

## Four new combinations in the legume genus *Brachypterum*

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### ABSTRACT

The genus name *Brachypterum* (Fabaceae) is now conserved against *Solori*. Four more new combinations in *Brachypterum* are made for the Chinese *B. eriocarpum*, the Australian *B. involutum*, the Indian *B. pseudorobustum* and the Thai and northern Indo-Chinese *B. thorelii*. Some morphological information and nomenclatural history of the genus is provided, as well as a distribution map for the four species.

KEYWORDS: *Brachypterum*, *Derris*, Fabaceae, Flora of Thailand, new combinations, *Solori*.

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### INTRODUCTION

The name *Brachypterum* was established by Wight & Arnott (1834) as a subgenus of *Dalbergia* L.f. containing only *D. scandens* Roxb. Bentham raised it to genus level in 1837, and his concept was accepted by Miquel (1855) and Geesink (1984a). Bentham (1860) himself, however, later reduced it to a section of the genus *Derris* Lour. and this idea seems to be most widely accepted throughout history. Whilst the name *Brachypterum* was used as a genus, four species names were mentioned by Miquel (1855), followed by five more species by various authors, i.e. Dalzell & Gibson (1861) for *B. canarense* Dalzell & A.Gibson and *B. robustum* Dalzell & A.Gibson; Miquel (1861) for *B. microphyllum* Miq., and Thwaites (1864) for *B. benthamii* Thwaites including *B. elegans* Thwaites. Subsequently, Geesink (1984a) found out that Adanson (1763) had described the genus *Solori* prior to the description of *Brachypterum*, by using a drawing in Van Rheedee tot Draakestein (1686) as a type; however, the drawing and description depict *B. scandens* (Roxb.) Miq., the type species of *Brachypterum*. Additionally, *Solori*, is a name that was not used and adopted by botanists in the eighteenth and nineteenth centuries, nor were any species combinations made into it during that period.

Thus, Geesink (1984b) proposed to conserve the name *Brachypterum* against *Solori*, but the Nomenclatural Committee for Vascular Plants (NCVP) rejected the proposal (Brummitt, 1987). A molecular phylogenetic analyses of Asian *Derris*-like taxa conducted by Sirichamorn *et al.* (2012) showed the monophyly and distinctiveness of *Brachypterum* from *Derris*, and proposed to conserve the name *Brachypterum* against *Solori* (Sirichamorn *et al.*, 2013), but the proposal was rejected by the NCVP again (Applequist, 2013). As a result, *Brachypterum* was synonymized within *Solori* and twelve new combinations in *Solori* were made (Sirichamorn *et al.*, 2014). The proposals to conserve were reviewed again by the general committee of the International Association for Plant Taxonomy (IAPT), who asked the NCVP to reconsider their rejections, which resulted in a final acceptance of the proposals. Presently, *Brachypterum* is a conserved name against *Solori* (Applequist, 2017).

*Brachypterum* comprises 12 species in total, distributed from Reunion Island to India, Sri Lanka, Bangladesh, South-East Asia to Papua New Guinea and north Australia. Adema and Sirichamorn (2019) made five new combinations for Malesian *Brachypterum*, i.e., *B. cumingii* (Benth.) Adema & Sirich., *B. koolgibberah* (F.M.Bailey) Adema &

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Sirich., *B. philippinensis* (Merr.) Adema & Sirich., *B. pseudoinvoluta* (Verdc.) Adema & Sirich. and *B. submontana* (Verdc.) Adema & Sirich. In order to complete the taxonomic study of *Brachypterum*, which is a contribution of this genus for the Flora of Thailand and other related regional Floras, new combinations for the remaining four species are presented here, with their distributions shown in Figure 1.

Although Plants of the World Online includes *Brachypterum* within *Derris* following Legumes of the World (Lewis, 2005), the more recent work of Sirichamorn *et al.* (2012, 2014) has clearly shown it is a monophyletic and segregate genus, and thus *Derris* is still an accepted genus, but *Brachypterum* is segregated from it and conserved over *Solori*; POWO is out-of-date in recognising *Brachypterum* as a synonym of *Derris* (G. Lewis pers. comm.). The genus *Brachypterum* is morphologically distinct from *Derris* by often the presence of stipellae, generally more leaflets, more flowers on the brachyblasts, tubular or cylindric or 10-lobed floral disks, and most importantly, the presence of seed chambers (dark and thickened areas in the pericarp around the seeds) in dry pods. Three species have a tree habit, the remaining nine are lianas. Four species were reported in Thailand. The type species, *B. scandens* (or Thao wan priang in Thai), is widespread and well-known in Thailand for its pharmaceutical properties, generally used by local people for treatments of several diseases, especially osteoarthritis. It is sometimes also grown as an ornamental climber due to its many and showy flowers in August to September. *Brachypterum microphyllum* and *B. robustum* are trees, sometimes grown as ornamentals as well. *Brachypterum thorelii* (Gagnep.) Adema & Sirich. (see below for new combination), another liana found in Thailand, is less well known due to its short inflorescences with few and inconspicuous flowers, but is sometimes also used as a local herb.

## TAXONOMY

**1. *Brachypterum eriocarpum*** (F.C.How) Adema & Sirich., **comb. nov.**— *Derris eriocarpa* F.C.How, Acta Phytotax. Sin. 3: 233.1954; Dezhao Chen & Pedley in C.Y. Wu *et al.*, Fl. China 10: 166. 2010.— *Solori eriocarpa* (F.C.How) Sirich. & Adema, Taxon 63(3): 532. 2014. Type: CHINA. Guangxi, Lung Chow, *S.P. Ko 55325* (holotype **IBSC**).

Distribution.— South China, Laos and Vietnam (possibly in Myanmar). Fig. 1.

**2. *Brachypterum involutum*** (Sprague) Adema & Sirich., **comb. nov.**— *Wisteria involuta* Sprague, Gard. Chron. ser. 3, 36: 141. 1904.— *Derris involuta* (Sprague) Sprague, Gard. Chron. ser. 3, 38: 3. 1905.— *Solori involuta* (Sprague) Sirich. & Adema, Taxon 63(3): 532. 2014. Type: United Kingdom. Royal Botanic Gardens, Kew, Temperate House (cultivated from material collected in Australia, New South Wales, Richmond River), 15 Jul 1904, *Sprague s.n.* (holotype **K** [K000898356] photo seen).

Distribution.— Australia (Queensland to North-eastern New South Wales). Fig. 1.

**3. *Brachypterum pseudorobustum*** (Thoth.) Adema & Sirich., **comb. nov.**— *Derris pseudorobusta* Thoth., Bull. Bot. Surv. India 3: 181. 1962.— *Solori pseudorobusta* (Thoth.) Sirich. & Adema, Taxon 63(3): 533. 2014. Type: INDIA. North-East Frontier Agency, *Panigrahi 14550A* (holotype: **CAL**; isotype: **BSI**).

Distribution.— India (possibly in Myanmar or South-west China). Fig. 1.

**4. *Brachypterum thorelii*** (Gagnep.) Adema & Sirich., **comb. nov.**— *Millettia thorelii* Gagnep. in Notul. Syst. (Paris) 2: 365. 1913.— *Derris thorelii* (Gagnep.) Craib in Fl. Siam. 1: 435, 493. 1928; P.K.Lôc & J.E.Vidal in Morat, Fl. Cambodge, Laos & Vietnam 30: 56. 2001; Sirich. *et al.*, Syst. Bot. 37: 427. 2012.— *Solori thorelii* (Gagnep.) Sirich. & Adema, Taxon 63(3): 533. 2014. Type: LAOS. De Xieng Khouang à Pak Lai, 1866–1868, *Thorel s.n.* (lectotype designated by Lôc in Lôc & Vidal in Morat, Fl. Cambodge, Laos & Vietnam 30: 58. 2001: **P!**).

Distribution.— North and North-eastern Thailand, Laos and possibly in North Vietnam. Fig. 1.

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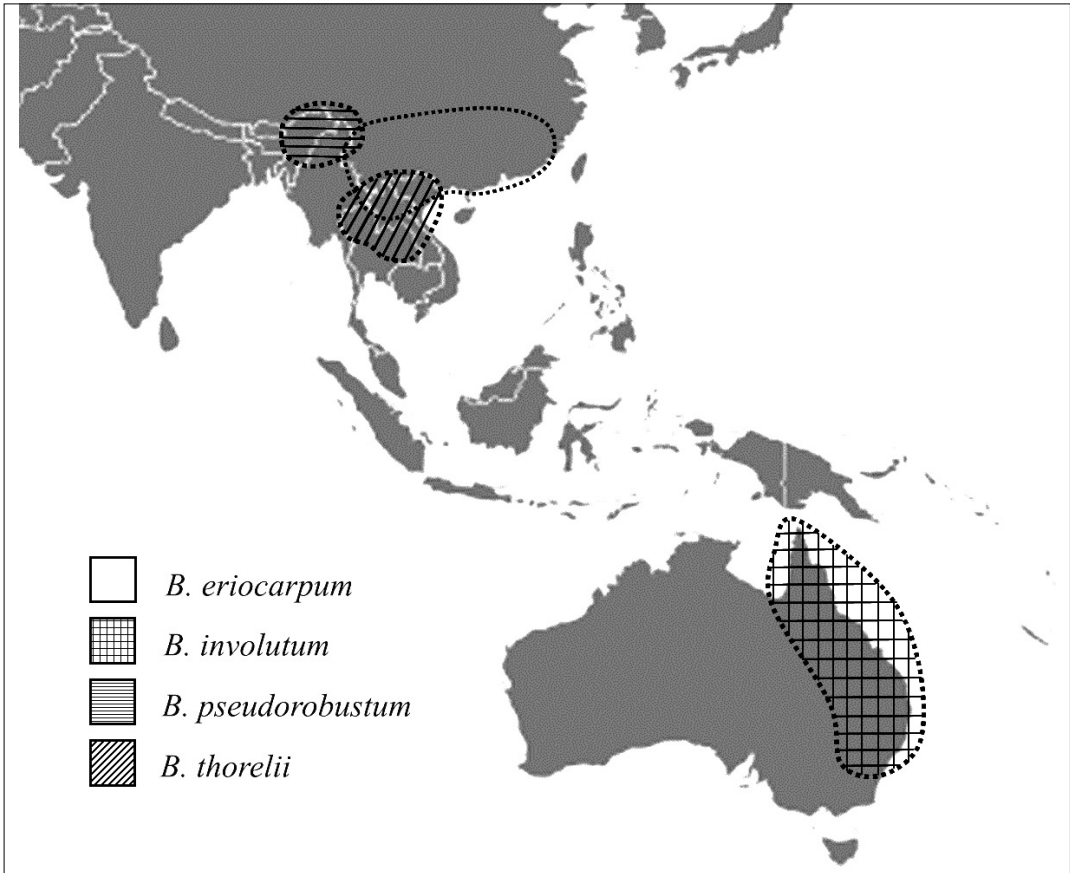


Figure 1. Map showing the distribution of *Brachypterum eriocarpum*, *B. involutum*, *B. pseudorobustum* and *B. thorelii*.

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