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Kleinia grandiflora (Asteraceae: Senecioneae), a species and genus newly discovered in Thailand

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Abstract

Kleinia grandiflora (Wall. ex DC.) N.Rani has been recently found in a limestone mountain area of the northern part of Thailand. This represents a record new to Thailand not only of the species but also of the genus. In this study a new complete species description, a map of the species distribution in Thailand, original analytic line drawings, and photographs of this species are provided.

Key words: Compositae, distribution maps, line drawings, new records, species redescriptions, taxonomy

Introduction

The Senecioneae are one of the largest tribes in the Asteraceae (ca. 3100 species and 155 genera) with an almost global distribution (Pelser *et al*. 2010). In Thailand, before this study Senecioneae have been represented by eight genera. These were *Cissampelopsis* (DC.) Lem. ex Lindl., *Crassocephalum* Moench, *Emilia* (Cass.) Cass., *Erechtites* Raf., *Gynura* Cass., *Senecio* L., *Sinosenecio* B.Nord. and *Synotis* (C.B.Clarke) Jeffrey & Chen (Ridley 1923, Gagnepain 1924, Koster 1965, Koyama 1986, 1988, Sennikov 2010). The Senecioneae in Thailand have been little studied (Koyama 1986, 1988, Vanijajiva 2009, Vanijajiva & Kadereit 2008, 2009), and the diversity and phylogeny of the tribe in the region is still poorly known.

Kleinia Mill. is a perennial succulent genus of Asteraceae-Senecioneae. It comprises about 50 species restricted to Madagascar, south tropical and north Africa, the Canary Islands, the Arabian peninsula, Sri Lanka and peninsular India (Halliday 1984, Jeffrey 1986, Nordenstam 2007). It has not been known from Thailand until this study. The genus is easily recognized by the succulent stem, often with tuberous roots, constantly discoid capitula, elongated, narrow, basally little dilated anther collars, style arms with very short to elongated conical appendages, and uniform pappus hairs (Halliday 1984, Nordenstam 2007).

Following Jeffrey (1986, 1992), *Kleinia* belongs to the Gynuroid group of subtribe Senecioninae. This group, which includes *Kleinia* (incl. *Notonia* DC. and *Notoniopsis* B.Nord.), *Gynura* and *Solanecio* (Sch. Bip.) Walp., is characterized by the presence of prominent drusiform crystals in the ovary wall, always discoid capitula and mostly a subsucculent to succulent habit (Jeffrey 1979). The Gynuroid group is distributed in the Old World, mostly in tropical climates. *Kleinia* is distinguished by its succulent habit and appendaged style arms, *Gynura* by its herbaceous habit and long, erect, subulate and papillose style arm appendages, and *Solanecio* by its truncate style arms with or without an apical tuft of longer, more or less fused papillae (Jeffrey 1986). In recent molecular phylogenetic study of a large sample of Senecioneae Pelser *et al.* (2007) provided new insights into the relationships of the Gynuroid complex within the tribe. This analysis of ITS sequences showed that the Gynuroid group as understood by Jeffrey (1986, 1992) is well supported as a monophyletic group with *Kleinia* being most closely related to the non- or subsucculent *Gynura* and *Solanecio* (Pelser *et al.* 2007).

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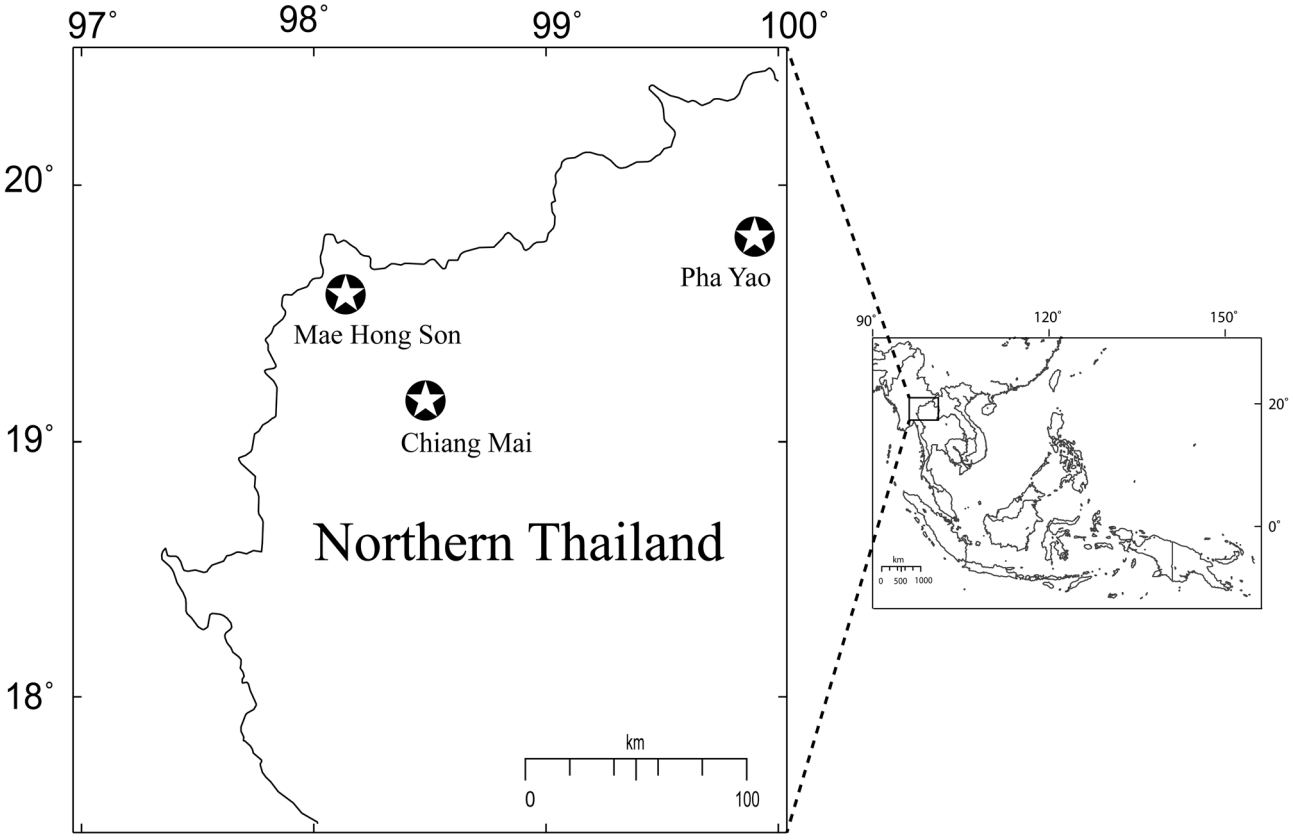

FIGURE 3. Map of the distribution of *Kleinia grandiflora* in Thailand.

Note:—In Thailand, plants resembling *Kleinia* include the genera of Senecioneae that share floral features such as phyllaries free, arranged in a single row, and tubular bisexual florets. The genus most similar to this is *Gynura* which is characterized by its herbaceous habit and long, erect, subulate and papillose style arm appendages, whereas *Kleinia* has a perennial shrubby habit and short triangular-conical style arms (Vanijajiva & Kadereit 2011).

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