

***Euphorbia heterophylla* and *E. cyathophora* (Euphorbiaceae) in the Malay Peninsula**

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Abstract

The identities of two closely related species of *Euphorbia* naturalized in Southeast Asia from the New World tropics are considered. The name *Euphorbia heterophylla* L. has been consistently misapplied in the Malay Peninsula to plants of *Euphorbia cyathophora* Murray. True *Euphorbia heterophylla* is found as a garden escape and weed of waste ground, but is not as common in the Malay Peninsula as *E. cyathophora*. The differences between the two species are summarized.

Introduction

The botanical literature for the Malay Peninsula has generally referred to the euphorbia with red bracteal leaves and alternately arranged foliage leaves, that is relatively common on the upper parts of sandy beaches, as *Euphorbia heterophylla* L. (e.g. Ridley 1924). However, these plants are actually referable to a similar species, also native to tropical America, *Euphorbia cyathophora* Murray. The similarity between the two species has led some authors to consider *E. cyathophora* as a variety of *E. heterophylla* or even to treat them as conspecific. However, most recent treatments of the genus for different floras (Radcliffe-Smith in Airy Shaw 1977, Ma & Wu 1992, Burger & Huft 1995, Lin & Hsieh 1993, Chrizenhusz 1998), with the notable exception of Philcox (1997), have treated the two as distinct species.

Distinguishing the Two Species

The consistent differences between *Euphorbia cyathophora* and *E. heterophylla* are summarized in Table 1. Most authors report leaf shape to be variable in both species and to be unreliable for separating them. However, all the Malayan material of *E. cyathophora* that I have seen, has some leaves with obvious lobing, usually forming a five-pointed outline, whereas Malayan *E. heterophylla* has unlobed leaves, which generally have a shallowly serrulate margin.

Table 1. Morphological differences between *Euphorbia cyathophora* and *E. heterophylla* (after Dressler 1961).

character	<i>E. cyathophora</i>	<i>E. heterophylla</i>
stem cross section	angled	rounded
indument of stem, petiole and capsule	glabrous	more or less hairy
colour of foliage leaves	glossy green	dull green
colour of bracteal leaves	green, often with red at base	green, sometimes with white or purplish at the base
cyathial gland	bilabiate with narrow, elliptic-oblong opening	funnel-like with round opening
seed cross section	rounded	angular
seed coat morphology	finely and sharply tuberculate	coarsely and bluntly tuberculate

Distribution in the Malay Peninsula

Euphorbia cyathophora is relatively widespread in the Malay Peninsula, and particularly common as a weed on the upper part of sandy beaches. It probably naturalized from plants grown for ornamental purposes in gardens. *E. heterophylla* is rarer, with records from Singapore and Pulau Tioman only. This species is grown for medicinal purposes in Malay villages, and has probably escaped from gardens also.

Citation and Synonymy

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Euphorbia heterophylla L. var. *cyathophora* (Murray) Griseb., Fl. Brit. W. I. (1859) 54.

Poinsettia cyathophora (Murray) Klotzsch & Garcke, Monatsber. Königl. Preuss. Akad. Wiss. Berlin 1859 (1859) 253; Dressler, Ann. Missouri Bot. Gard. 48 (1961) 338.

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Poinsettia heterophylla (L.) Klotzsch & Garcke, Monatsber. Königl. Preuss. Akad. Wiss. Berlin 1859 (1859) 253; Dressler, Ann. Missouri Bot. Gard. 48 (1961) 339.

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Euphorbia heterophylla L. var. *geniculata* (Ortega) Gomez, Anales Hist. Nat. 23 (1894) 46.

Euphorbia prunifolia Jacq., Pl. Hort. Schoenbr. 3 (1798) 115; Backer & Bakh. f., Fl. Java 1 (1963) 502; Mohamed Soerjani *et al.*, Weeds of Rice in Indonesia (1987) 288.

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