

***Boerhavia erecta* L. (Nyctaginaceae), A New Adventive Plant in Taiwan**

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ABSTRACT: *Boerhavia erecta* L., a new adventive weed has recently been found growing along the Kaohsiung-Taichung railroad. It can be distinguished from *B. diffusa* L. by its ascending to erect habit, white to pink flowers and obconical glabrous fruit. The diagnostic key to species in Taiwan and the botanical description, along with a line-drawing illustration of the species, are given.

KEY WORDS: *Boerhavia erecta* L., Nyctaginaceae, Adventive plant.

INTRODUCTION

The genus *Boerhavia* L., one member of Nyctaginaceae, is represented about 20 species in almost all tropical and subtropical areas of the world (Fosberg, 1978; Bittrich and Kühn, 1993). In Taiwan, two species were previously reported for the genus. *Boerhavia diffusa* L. was the first species recorded by Forbes and Hemsley (1891). *Boerhavia crispa* L., was lately added by Matsumura and Hayata (1906). However, Yang and Lu (1996) regarded the specimens of the latter species as being misidentified of the former. *Boerhavia diffusa* is therefore the only species being regarded occurring in this island (Yang and Lu, 1996; Yang *et al.*, 1997). Plants of *B. diffusa* grow along coast in the southern part of Taiwan and adjacent islands (Liu, 1976; Yang and Lu, 1996).

At the beginning of December in 2003, while the third author made a field collection along old shipment railroad of Kaohsiung Port in order to find possible remains of mangrove trees, she found a herbaceous species similar to *B. diffusa* but different from it in having ascending to erect habit, pale-white lower surface of leaves and glabrous fruit. The specimens of the unknown species were then taken to compare with the species of the genus in the vicinities of Taiwan, and the results indicated that the species is *B. erecta* L. Originally, the species is native to tropical America, with common names of erect spiderling, spindlepod, erect boerhavia, and upright spiderling (Randall, 2002). In Asia, it is distributed in Guandong of mainland China (Lu, 1996), the Ryukyus (Shimabuku, 1997) and Singapore, S. Sumatra, Java, Lesser Sunda Is., New Guinea and the Pacific (Stemmerik, 1964).

In Taiwan, so far, plants of the species were found growing along railroad from Kaohsiung of the southern part to Taichung of the central part. It is possible that the species was, at first, neglectfully brought into Kaohsiung by cargo in recent years, and has been quickly spreading along railroad. The plants of the species grow in open areas with arid or sandy soil, revealing its status as a pioneer species. This weed species can be expected to occur along railroad of the lowland of the whole island in near future.

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Key to the species

1. Creeping herb; perianth purple; anthocarp club-shaped, top rounded, roundish in cross section, with glandular hairs *B. diffusa* L.
 1. Erect to ascending herb; perianth white to pink; anthocarp obconical, top truncate, star-shaped in cross section, without glandular hairs *B. erecta* L.

TREATMENT

***Boerhavia erecta* L.**, Sp. Pl. 3. 1753; Stemm. in Steenis, Fl. Males. Ser. 1, 6(3): 454. fig. 1(h).
 1964; Lu in Flora Reipublicae Popularis Sinicae 26: 12. fig. 2(8). 1996. Figs. 1-2



Fig. 1. Botanical line-drawing of *Boerhavia erecta* L. A: Habit. B: Node and hairs. C: Flowers. D: Stamen. E: Stigma. F: Anthocarp. G: Cross-section of anthocarp. H: Flower bud.

Annual herb, 5-60 cm tall, erect or decumbent at the very base, puberulous, especially in the upper part at the nodes of shoots. Leaves ovate, cordiform to elliptic, 1-3.5 cm by 0.8-2 cm, base truncate to rounded or cordate, apex acute, lower surface pale-white and occasionally with sunken red glands; petiole 1.5-3 cm long. Inflorescence axillary or/and terminal; flowers 2-7 in cymose panicles; peduncle 2-8 cm long. Flowers tubular-campanulate; pedicel 0.5-3 mm long, with 2-3 lanceolate bracteoles less than 1 mm in length. Perianth 1.5-2.5 mm long, with 5 faint ribs and a distinct constriction halfway, limb 1.5-2 mm long, white to pink. Stamens 2-3. Stigma peltate, entire. Anthocarp obconical, glabrous, 3 mm long, top truncate, with 5 ribs somewhat undulated, star-shaped in cross-section.

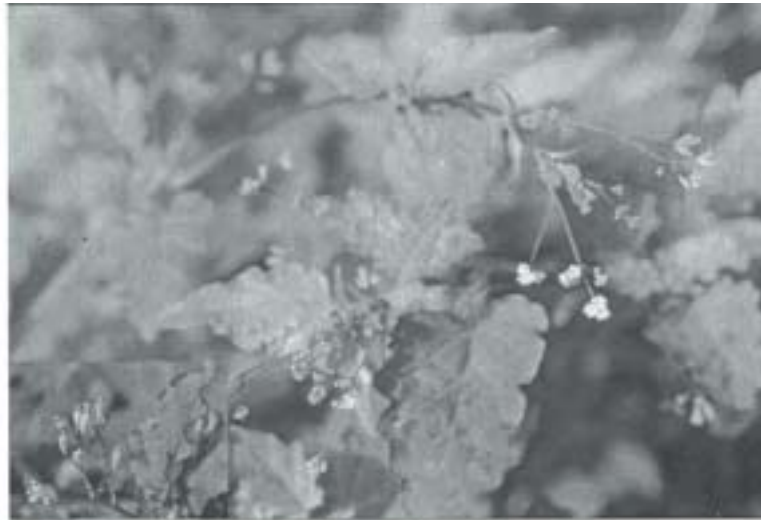


Fig. 2. Habitat of *Boerhavia erecta* L.; inserted: fruit.

Specimens examined: Kaohsiung City: Kaohsiung Port: C.-R. Sheue M101; Macadau Road: H.-L. Yi 525, 526, 527, 528; Tsoying: F.-S. Chou & C.-R. Sheue M102; Nantzu: F.-S. Chou & C.-R. Sheue M103. Chiayi County: Shuishang: C.-R. Sheue M104; Chiayi City: C.-R. Sheue M105. Changhua City: C.-R. Sheue M106. Taichung County: Chuifen: C.-R. Sheue M107 (SYSU).

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直立黃細心(紫茉莉科)－臺灣新的外來植物

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摘 要

作者於臺灣南部高雄市至臺中一帶沿鐵道的開濶地發現一種新的紫茉莉科外來植物－直立黃細心 (*Boerhavia erecta* L.)，與黃細心 (*Boerhavia diffusa* L.) 同屬。前者植株直立或基部斜傾，花序腋生或頂生，胞果光滑呈倒圓錐狀，可與後者區別。本文描述其形態特徵、生育環境，並提供植物繪圖及檢索表。

關鍵詞：直立黃細心、紫茉莉科、外來植物。

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