。

Key words : *Mitracarpus hirtus*, naturalized plant, Rubiaceae, Taiwan.

關鍵詞： 蓋裂果、歸化植物、茜草科、臺灣

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Introduction

In recent decades, frequent global trade activities, transportation, and travels have aided the distribution of organisms or propagules, and thus the process of species dispersal. Plants could travel beyond natural barriers and colonize a different environment more than ever before. In Taiwan, hundreds of plants have been introduced (Wu *et al.* 2004), some of which have become newly recorded genus, e.g. *Clidemia* D. Don (Yang, 2001), *Cyphomandra* Sendt. (Tseng *et al.* 2008a), *Flaveria* Juss. (Tseng *et al.* 2000), *Pectis* L. (Jung *et al.* 2011), *Rivina* L. (Tseng *et al.* 2008b). In this study we report a newly recorded species, *Mitracarpus hirtus*, as well as a newly recorded genus, *Mitracarpus* Zucc. ex Schult. & Schult. f., in Taiwan. Also provided is a brief description of the genus and a morphology description, line drawing illustrations, habitat and morphology photographs of the species.

Taxonomy Treatment

Mitracarpus Zucc. ex Schult. & Schult. f., Syst. Veg., Mant. 3: 210, 399. 1827.

蓋裂果屬

Annual or perennial herbs, or sometimes shrubs. Young stems 4-angled. Leaves opposite and decussate, subsessile to short-petiolate. Inflorescences terminal or axillary, glomerulate, with densely crowded flowers, the glomerules subtended by bracts. Flowers bisexual and monomorphic, hypanthium turbinate to subglobose. Calyx persistent, 4-lobed; lobes opposite, two longer and two shorter. Corolla hypocrateriform, 4-lobes, white, tube usually with a ring of moniliform hairs within. Stamens 4; style filiform, bifid. Ovary 2-locular. Fruit capsular with transversal dehiscence. Seeds planoconvex, with square-shaped or X-shaped depression on the ventral face; depressions covered by strophiole.

About 30 species are distributed in Mexico, Central America, West Indies, South America, and are introduced to Africa, Madagascar, and Asia (Andersson 1992, Taylor and Steyermark 2004).

Mitracarpus hirtus (L.) DC., Prodr. 4: 572.1830.

Basionym: *Spermacoce hirta* L., Sp. Pl., ed. 2, 1: 148. 1762. TYPE: *Browne s.n.* s.d., Herb.

Linn. No. 125.8 (Lectotype: LINN photo!).

蓋裂果 Fig. 1-3

Annual herbs 30-50 cm high, stems spreading-ascending, simple or sparingly branched; branches subterete or 4-angled, sparsely hirsute to villous. Leaves sessile; blade thinly papery, elliptic-oblong or lanceolate, 3–5 cm long, 0.7–1.5 cm wide, adaxially scaberulous and sparsely villosulous or pilosulous, abaxially villous or pilose, base acute to obtuse or rounded, apex acute; secondary veins 3– 6 pairs; stipule sheaths 2–4 mm long, villosulous or pilosulous to glabrescent, with 6–9 linear setae, 2–4 mm long. Flowers small, very dense. Calyx sparsely to densely puberulent or strigillose; ovary portion subglobose to ellipsoid, ca. 0.5 mm long; limb deeply lobed; lobes unequal, triangular to lanceolate, 2 larger 1.8–2 mm long, 2 smaller 0.8–1.2 mm long, ciliate. Corolla white, funnellform, outside puberulent to glabrous; tube 1.3–1.8 mm long, glabrous inside; lobes triangular to ovate, 0.5–1 mm long. Capsules subglobose, ca. 1.5 mm in diam., scaberulous or sparsely puberulent; seeds dark brown, oblate-suboblong, ca. 1 mm long, with a X-shaped sulcus on the adaxial face. Chromosome number: $n=42$ (Walter 1962).

Specimen examined: TAIWAN: Taichung City, Longjing Dist. (龍井區), Nanliao Village (南寮里), Dadushan, elev. ca. 213 m, 24°10'18.54" N, 120°33'25.50" E, 17 Jan. 2013, *Lin C.J.* 750 (TAIE).

Distribution and phenology: *Mitracarpus hirtus* is native to the Antilles and Central, North, and South America; and is naturalized in tropical Africa, Asia, Australia, and Pacific islands (Chen

et al. 2011; Nicolson 1977; Fosberg *et al.* 1993). In Taiwan, this species is found in open areas. In the Dadu tableland in the western part of central Taiwan (Fig. 3), the species is found along roadsides and mixed with low grasses and weeds. Field observations have found that the populations in Taiwan are stable and have even somewhat expanded since 2011. The species flower all year round, but principally from April to November.

Note: The morphological character of this genus resembles that of *Spermacoce* L. in Taiwan, though it is characterized by circumscissile fruits and seeds with a X-shaped sulcus on the adaxial face (Taylor and Steyermark 2004).

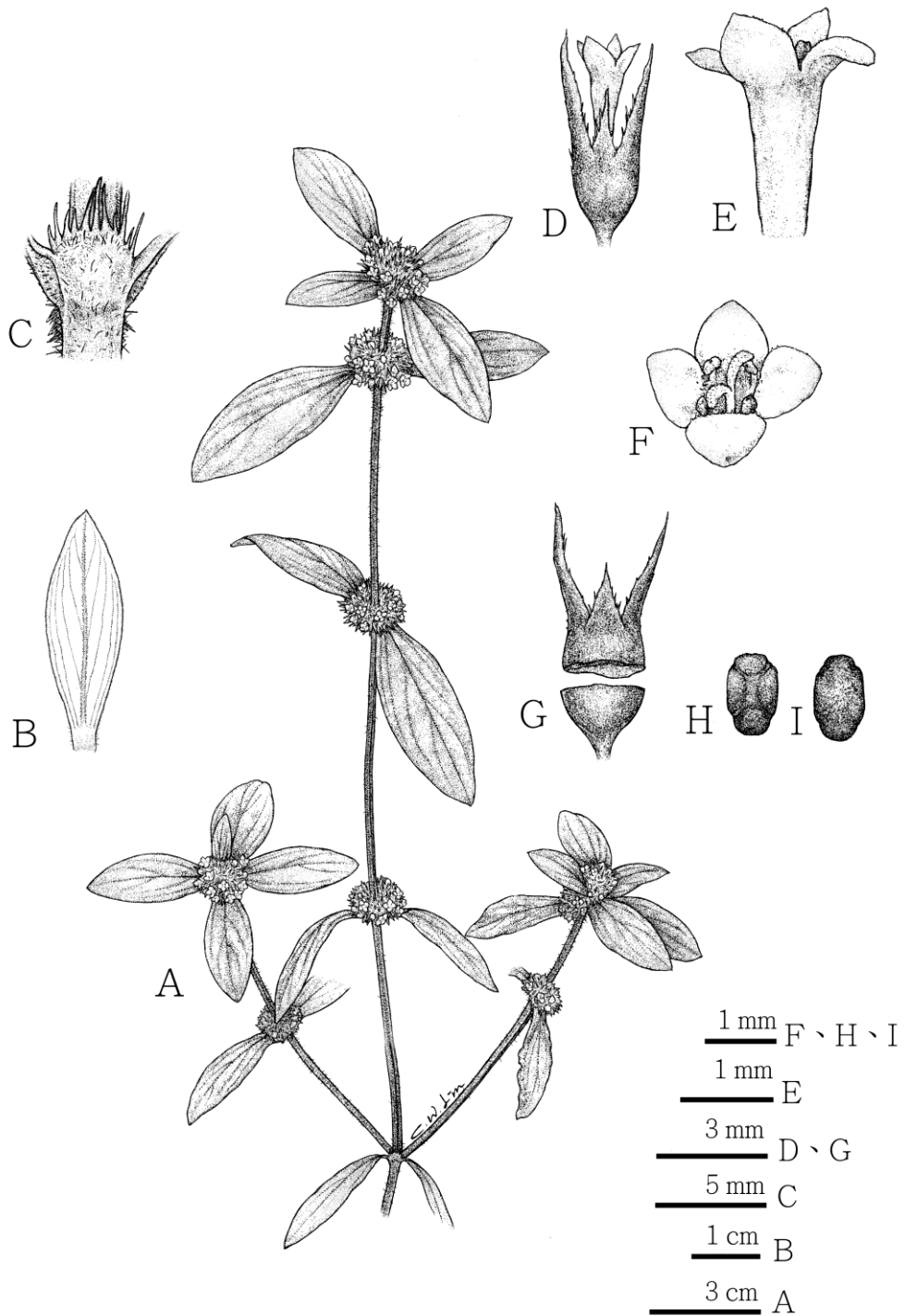


Fig. 1. *Mitracarpus hirtus* (L.) DC. A: habit; B: abaxial view of leaf; C: stipule; D: flower; E: corolla; F: showing the stigma and style; G: mature fruit; H: adaxial view of seed; I: abaxial view of seed.

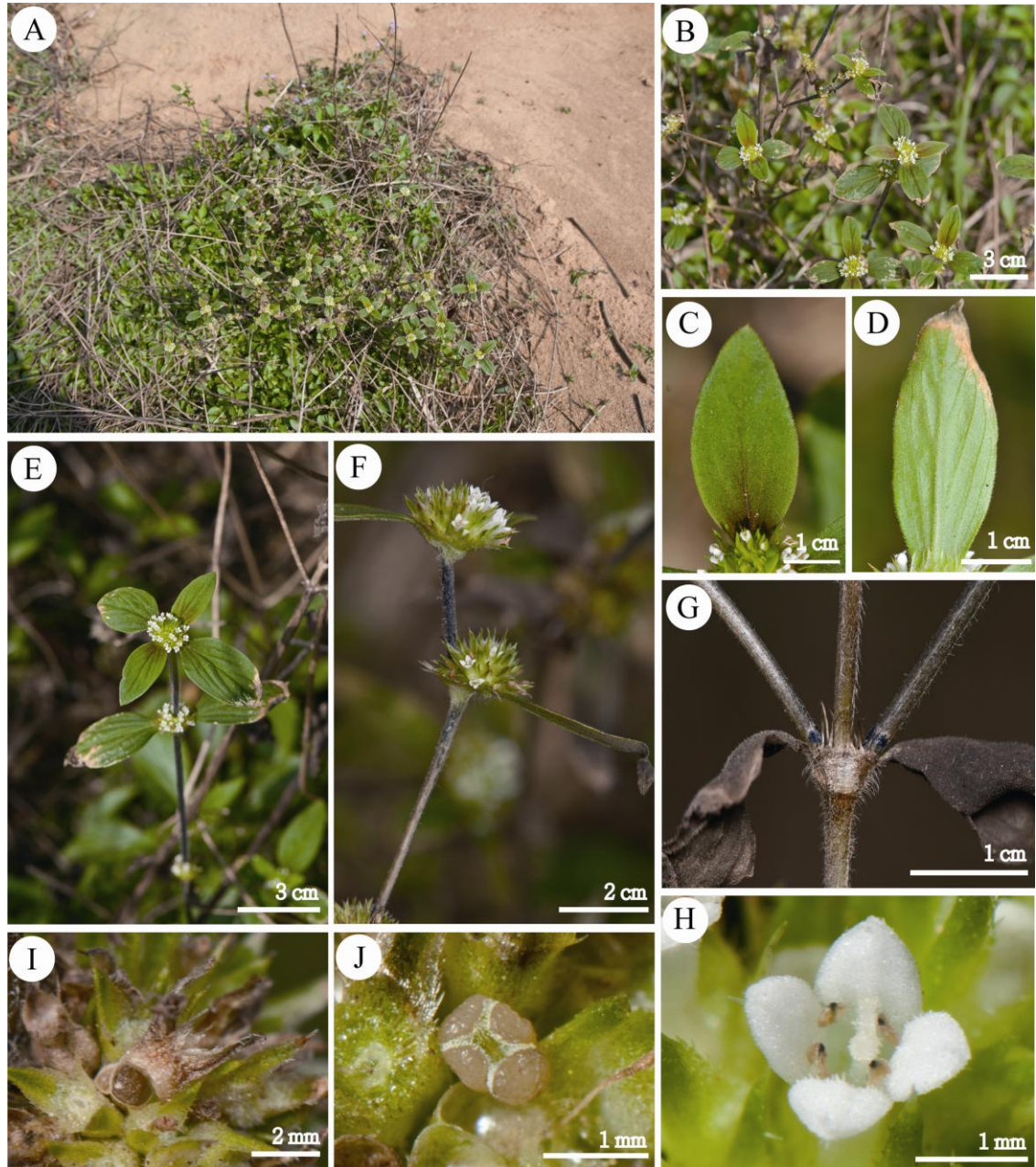


Fig. 2. *Mitracarpus hirtus* (L.) DC. A: habitat (On the roadside); B: habit; C: adaxial view of leaf; D: abaxial view of leaf; E: flowering shoot; F: stem; G: stipule; H: flower; I: mature fruit, showing the circumscissile dehiscence; J: adaxial view of seed.

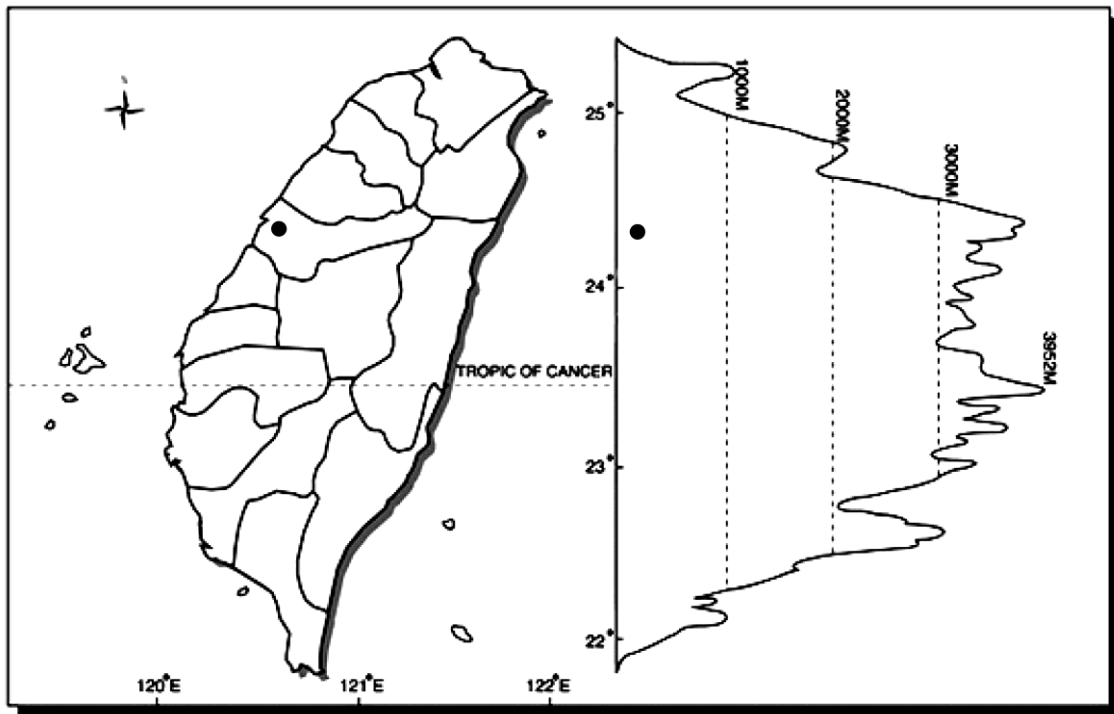


Fig. 3. Distribution map of *Mitracarpus hirtus* (L.) DC. in Taiwan.

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