



## Nomenclatural notes on Laeliinae-V. New combinations for invalid names in *Prosthechea* (Orchidaceae)

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*Prosthechea* Knowles & Westcott (1838: 111) is the third largest genus of Laeliinae Bentham (1881: 287) with 117 species (Chase *et al.* 2015). The group of species corresponding to *Prosthechea* is widespread in the Neotropics, especially in Mexico, Central America and Brazil, and has been treated since the 60's as distinct from *Epidendrum* Linnaeus (1763: 1347) but with contradictory generic placement. For example, Dressler & Pollard (1971, 1976) included most species in *Encyclia* subgenus *Osmophytum* (Lindley 1841: 81) Dressler & Pollard (1971: 433), but dealt only with Mexican species. Pabst & Dungs (1975, 1977) followed Dressler and treated the Brazilian species also in *Encyclia* Hooker (1828: t. 2831). Brieger (1960) considered them part of *Hormidium* (Lindley 1841: 81) Heynhold (1841: 880) and later Pabst *et al.* (1981) transferred most Brazilian species to *Anacheilium* Hoffmannsegg (1842: 229). Molecular phylogenetic analyses of plastid and nuclear data confirmed that the whole group was monophyletic (van den Berg *et al.* 2000, 2009, Higgins *et al.*, 2003). After an extensive discussion on the generic names by Higgins (1997), he established that the oldest name for the whole clade was *Prosthechea* and proposed most of the new combinations for species previously included in *Epidendrum*, *Encyclia*, *Anacheilium* and *Hormidium*. Later on, other authors decided to subdivide the group into several segregate genera, and proposed two systems that are themselves conflicting in generic circumscription (Withner & Harding 2004, Chiron & Castro Neto 2003a).

During this period of taxonomic instability between a single, broadly circumscribed genus and several smaller, segregate genera, several Brazilian species were described. Initially some of the authors accepted *Prosthechea* (e.g. Chiron & Castro Neto 2003b, Castro Neto & Campacci 2003, Catharino & Castro Neto 2003), but later decided to adopt *Anacheilium* (e.g. Campacci 2004 and most works after 2004). Nevertheless, the broader concept of *Prosthechea* seems to be the most widely accepted in the literature, being used for various floristic studies in the last decade, the Kew Monocot Checklist of Orchidaceae (Govaerts *et al.* 2015), Genera Orchidacearum (Higgins *et al.* 2005), and the Lista das Espécies da Flora do Brasil (Checklist of the Species of the Brazilian Flora, Barros *et al.* 2015).

During research on the Brazilian members of the genus *Prosthechea* we found two species with invalid combinations due to a nomenclature error by the original authors. These combinations were proposed in Baptista *et al.* (2005), but the authors made two statements that invalidated the names. The original basionyms were published as species of *Anacheilium* by Campacci (2004a, b). When Baptista *et al.* (2005) wrote the introduction of the paper, they made two important statements (the emphasis and translation provided here): “In the last years several new species were discovered for the Brazilian flora. Some of them have been described by us, *believing to be using the proper names and being included in the genera we consider correct*”. A few lines later they stated “In the same period there have been many divergences regarding the generic names of some groups in Orchidaceae due to new studies and theories on taxonomic classification. There is no consensus in the matter, and *despite the fact the we keep considering as the most correct the names originally used by us, we decided to make new combinations of names for some of these species*, completing the synonymy of the genera considered valid by other authors. At the same time, some unpublished combinations are proposed”. Their text clearly separates the names into two categories: some are names that were “unpublished combinations” and others are *combinations that they explicitly do not accept* for the names they previously published in other genera. The combinations in the latter category must be considered invalid according to Art. 36.1 of the ICN (McNeill *et al.* 2012). Out of the 23 new combinations in their article, 20 are combinations whose basionyms were not originally of their own and therefore they were not explicitly rejected by the authors, even though some doubt should be cast also on these combinations, at least in the generic circumscriptions they do not accept (i.e. *Prosthechea* s.l. and *Sophronitis* s.l.). However, at least three combinations are based on names proposed by Campacci himself in *Anacheilium* and *Hoffmannseggella* in 2004 and 2005 and therefore fall into the combinations belonging to the generic circumscriptions they stated in the introduction not to accept. These three combinations (if not more) are therefore invalid and their combinations need to be validly proposed again. The combination *Sophronitis presidentensis*