



Nomenclatural changes in the genus *Bremeria* (Rubiaceae)

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Key words

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Abstract Five new combinations are made in the genus *Bremeria*: *B. arachnocarpa*, *B. eriantha*, *B. scabrella*, *B. landia* var. *holosericea*, and *B. landia* var. *stadmanii*. *Bremeria gerrardii* is conspecific with *Gaertnera phanerophlebia*, and thus excluded from *Bremeria*. Lectotypes are designated for *Mussaenda erectiloba* var. *scabrella*, *M. stadmanii*, and *M. trichophlebia*.

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INTRODUCTION

On revealing the polyphyly of *Mussaenda* Burm. ex L., Alejandro et al. (2005) described the genus *Bremeria* Alejandro & Razafim. to accommodate all of the Indian Ocean species formerly placed in *Mussaenda*, except the widespread *M. arcuata* L. *Bremeria* is indigenous to Madagascar (18 endemic spp.) and the Mascarenes (Mauritius and Reunion; one endemic sp.); its species are found in humid to subhumid evergreen forests (Alejandro et al. 2005, Govaerts et al. 2009). Alejandro et al. (2005) formally transferred 19 species of *Mussaenda* to *Bremeria*, but further investigation of type material and other herbarium specimens shows that five new combinations are required for the genus. In addition, it is necessary to exclude *B. gerrardii* (Homolle) Razafim. & Alejandro as it is a synonym of *Gaertnera phanerophlebia* Baker, and to revise the synonymy of *B. trichophlebia* (Baker) Razafim. & Alejandro.

MATERIALS AND METHODS

Herbarium material of *Bremeria* was consulted at the Muséum national d'Histoire naturelle, Paris (P), and Royal Botanic Gardens, Kew (K) (abbreviations after Holmgren et al. 1990).

NEW COMBINATIONS

1. *Bremeria arachnocarpa* (Wernham) A.P.Davis & Razafim., comb. nov.

Mussaenda arachnocarpa Wernham, J. Bot. 52 (1914) 69. — Type: *Scott Elliot* 2624 (holo K), Madagascar, Fort Dauphin, May [1888–90].

Mussaenda lantziiana Homolle (1938) 4. — *Bremeria lantziiana* (Homolle) Razafim. & Alejandro in Alejandro et al. (2005) 555, syn. nov. — Syntypes: *Lantz s.n.* (P), Madagascar. Domaine orientale, Matatane, July 1881; *Decary* 10999 (P), Madagascar, Fort Dauphin, Ebahika, 16 Nov. 1932.

Note — *Mussaenda arachnocarpa* and *B. lantziiana* are conspecific. Both taxa are from humid forest areas near Fort Dauphin (Tolagnaro) in Southeast Madagascar. *Mussaenda arachnocarpa* has priority and therefore a new combination is required.

2. *Bremeria eriantha* (A.Rich.) A.P.Davis & Razafim., comb. nov.

Mussaenda eriantha A.Rich., Mém. Rubiac. (1830) 166. — Type: *Chapelier s.n.* (holo P; iso P), Madagascar.

Mussaenda ramosissima Wernham (1914) 69. — *Bremeria ramosissima* (Wernham) Razafim. & Alejandro in Alejandro et al. (2005) 556. — Type: *Humblot* 392 (holo K; iso P), Madagascar, Oct. 1883 (received).

3. *Bremeria scabrella* (Wernham) A.P.Davis & Razafim., comb. & stat. nov.

Basionym: *Mussaenda erectiloba* Wernham var. *scabrella* Wernham, J. Bot. 52 (1914) 68. — Type: *Scott Elliot* 2607 (lectotype K, designated here), Madagascar, Toliara, Fort Dauphin, May [1888–90].

Notes — *Bremeria scabrella* is not like *B. erectiloba* but instead has a greater morphological similarity to *B. pervillei* (Wernham) Razafim. & Alejandro, which comes from the sub-humid forests (Sambirano) of Northeast Madagascar. *Bremeria scabrella* can be set apart from *B. pervillei* on the basis of the stiff pubescence (short hairs) on the under surface of the leaves (vs soft pubescence and longer hairs), sparsely pubescent inflorescence branches (vs densely pubescent), generally rather robust inflorescence parts (vs slender), and distinct (raised and rather thick) tertiary veins (vs flat to slightly raised and thin). Specimens *Schatz & Nicoll* 1231 (K, MO), *Malcomber* 2626 (K, MO), *Randriamampionona* 686 (K, MO) from Parcelle 1 of the Réserve Naturelle Intégrale d'Andohahela (near Fort Dauphin, in the District of Tolagnaro (Toliara)), fall within the circumscription of *B. scabrella*.

Wernham (1914) cites two specimens (syntypes) for *M. erectiloba* var. *scabrella*, *Scott Elliot* 2607 and *Cloisel* 97. The herbaria for these specimens were given as 'Hbb. Mus. Brit., Kew', which upon consultation of the relevant herbaria has to be *Scott Elliot* 2607 (K) and *Cloisel* 97 (BM). We designate specimen *Scott Elliot* 2607 (K) as the lectotype of *M. erectiloba* var. *scabrella*.

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4. *Bremeria landia* (Poir.) Razafim. & Alejandro var. *holosericea* (Sm.) A.P.Davis & Razafim., *comb. nov.*

Mussaenda holosericea Sm. in Rees, Cyclop. 24 (1813) 6. — *Mussaenda landia* Poir. var. *holosericea* (Sm.) Verdc. (1983) 549. — Type: *Commerson s.n.* (holo LINN-SM 352/7; iso P-LA, P), Reunión (Ile Bourbon), 1773.

Note — When transferring *Mussaenda landia* to *Bremeria*, Alejandro et al. (2005) did not make a combination for var. *holosericea*. This distinct variety requires a valid name and so a new combination is made here.

5. *Bremeria landia* (Poir.) Razafim. & Alejandro var. *stadmanii* (Michx. ex DC.) A.P.Davis & Razafim., *comb. nov.*

Mussaenda stadmanii Michx. ex DC., Prodr. 4 (1830) 372 ('*stadmanni*'). — *Mussaenda landia* Poir. var. *stadmanii* (Michx. ex DC.) Verdc. (1983) 549. — Lectotype: *Sieber, Fl. Maurit. II* 79 (lectotype G; isoelectotypes E, K, P, designated here), Mauritius.

Note — When transferring *Mussaenda landia* to *Bremeria*, Alejandro et al. (2005) did not make a combination for var. *stadmanii*. This distinct variety requires a valid name and so a new combination is made here.

LECTOTYPIFICATION OF *MUSSAENDA TRICHOPHLEBIA* AND SYNONYMY FOR *BREMERIA TRICHOPHLEBIA*

1. *Bremeria trichophlebia* (Baker) Razafim. & Alejandro

Bremeria trichophlebia (Baker) Razafim. & Alejandro in Alejandro et al. (2005) 556. — *Mussaenda trichophlebia* Baker (1883) 166. — Type: *Baron 1764* (lectotype K; isoelectotype P, designated here), Central Madagascar. K sheet, Oct. 1882 (com. [sic]); P sheet, June 1889 (purchased).

Mussaenda macropoda Baker (1885) 410. — Type: *Baron 2088* (holo K), Central Madagascar, Dec. 1883 (received).

Mussaenda asperula Wernham (1914) 67. — *Bremeria asperula* (Wernham) Razafim. & Alejandro in Alejandro et al. (2005) 555, syn. nov. — Type: *Baron 493* (holo BM; iso K, P), Central Madagascar, Oct. 1881 (received).

Notes — Alejandro et al. (2005) cite the syntypes of *M. trichophlebia* as '*Baron 493* (syntypes, K, P) [sic]', which is incorrect. Baker (1883) cites two syntypes in his protologue for *M. trichophlebia*: *Baron 493* and *Baron 1764*. The specimen *Baron 493* (BM) was selected by Wernham (1914: 67 — '*Baron 493!* Hb. Mus. Brit.') as the holotype of *M. asperula*, with isotypes at K and P. We hereby designate *Baron 1764* (K) as the lectotype of *M. trichophlebia*.

We agree with Wernham (1914: 66) that *M. macropoda* is a synonym of *M. trichophlebia* and hereby reiterate his synonymy in order to avoid superfluous combinations in *Bremeria*.

BREMERIA GERRARDII EXCLUDED FROM *BREMERIA*

1. *Gaertnera phanerophlebia* Baker

Gaertnera phanerophlebia Baker (1885) 425. — Type: *Baron 2982* (syntype K, isosyntypes BM, P [June 1889 (purchased)]), Madagascar, Dec. 1883 (received); *Baron 2372* (syntype K; isosyntype P), Central Madagascar, Dec. 1883 (received).

Mussaenda gerrardi [sic] Homolle (1938) 4. — *Bremeria gerrardii* (Homolle) Razafim. & Alejandro in Alejandro et al. (2005) 555, syn. nov. — Type: *Gerrard 37* (holo K), Madagascar.

Notes — Examination of type material shows that *B. gerrardii* represents *Gaertnera phanerophlebia*, an observation

confirmed by recent study of *Gaertnera* (Malcomber & Taylor 2009). *Bremeria* and *Gaertnera* are not closely related, the former belonging to tribe *Mussaendeae* (Alejandro et al. 2005), and the latter to tribe *Gaertnereae* (Bremer & Manen 2000, Robbrecht & Manen 2006, Razafimandimbison et al. 2008). Another one of the six *Mussaenda* species described by Homolle (1938) should also not be transferred to *Bremeria*, viz. *M. crinita*, which has since been shown to belong to *Bertiera* (Wittle & Davis 2010). *Bertiera* is not closely related to tribe *Mussaendeae*, but instead belongs to tribe *Bertiereae* (Bridson & Verdcourt 2003, Davis et al. 2007).

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