

# NEW COMBINATIONS IN *DOMINGOA*, *HOMALOPETALUM* (ORCHIDACEAE: LAELIINAE), AND *NEMACONIA* (ORCHIDACEAE: PONERINAE)

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## ABSTRACT

Based on recent studies of molecular phylogenetics in Laeliinae and Ponerinae, new combinations in the genera *Domingoa*, *Homalopetalum*, and *Nemaconia* are needed. These are here provided together with relevant synonymy.

DNA sequence data has had a large impact on our understanding of systematic relationships within Orchidaceae, both at family level (Cameron et al. 1999; Cameron 2004; Freudenstein et al. 2004; van den Berg et al. 2005) and at lower levels. Studies in Laeliinae (van den Berg et al. 2000) have led to changes in generic circumscriptions (van den Berg & Chase 2000, 2001), that have been also discussed in recent treatments (Soto Arenas 2006a, b, c) and new combinations are still pending to validate.

In the ITS phylogeny of van den Berg et al. (2000), *Domingoa* Schltr. was intermixed with *Nageliella* L.O.Williams. Maintaining the latter as a separate genus would render the former paraphyletic. Accordingly, here we combine both genera and carry out the necessary combinations. In the same phylogeny, *Homalopetalum* Rolfe appeared as sister to *Domingoa*. No species attributed to in *Pinelianthe* Rauschert has been sequenced for ITS but there are no synapomorphic traits to separate it from

*Homalopetalum*. Dressler (1993) implicitly questioned the separation of both these genera in his generic listing and Soto Arenas (2006b) proposed to merge them. Furthermore, *H. pumilum* (Ames) Dressler is probably basal to both the species assigned to *Pinelianthe*, and the rest of the *Homalopetalum*. This species was separated by Brieger (1976) in the genus *Sessilibulbum* Brieger (which was invalidly published). *Pinelianthe* has always been a poorly known group; it was originally described as *Pinelia* Lindl., which later was considered an illegitimate homonym of *Pinellia* Ten. (Araceae). Rauschert (1983) tried to solve this problem by creating a new name, *Pinelianthe*, and transferring the species then known. Here we transfer the species assigned to *Pinelianthe* to *Homalopetalum*, in accordance with the treatment presented in *Genera Orchidacearum* vol. 6 (Soto Arenas 2006b).

The genus *Nemaconia* Knowles & Westc. was originally proposed for *N. graminifolia* Knowles & Westc., later

transferred to *Ponera* Lindl. Recent DNA studies have shown that *Helleriella* A.D.Hawkes, *Isochilus* R.Br. and *Ponera* constitute a separate subtribe within Epidendreae (van den Berg et al. 2000, 2005). Further studies on the species phylogeny of Ponerinae (Soto Arenas et al. unpublished data) indicate that some species previously assigned to *Ponera* do not belong to the same clade as the type species (*P. juncifolia* Lindl.) but group with *P. graminifolia*. Therefore, the genus *Nemaconia* is resurrected for this group of species to achieve monophyly of the genera of Ponerinae.

**Domingoa purpurea** (Lindl.) Van den Berg & Soto Arenas, **comb. nov.**

Basionym: *Hartwegia purpurea* Lindl., Edward's Bot. Reg. 23 sub t. 1970. 1837.

*Nageliella purpurea* (Lindl.) L.O.Williams, Bot. Mus. Leaf. 8:144. 1940.

**Domingoa gemma** (Rchb.f.) Van den Berg & Soto Arenas, **comb. nov.**

Basionym: *Hartwegia gemma* Rchb.f., Gard. Chron. 2:8. 1878.

*Scaphyglottis gemma* (Rchb.f.) L.O.Williams, Ceiba 5: 156. 1956.

*Nageliella gemma* (Rchb.f.) Dressler, Taxon 15: 242. 1966.

*Hartwegia purpurea* Lindl. var. *angustifolia* Booth ex Lindl., Bot. Reg. 29: misc. 45. 1843.

*Nageliella angustifolia* (Booth ex Lindl.) Ames & Correll, Bot. Mus. Leaf. 10(4): 80. 1942.

COMMENTS: We have examined the type of *Hartwegia gemma* and it is conspecific with the type of *Hartwegia purpurea* var. *angustifolia*; Dressler (1966) had previously suggested the possibility that they were conspecific.

**Homalopetalum alticolum** (Garay & Dunst.) Soto Arenas, **comb. nov.**

Basionym: *Pinelia alticola* Garay & Dunst., Venez. Orch. III. 3: 242. 1965.

**Homalopetalum hypoleptum** (Lindl.) Soto Arenas, **comb. nov.**

Basionym: *Pinelia hypolepta* Lindl., Fol. Orch. Pinelia 1. 1853.

*Restrepia hypolepta* (Lindl.) Rchb.f., Ann. Bot. Syst. 6: 204. 1861.

**Homalopetalum leochilus** (Rchb.f.) Soto Arenas, **comb. nov.**

Basionym: *Epidendrum leochilus* Rchb.f., Flora 48: 277. 1865.

*Pinelia leochilus* (Rchb.f.) Garay & H.R.Sweet, J. Arnold Arbor. 53(3): 394. 1972.

**Nemaconia australis** (Cogn.) Van den Berg, Salazar & Soto Arenas, **comb. nov.**

Basionym: *Ponera australis* Cogn., Fl. Bras. 3(5): 9. 1898.

**Nemaconia dressleriana** (Soto Arenas) Van den Berg, Salazar & Soto Arenas, **comb. nov.**

Basionym: *Ponera dressleriana* Soto Arenas, Orquídea (Mexico City) 12(1): 118. 1990.

**Nemaconia striata** (Lindl.) Van den Berg, Salazar & Soto Arenas, **comb. nov.**

Basionym: *Ponera striata* Lindl., Edward's Bot. Reg. 28: misc. 18-19. 1842.

**Nemaconia glomerata** (Correll) Van den Berg, Salazar & Soto Arenas, **comb. nov.**

Basionym: *Ponera glomerata* Correll, Bot. Mus. Leaf. 9(8): 132, pl. I, 1-4. 1941.

**Nemaconia longipetala** (Correll) Van den Berg, Salazar & Soto Arenas, **comb. nov.**

Basionym: *Ponera longipetala* Correll, Bot. Mus. Leaf. 9(8): 135-137. pl. II, 1-3. 1941.

**Nemaconia pelltita** (Rchb.f.) Van den Berg, Salazar & Soto Arenas, **comb. nov.**

Basionym: *Ponera pelltita* Rchb.f., Gard. Chron. n.s. 14: 8. 1880.

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